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REBUILDING AND STRENGTHENING THE PLURALISTIC EXTENSION SYSTEM IN LIBERIA

A MEAS Rapid Scoping Mission
March 8-18, 2011

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Report on the MEAS Rapid Scoping Mission
March 8-18, 2011

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ACRONYMS

ACC	Agriculture Coordination Committee
ACE	Agriculture for Children's Empowerment
AD	Associate Degree
AETC	Agro-Enterprise Training Center
BWI	Booker T. Washington Institute
CAC	County Agricultural Coordinator
CARI	Central Agricultural Research Institute
CECs	County Extension Centers
CDA	Cooperative Development Agency
CDSC	County Development Steering Committee
CEO	County Extension Office
CRS	Catholic Relief Services
CU	Cuttington University
DAO	District Agricultural Officer
DEO	District Extension Officer
DRC	Danish Relief Council
DRERD	Department of Research, Extension and Rural Development
DTS	Department of Technical Services
FAC	Farmer Advisory Committee
FAO	Food and Agriculture Organization
FRC	Farmer Resource Center
FFS	Farmer Field Schools
FtF	Feed the Future
GAA	German Agro-Action
GOL	Government of Liberia
HDF	Human Development Foundation
ICT	Information and Communications Technology
IDS	International Development Studies
IRD	International Relief and Development
MEAS	Modernization of Extension and Advisory Services (a USAID LWA Project)
MOA	Ministry of Agriculture
M&E	Monitoring and Evaluation
NGO	Non-Governmental Organization
NRM	Natural Resource Management
NUFA	National Urban Farmer Association
PRA	Participatory Rural Appraisal
PRC	People's Republic of China
SMS	Subject Matter Specialists
UL	University of Liberia
USAID	United States Agency for International Development
WI	Winrock International
WFP	World Food Program
UN	United Nations

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EXECUTIVE SUMMARY AND RECOMMENDATIONS

Introduction

MEAS (Modernizing Extension and Advisory Services – a USAID funded project) conducted a scoping mission to examine the pluralistic extension system in Liberia and to develop recommendations for strengthening this extension system. The assessment work in the field occurred from March 6-18, 2011 and included in-depth interviews with Ministry of Agriculture (MOA) staff, agricultural extension officers and workers, international and national non-governmental organization (NGO) directors, lead farmers, university faculty, agricultural researchers and private sector representatives. The MEAS team also visited farms, County extension offices, as well as universities and training centers. The mission aimed to identify the key issues within the pluralistic extension system in Liberia that will need to be addressed in order to develop a sustainable, farmer-led and market driven system of extension and advisory services. In addition, the mission identified specific recommended actions for consideration by the MOA and for possible future funding by USAID.

Summary of Findings

Extension in Liberia finds itself in a transition period as Liberia moves from the period of post-war relief and rehabilitation to an environment of development and growth. This has led to a number of issues, such as differing approaches for the distribution of inputs (i.e., free distribution versus development of input markets). The MOA is in the process of building County Extension Centers (CECs) consisting of offices, training centers, guest quarters, and an active demonstration farm in all 15 counties, though progress on establishing these CECs has been very limited, due to financial constraints. In the future, the MOA might consider developing smaller, district level extension centers (office/demonstration farms).

In terms of the public extension staff, the MOA faces the situation where well over half of the district agricultural officers (DAOs) are over 50 years old. Many of them require additional training in up-to-date technical and process (extension) skills if they are going to function effectively in an increasingly decentralized, farmer-led, market-driven extension system. MOA staff reported they had very limited resources available for the development and delivery of extension programs, including very limited funds for vehicles and motorcycles and provision of monthly fuel allowances. Free seeds are being provided for example through a European Union financed FAO project. But once project funding ends, such services will probably no longer be a available since the government cannot sustain them on their own.

Additionally, while MOA staff use the terms “farmer led” and “farmer driven” about the public extension system, the extension leaders at the county and national levels within the MOA will need further assistance if they are to move toward implementing a more “farmer-driven” extension system. Presently, to the MEAS team’s knowledge, no “formal” County Extension Advisory or Steering Committees have been established to help shape and provide substantial input on extension programming. Additionally, the “market” orientation of extension workers at the current time is inadequate and steps must be taken to shift extension’s program focus and the delivery of extension services to become more “market driven,” especially for high-value crop, livestock, aquaculture and other products (e.g., mushrooms, honey). In terms of methodology, the MOA extension system would benefit from explicit utilization of Participatory Rural Appraisal (PRA) and related approaches in its move towards more farmer-led extension programming.

For example, identifying innovative farmers in each County and/or District could be a useful teaching tool to demonstrate the benefits of intensifying and/or diversifying the crop/livestock/ fisheries production systems. In short, innovative farmers could become effective peer trainers. Conducting PRAs is a useful tool to identify these farmers in each area and then to engage them either directly or indirectly in sharing information and management practices with other farmers.

Technical backstopping services for the field extension workers need to be expanded and improved. Links between the Department of Technical Services (DTS) and the Department of Research, Extension and Rural Development (DRERD) deserve greater attention. Likewise, the policy and coordinating role of the MOA, in terms of fostering a more consistent set of extension programming practices across the diverse group of service providers within Liberia's pluralistic system has to be strengthened. MOA has an important role to play in developing and delivering extension programs and messages, including technical guidance, such as recommended practices, fact sheets, audio files, etc.

It is estimated that at least sixty (60) NGOs provide extension and advisory services in different counties and districts throughout Liberia. The MEAS team met with ten of these international NGOs and most of them have subcontracts with local NGOs who actually provide the direct advisory services to farmers. It should be noted that the MEAS team is concerned that some NGOs are following an unsustainable and flawed model of handing out free inputs and tools; thereby creating "farmer dependence" on these NGOs.

Instead of providing handouts, some international NGOs such as ACDI-VOCA and CARE, are following a different strategies in providing advisory services to farmers. In the case of ACDI-VOCA, their key is in organizing and linking farmers to exporters for key tree crops (e.g., cacao and oil palm) and then training them how to use this income to further diversify their farming systems in producing locally consumed, high-value products (vegetables, livestock and fish). ACDI-VOCA indicated that they were serving about 10,600 farmers in their LIFE project and an additional 1,000 farmers in ACE project. ACDI-VOCA, CARE and some of the other international NGOs have been actively organizing farmers into groups to share production practice knowledge and for marketing purposes. While many NGO managed extension related projects seem to be quite successful, they are costly and serve only a very limited number of farmers. A challenge for any kind of donor dependent and project based intervention is the long-term sustainability of the services provided by the NGO. Unfortunately the successful work of NGOs can result in a weakening of public sector extension services because the NGOs can often pay higher salaries and provide operational funds to their personnel, thus attracting some of the most competent staff away from the public extension system. One could argue whether the problem is that the NGOs pay too much or that the public sector pays too little. The concern is that too heavy dependence on NGOs may have a negative net effect on the pluralistic system as a whole and that the services provided by NGOs reach a very small number of farmers at a high cost per farmer.

Although the MEAS team did not have the opportunity to meet with BRAC, this development organization has built a strong reputation for effectively reducing poverty by empowering the poor to bring about change. BRAC uses an integrated approach of providing micro-credit, inputs and advisory services. BRAC has been operating in Liberia for only three years but has already organized 1,200 community groups involving 22,000 women farmers as well as rural women especially for off-farm, value-added activities. BRAC is not donor driven in that they are not as dependent upon the donor-project cycle as some other NGOs.

Recommendations for Consideration

These recommendations are being made to help Liberia transition from an agricultural extension system that is primarily focused on relief and sectorial rehabilitation, to a pluralistic extension system with a solid core capacity within the MOA, that can both coordinate and deliver extension services that are more farmer-led and market-driven. These recommendations have three main thrusts: 1) capacity development and institutional strengthening of the MOA and its ability to both coordinate and deliver needed extension services; 2) strengthening the extension methodologies used throughout the pluralistic extension system, including participatory approaches (e.g., farmer-led), including Innovative Farmers (positive deviance approaches, asset-based agricultural development approaches); and, 3) strengthening of the extension education and training programs that better prepare extension workers to pursue a more farmer-led and market-driven approach to developing the agricultural sector in Liberia.

Farmer-led Extension Programming - Development of farmer advisory committees (FACs) at the county level would help determine priorities for extension services being provided within each county, and possibly even differentiating priorities by districts within each county. The committees would consist of 10 to 15 farm leaders, for example the heads of producer groups. At least one third of the members, ideally half of them, should be female. The FACs would meet monthly to help determine extension program priorities, as well as to monitor the performance of extension personnel in the county and its districts. Functional FACs will result in the extension system becoming more farmer-driven. By being involved in the setting of priorities, farmers will be involved in determining how resources are allocated within each county for program development and the delivery of advisory services.

The first step towards developing a farmer-led extension system is to train MOA extension officials and the county extension directors in how to establish these FACs at the country level. This could be done in a 2-3 day workshop, including the procedures for selecting and establishing these FACs and then in training these farm leaders about the role they will play in moving these FACs forward in a positive manner. After these county FACs are functioning, it would be useful for district extension workers to set up similar committees at the district level. Eventually, the heads of each district FAC would then serve on the county FAC. This would ensure a more “bottom-up” farmer driven extension system.

Development of County and District Level Demonstration Plots/Farms - As explained in this report about our assessment of the Margibi County Extension Office, we strongly recommend that the MOA develop both Extension Training Centers and effective Demonstration Farms at the County level. Eventually, these demonstration farms could also be established at the District level. Based on the feedback and approval of the FAC, these demonstration farms should showcase the recommended production practices and farming systems that are being recommended within each county and/or district. If properly managed, these demonstration farms could become revenue generating units for the County Extension Office. Furthermore, as farmers get organized into producer groups, they could use the County Extension Office (and farm) as the collection point for livestock as well as for gathering, packaging and marketing high-value crops throughout the county and the Monrovia market.

Capacity Development and Training of MOA Extension Personnel - A series of in-service training activities is needed to up-date the skills and knowledge of the current extension workers. These in-service training courses should focus on a) extension methods and process skills (e.g., participatory extension methods like PRA), b) how to organize producer groups and link them to available markets, so these farmers can successfully market their agricultural products and c) specific technical training on

crop/livestock/fishery management practices, especially for those new crop and livestock systems that need to be introduced into the different counties across Liberia. Subsequently, some of the younger, more competent extension personnel with diplomas should be selected to continue their education and earn B.Sc. degrees in agricultural extension.

One or more of the Liberian universities could be selected to carry out this in-service training for the current county and district extension staff. Course and curriculum development could be done in collaboration with the MEAS project. MEAS is already putting together training modules on a range of topics that can be made available to the Liberian partners. Together the material can be adapted to the local needs and delivered in formats that are suited either for workshops for full-time staff or integrated into the universities on-going agricultural extension degree program. In terms of educational assets to build upon, the University of Liberia (UL) has an Agricultural Extension Department. Athough at the present time UL does not appear to deliver a functioning program in extension education, they do have faculty who could teach in this program. Cuttington University (CU) has a functioning agricultural development oriented program, and it could also serve as a place to deliver in-service training for MOA Extension personnel. These training activities could be shared between CU and UL and also disseminated to other colleges and training institutions such as the Booker T. Washington Institute. To initiate this process, it is suggested that the instructors who developed these different MEAS modules be sent to Liberia to conduct specific workshops for university, MOA and key county extension officials.

Establishing an Extension Communications Unit - Develop a small unit within the MOA to begin developing and distributing new extension materials (handouts, fact sheets, media products, including an on-line website that would include technical materials, videos and sound files), as well as other educational materials that could be used by both the public extension staff and other advisory service providers (e.g., private sector and NGOs) in Liberia. One of the first tasks would be to inventory improved techniques and practices observed in Liberia as well as those working in the region and applicable to Liberia. These techniques and practices can serve as a bank of content based on which the communications unit can develop and then disseminate extension materials. The unit should be positioned to assist in transforming research findings into useable extension messages that can be easily used by field extension staff and understood by all types of farmers. This communications unit should be prepared to conduct in-service training on how to use the material it develops. Possibly, this unit could assist MOA in strengthening the much needed monitoring and evaluation (M&E) of extension activities across Liberia

Internet Resource Website - It would be important to keep up-to-date technical, marketing and other needed information available on internet websites, so this information can be easily accessed by each County Extension Office (CEO), NGO service providers and to progressive farmers who eventually will have improved internet access. Two CEOs already have buildings and are now receiving computers from the FAO, but the internet is accessed primarily through telephone modems in these rural counties, so on-line access to this information is very slow. In a few years broadband wireless access may be more widespread.

Making "Tablets" Available to Field Extension Workers - With assistance from the extension communications unit the MOA should develop a "technical resource" website and then provide electronic tablets (e.g., iPads), which should include information on all approved and recommended crop, livestock, fisheries and other technologies and management practices. These tablets should be loaded with available information (both from the MOA and other countries within the region) and then distributed to both the county and district extension staff. In this way, they can then easily share this information and technical recommendations directly with farmers and farmer groups within their

respective county or district. When Wi-Fi capacity is eventually expanded across Liberia, then these field extension staff could directly download all new technical and market information, either from the county extension office or directly using Wi-Fi.

Farm Radio - Farm Radio should be introduced to all different radio stations across Liberia. Presently CU has a farm radio program and this could be supported and built upon. The MOA could play a supporting role for farm radio, perhaps through the Extension Communications Unit, by producing content and facilitating a network of farm radio participating stations. Additionally, the MOA can use the Extension system and farmer groups to facilitate the identification and development of extension-related radio messages. In addition, as market information becomes more readily available, this information should be shared on a daily basis through Farm Radio broadcasts. Beyond MEAS resources, additional partners including possibly Farm Radio International and other organizations with farm radio expertise could be involved in the program to provide some training and support.

Capacity Development Using Emerging Innovative Farmers and Value-Chain Leaders - The District Agricultural Officers (DAOs) (and the County Agricultural Coordinators (CAC)/County Extension Office CEOs) should carry out a participatory rural appraisals (PRA) to identify innovative farmers within their respective district and county. The PRAs will help identify new production and market opportunities. (PRAs would also be used to identify priority agricultural problems within communities as well as locally feasible ways to address these problems.) Training extension staff in PRA methods would be necessary prior to launching this effort. The innovative farmers identified through the PRA could then be visited by the emerging leaders of different community and/or producer groups to learn more about how these new community groups might begin supplying specific markets,. They will also learn how the producer groups might need to adjust their practices for specific products, post-harvest processing and marketing activities. Graduates of the Songhai Agro-Enterprise Training Center (AETC) could play important, but different roles within these emerging value chains, so they too could become role models for others within the county to follow in terms of value-added processing.

Using Innovative Farmers for Peer Training with Identified Lead Farmers in Communities - Once identified through the PRA, it will be important to engage the innovative farmers to share their best farm management and marketing practices within their particular district and county. Through field visits and/or talks these innovative farmers can share their specific farm management practices with potential lead farmers in other villages, communities and districts. Also, some of these more promising "success stories" should be video-taped and then made available on-line and included on the "tablets" that will be made available and used in the field by these county and district extension workers.

Marketplace Literacy Curriculum and Implementation - An entrepreneurial market literacy program, which will engage and empower poor subsistence farmers (especially women farmers and landless rural women) to participate in the marketplace will result in mutually beneficial exchanges. Aimed at low-literate, low-income farmers through adult non-formal education methods that are active, engaging and practical. Marketplace literacy is not basic literacy but it refers to social skills, awareness of rights, and self-confidence to negotiate in the marketplace. This component could be expanded to include some support of adult literacy development.

Other Possible Recommendations for Consideration

Cash-on-Delivery within a specific County Extension Office or Pay for Extension Performance - Another option might be to work with MOA on the basis of a "performance plan" with some limited, up-front funds to strengthen a specific County's extension program. These funds would be based on and

paid re: the accomplishment of key milestones and tasks related to extension program development. Performance targets could include the number of farmer groups being organized and/or served; status of the county demonstration farms; the number of extension training events actually conducted and the level of farmer participation; and other observable and measurable outputs. Measurement could include reporting and direct observation, as well as a survey of farmers and other people within the County. This approach with an emphasis on performance and outcomes could take advantage of research conducted in the public health and education sectors in developing countries, where different methods have been employed to improve teacher or public health worker productivity (e.g., camera documentation of attendance, establishment of advisory committees, incentive payments based on productivity). Objectives of this effort would be to develop performance abilities and documented outputs as well as the MOA's ability to deliver in a performance oriented context. Other contracting methods in the "pay for performance" area could be considered such as vouchers with farmers groups or other public/private linkages to build the capacity for more demand driven and performance oriented extension services.

Launching of Trained High Potential Farmers - Working with select universities and colleges (especially BWI and CU) to identify and then promote and help start skilled young farmers with high potential (from rural area, previous experience in farming, good performance in school and good basic writing and reading and analysis skills) into an agricultural business to serve as model farmers within specific districts and counties. If possible they should receive a parcel of land large enough to develop a commercial model farm and then receive the needed transitional support to develop and launch this model farm. This support would include access to low or no interest loans to allow them to purchase farming equipment, such as power tillers, rice dehullers and/or small-scale milling equipment, such as cassava processing equipment. They would be required to develop a farm business work plan to begin this program and then to develop their farm. In return for this support, they would have the opportunity and be expected to participate in teaching events (and receive a small honorarium) where they would teach about their farm and their agribusiness experience and commercial development. They would participate in a network of model farmers that would meet twice a year for training and network development.

Student Placements in Extension Programs being provided by the MOA and NGOs, as well as private sector extension programs for important tree crops (cacao, oil palm, etc.). To prepare potential extension workers for their forthcoming assignment, students should be assigned to work with progressive and effective extension workers, so they can learn how these field staff inform and train farmers and farmer groups on how to increase their productivity and incomes by producing more high-value crop and livestock products.

Curriculum Development on Effective Extension Methods, including the most effective ways of organizing sustainable producer groups and linking them to markets. All of these up-to-date and effective training materials should be shared with the UL (B.Sc. degree program in Agricultural Extension), CU and the BWI within Liberia.

Developing an Up-To-Date Agribusiness Program at CU and UL - This would allow additional training opportunities for future MOA staff (as well as upgrading skills for current MOA staff) to develop skills in agricultural business domains and strengthen their market orientation.

Private Sector Extension Matching Fund and Grower Training Network - Tree crops, especially rubber, but also cocoa, coffee, and oil palm, are important both to small-holder growers, private sector firms, and to the national economy of Liberia. In order to encourage and strengthen private sector

efforts with small-holders to improve the quality and productivity of production outreach efforts would be beneficial. Outreach efforts by firms can also address issues beyond the specific tree crop in question, as most small-scale growers also produce other crops. A network of private sector outreach programs would be developed in order to share approaches and information. A small-grant facility could be established so that private company funds can be leveraged for outreach educational efforts with outgrowers.

ASSESSMENT OF THE PLURALISTIC AGRICULTURAL EXTENSION SYSTEM IN LIBERIA

Introduction

Liberia is in a post-war transition period and the society is moving from a time of relief and rehabilitation to an emphasis on development and agricultural growth. The country orients its economic and social policies through an overall Poverty Reduction Strategy which consists of four pillars: Expanding Peace and Security; Revitalizing Economic Activities; Strengthening Governance and the Rule of Law; and, Rebuilding Infrastructure and Providing Basic Services. The country is one of the poorest in the world, with a GDP per capita (PPP, World Bank) in 2009 of $395 (current $). Out of a population of roughly 3.9 million (World Bank), 880,000 people are economically active in agriculture, demonstrating the importance of the sector to livelihoods.

The pluralistic extension system in Liberia includes extension activities and programs delivered by NGOs, the Ministry of Agriculture's (MOA) Extension program, and a variety of nascent private sector actors. While considerable diversity in approaches and programs exists within extension in Liberia, coordination comes from the Agriculture Coordinating Committee, which meets monthly at the national level (coordination meetings also occur at the County level on a monthly basis). These meetings allow discussion of pressing policy and agricultural concerns, as well as some sharing of programmatic approaches between the roughly 60 NGOs involved in the Committee and the Ministry of Agriculture.

In this dynamic post-war recovery period, the MOA staff and NGO staff reported an extension programming climate where farmers and community members often ask for and expect hand-outs or payments from an NGO or MOA program for participation in the program or for labor contributed. This tension is to be expected in a situation where, since the war, NGOs and the Government of Liberia (GOL) has been distributing inputs for free or at very favorable terms and where rice fields and other agricultural infrastructure has been rebuilt and rehabilitated using food aid or other payments. As a more developmental and commercial environment appears in Liberia's agricultural sector, rationalizing this landscape through agreement between the MOA, donors, and NGOs and farmer organizations will be necessary in order to build markets and encourage private sector involvement in input markets and output marketing channels.

The methodology followed by the MEAS Scoping Mission team of Dr. Burton Swanson (University of Illinois), Dr. Paul McNamara (University of Illinois), and Dr. Brent Simpson (Michigan State University) included several dimensions. First, the team reviewed documents related to the MOA policy framework for agricultural growth and other agriculture and extension related documents. Second, the team conducted interviews with MOA staff at all levels, including field extension staff and researchers. Third, the team interviewed representatives from NGOs active in agricultural extension in Liberia. Fourth, the team met with farmer group representatives, visited farms, and spoke with individual growers about their experiences in learning about new agricultural techniques, marketing opportunities, value-added options, and their means of obtaining inputs. In addition, we learned about farm group organizations and the issues being faced to become more sustainable, business-oriented, farmer organizations. Lastly, we interviewed university, college, and training program staff to learn about the pipeline of extension personnel and other trained agriculture workforce development issues.

The outline of this Scoping Mission report is as follows. In the next section we present an overview of the current pluralistic extension system in Liberia through a description of the MOA, NGOs, private

sector, as well as university training programs in extension. Our observations on issues we observed are presented throughout this section. The following section presents our summary comments on a set of extension system strengthening topics (Key Issues) including extension and research linkages, gender, ICT, fertilizer and other inputs, and extension support services. The last section of the report concludes with final summative remarks on the future direction of the pluralistic extension system in Liberia.

Description of the Current Pluralistic Extension System

Ministry of Agriculture - The Ministry of Agriculture (MOA) currently has 72 agricultural extension agents spread across 15 counties in Liberia. Unfortunately, due to low salaries, the MOA has lost 9 of their newer extension agents since their high of 81 extension staff in 2008. This means there is less than 1 public extension staff member per 10,000 persons active in agriculture (according to FAO data from 2008, the total economically active population in Agriculture was 883,100). In each county, there is a County Agricultural Coordinator (CAC) who supervises and monitors the District Agricultural Officers (DAOs). Although it was reported that there are about 120 districts in Liberia, there are only about 55 DAOs or less that 50% of the front-line extension staff needed to provide advisory services to men and women farmers, especially farmer groups within these different districts. For example, in Bong County, which the MEAS team visited, there are 12 districts, but only 5 DAOs. Also, it was reported that the majority of DAOs are at least 50 years old or older and will likely retire over the next 5-10 years.

In discussions with the MOA's Minister Chenoweth, she indicated that most, if not all of the CAC and DAOs need in-service training to build a more market-driven extension system that addresses the food problems in the country, including the need for improved market linkages to help serve the markets in urban centers. Also, she indicated that the peri-urban households around Monrovia also need training and advisory services in how to produce horticultural crops, as well as poultry and other livestock and fish products. Unfortunately, there are no MOA extension service providers around peri-urban Monrovia.

Physical and Transportation Resources - The current plan is to develop a County Extension Office (CEO) in each county, as well as demonstration farms adjacent to these CEOs. The best example of this proposed model is in Margibi County where the able CAC, Mr. Cooper, has developed extension offices for himself and his staff, as well as an extension training center for the farmer groups they have helped organize. The demonstration farm that is adjacent to the CEO made a very good impression on the assessment team. Currently, the Margibi CEO has demonstration plots on about 5 acres, but the CEO has access to about 50 acres at this site, which they hope to bring into production as a "revenue-generating" demonstration farm. Currently, they are producing and making available improved varieties of different vegetable and cash crops (e.g., eggplant, tobacco, etc.). They are also selling improved varieties of vegetable seed (and seedlings) to farmers within their county. Their primary problem at the moment is their lack of funding to hire daily workers who can further develop their planned lowland rice paddies (develop the bunds, etc.), fish ponds, as well as in developing the upland area across the small river from the CEO.

The MEAS team also visited the CAC and DAEs in both Montserrado and Bong Counties. In Montserrado County, the CAC has just one small office within the County government building and the DAEs have no offices. In addition, at the present time, the CEO in Montserrado County does not have a demonstration farm, but they would like to have land allocated to the CEO, so they could begin developing a demonstration farm along the lines of Margibi County. In the case of the CAE in Bong County, two months ago, they were allocated a very large administrative building constructed by the World Bank for a different project. This building has many offices, desks, chairs, and some equipment.

However, the location of this CEO, which is behind the United Nation's (UN) military center, may reduce small farmer access to this CEO. In addition, it was unclear about how and when the extension staff might begin to develop a demonstration farm adjacent to this CEO without the necessary funding. Obviously, they will need start-up resources to develop this demonstration farm and make it financially sustainable.

All CACs now have good quality vehicles (Toyota Land Cruisers) and many DAEs now have motorcycles, so they can attend meetings and regularly meet with farmer groups. One major constraint is the lack of adequate fuel (55 gallon/month for Land Cruisers and 5 gallons/month for motorcycles). Given the number of county and national meetings each month for the CACs, much of this fuel allocation for the land cruisers is actually used to attend these administrative meetings; therefore, this limits their capacity to meet with farmer groups on a regular basis, especially in providing needed advisory services.

Extension Personnel - As noted above, in terms of having one DAE for each district, it would be necessary for the MOA to hire at least another 70 qualified extension staff. In addition, at the present time, there are a limited number of Subject Matter Specialists (SMSs), but they are actually located in the Department of Technical Services (DTS), which is a different unit from the Department of Research, Extension and Rural Development (DRERD). Therefore, if the CAC or DAEs need specific technical advice, they need to go to a different administrative unit within the MOA, which complicates the provision of advisory services to farmers.

In addition to the paid DAE staff, the team also met with several "volunteer" extension workers, since they are looking for paid extension positions, either with the MOA or NGOs. Some of these volunteer extension workers have a B.Sc. degree in general agriculture, while others were trained at the diploma level, also in general agriculture. Thus there are a number of trained agricultural graduates who are looking for extension positions, either with the MOA, NGOs, or the export crop (oil palm, cacao, etc.) industry.

Most of the CACs and many of the DAEs that the team met with have B.Sc. degrees in general agriculture, but the Minister expressed real concern about their capacity to deliver appropriate advisory services to farmers, especially in a more market-driven economy. Also, in some counties, like Margibi County, the extension personnel are heavily engaged with other projects, like the FAO financed rice distribution project (e.g., delivery of free rice seed to farmers in their county). In this case, the extension staff is heavily engaged in seed distribution at specific times during the year, rather than focusing on extension activities about how small-scale farmers can increase their household income by diversifying and intensifying their farming operation.

It should be noted that some donors are putting considerable emphasis on vegetable production as a good way to increase farm household income. Therefore, vegetable crops, such as cabbage, bitter gourd, pepper, okra, or green beans as well as fruit crops (pineapple), tree crops (oil palm, cacao, etc.), and other crops, such as peanuts or maize are also being promoted and supported by other NGO funded projects. While moving small-scale farm households to these higher-value crops is important, there are also some other insect, disease and other technical problems on which field extension workers (both the MOA and NGOs) will need more training, so they can help farmers avoid or deal with many of these serious problems.

The MOA is putting major emphasis on lowland rice production; however, developing these "swamp" or lowland rice paddies requires considerable labor in developing the "bunds" for these rice

paddies. But most farmers prefer up-land rice production (i.e., slash-and-burn with seeds being broadcast rather than planning bunds), since it requires much less labor. Farmers largely produce rice at low input intensity and primarily for subsistence consumption since rice prices in Liberia are generally kept low. Production in lowland rice paddies would result in much higher yields, if fertilizer is used, and would help meet the overall urban demand for rice, which is the primary stable food crop in Liberia. However, at the present time, given both high fertilizer costs and the low cost of imported rice, it will be difficult for most small-scale farmers to make much profit producing lowland rice.

In general, the public extension workers (as well as the NGO extension workers) need considerable training in how to intensify and diversify farming systems, as well as how to organize and link farmers to markets. While DAEs have general training about technical agriculture, they will need additional training if they are to organize farmer and/or producer groups within different villages and then move these farmer/producer groups toward more "market-oriented" farming systems.

Observations from the Montserrado County Extension Office

When meeting with the CAC (Mulba Bryant) at the Montserrado County Extension Office, he indicated that he and his DAEs have numerous administrative meetings each month. For example:

- The CAC and the DAEs meet every Monday morning to discuss last week's activities and plans for the coming week;
- The 2nd Wednesday of each month is for meetings with the NGOs working in Montserrado County;
- The 3rd Wednesday of each month is the meeting of the Economic Revitalization Commission (ERC) within the county;
- The last Thursday of each month is for the Agriculture Coordination Committee (ACC) meeting at the MOA in Monrovia for the County Development Steering Committee (CDSC) meeting; in addition, he said that
- Every Friday there is a scheduled meeting of the CAC directors at the MOA in Monrovia.

He also indicated that the basic extension strategy being used is "technology transfer" using the Farmer Field Schools (FFS) methodology. He indicated that most DAEs work with about 300 farmers/agent and that most extension workers give farmers inputs for their "demonstration plots" on their respective farms. Also, he said that the DAEs were working with 4-5 community groups within their respective districts. In addition to the CEO, he indicated that there were a number of NGOs in their county, including: a) ACDI-VOCA (with 10+ extension staff), which focuses on linking farmers to markets; b) Action-Aide (about 6 extension staff); c) Zoa (with about 8 extension staff), d) Action Against Hunger and e) BRAC. He indicated that they are trying to determine where each of these NGOs actually works within their county. In most cases, NGOs give their target farmers both seed (rice) and equipment (cutlass, hoes, etc.).

He also said that the challenges of the County Extension Office (i.e., the DAEs) are the following:

- Changing the attitudes of farmers toward the increased production of food crops, to focus on cash crops, where they can make more income;

- Most DAEs lack the needed skills and knowledge; for example, how to train farmers to develop integrated crop and livestock systems. In short, DAEs need more training in technical (crops and livestock), marketing and extension process management skills.
- DAEs lack the needed resources to implement their proposed work plans; for example, they receive only 5 gallons of fuel each month for their motorcycles.
- The poor working environment for these DAEs, since they have no offices at the district level or places to live within their respective district.

Margibi County Extension Office - At the team's meeting at the Margibi County Extension office, most of the time was spent learning from the different farmer and producer groups that had been organized by the CEO, including one community group that had 30 farmers (11 women farmers) who were growing rice and vegetable crops (cassava, pineapple, etc.); another group of 30 farmers (7 males) who were engaged in collective farming (there was a problem of some farmers not participating); and another group of 72 male farmers. In addition, there was the leadership from another group of nearly 100 farmers (72 women and 27 men) who were working together to produce corn (they made $5,000 in profit this year) and peanuts. In this case, everyone was expected to work 3 days/week and they were given 1 cup of rice/day and $10 Liberian dollars each week if they actually worked. The money earned by this group was being saved in a bank account and members could take out loans several times each year,. Their primary problems included the late arrival of rice seed and specific pest problems with the vegetable crops being produced.

Other producer groups who participated in this meeting at Margibi CEO included the United Farmer Association, which has been operational for 5 years. They focus on producing roots and tubers and they earned $6,050 last year. Their advantage is that they have a cassava processing machine. There are 30 members of this group (14 men and 16 women). Another group was the Progressive Farmer Organization that provides hand tools and seed to farmers, also supplied by the FAO through the CEO. It was noted that the MOA and CEOs were distributing lots of hand tools to local farmers free of charge. The final group was the Women in Peace Building Network of 31 women farmers who are producing vegetables (okra, long green beans, etc.) on 50 acres of public land allocated by the MOA. In this case, an agricultural instructor from the BWI has been coming and teaching them twice a week (Saturdays and Tuesdays).

Bong County Agricultural Extension Office - The CAC at the Bong County Extension Office indicated that their primary responsibility was in coordinating the NGOs who are providing extension services within Bong County. Although there are 12 districts in Bong County, they only have 5 extension staff; therefore, it is impossible for them to reach all of these farmers directly. The CEO indicated that there are 7-8 NGOs active in Bong County, with approximately 35-40 extension staff (e.g,. ACDI-VOCA, CRS, Africare, Samaritan Purse). She indicated that some of these NGO extension staff members (i.e., the county directors) have B.Sc. degrees, while most field workers have post-secondary diplomas and some are only high school graduates. She indicated that the FFS methodology is commonly used and the priorities in Bong County are: rice (upland, but they encourage swamp rice), vegetable crops (cabbage, collard greens, okra, peppers) and cassava as part of the Feed the Future (FtF) strategy. She indicated that both the NGOs and the CEO give seed, fertilizer and tools (shovels, hoes and watering cans) to farmers, plus a wheel barrel to each farmer group; all of these inputs are supplied by the FAO. There are about 1,000 farmers participating in this year's project and they expect to add another 500 farmers in year 2.

She indicated that during the past year the MOA, working with the FAO and Samaritan Purse, gave rice seed and fertilizer to 2,000 farmers (1,000 upland and 1,000 lowland rice farmers). She indicated at the end of the season, they were expected to return an equivalent amount of rice seed to the MOA; however, in one Bong district, only 2 of the 57 farmers actually returned the rice seed. In another district, a group of farmers were given 100 bags of rice seed, but they did not have access to land; therefore, they just ate this rice seed.

Grand Bassa County Agricultural Extension Office - In our visit to the Grand Bassa Agricultural Extension Office in Buchanan we had the opportunity to conduct in-depth discussions with field staff (2 District Agricultural Officers, and 1 Livestock Officer) concerning the programming underway in their county. Unfortunately, we were not able to meet with the CAC of Grand Bassa County. We learned about the training and backgrounds of the 3 Officers, as well as the groups they are working with. A significant challenge is simply the size and dispersed nature of the population in the County as well as the limited ability and capacity of the staff to meet the needs of farmers groups in terms of training, access to inputs, and assistance in business organization development. Each DAO in the County is responsible for two Districts. Both of the DAOs had received Associate Degree (AD) training from Cuttington University and the Livestock Officer holds a B.Sc. from the University of Liberia. Much of their work is oriented around the FFS extension model and both of the DAOs are active in forming and coaching farmers groups as well as providing training to the groups. They reported the key constraints of their farmer groups as being: 1) organizational development issues (handling disputes and conflicts, as well as leadership training within these groups); 2) access to quality seeds and other inputs (seed storage issues, pest management; 3) market access and market linkages, for all crops but especially higher value vegetable crops that are highly perishable; 4) assistance with small-scale mechanization for rice and other crops; and, 5) training in higher value processing activities, as well as training and support for livestock producers (small scale poultry, piggery, etc.).

In terms of facilities at the Grand Bassa County Office, the office at the present time has a small office building, a small demonstration garden, and a storage building for inputs and supplies. A much larger building is under construction for use as a training center for the County. The County Office has access to some additional land where further demonstration plots and activities can be developed.

Issues Concerning the Ministry of Agriculture Extension Facilities and Staff

County Extension Centers - The MOA is in the process of building extension centers in all 15 counties and want to complete this task before considering building small district extension offices. At this point, 2 counties have well-constructed extension centers, including offices for the extension staff, plus a training center, guest quarters, and an active demonstration farm, as seen in Margibi County. It was reported that 5 more counties have some of these needed facilities (e.g., Bong County), but most are just in the process of getting these centers organized and/or built. Apparently, little or no effort is currently underway to establish Extension Centers in the remaining eight counties.

Extension Staff - Well over half of the district extension officers (DEOs) are over 50 years old and many have had little or no technical or method training since they completed their B.Sc. degree or post-secondary diploma from BTW, UL or CU. In addition, the more recently trained "new hires" are the DEOs, who are routinely hired away by the NGOs, given their higher salaries, transportation and other support services. Most of the field extension staff will need substantial training in up-to-date technical, process (extension) and marketing skills, if they are going to function effectively in an increasingly decentralized, farmer led, market driven extension system, which is desperately needed in Liberia. To do so, the (pre-service and in-service) training courses, which will largely be carried out at both the

university and diploma-level agricultural colleges, will need to be up-graded, including technical, marketing and process (extension) skills, so that current and future extension workers will be able to function more effectively in serving farmer groups.

Farmer-led or Farmer-driven - The MOA is using the right words about the public extension system being more "farmer driven." However, the extension leadership at the MOA does not fully understand what this means and how to implement this important concept. The MOA needs to create formal, County Level Extension Advisory or Steering Committees, so farmers start having the opportunity to set extension priorities and to assess the performance of extension workers in meeting these agreed upon goals. These committees should include the leaders of the major farmer/producer groups within each county (at least 30% should be women farmers) and these meetings should occur monthly.

Market-driven Extension - Seldom is "market-driven" extension mentioned by any extension officer or official at the national, county or district level. However, the public extension system must become more market-driven. The good news is that the Cooperative Development Agency (CDA) is now being established within the MOA and the primary objective will be to make market information available for all of the major staple, horticulture, and tree crops, as well as market information on livestock, fish and other agricultural products. However, in order to enable the field extension staff to access and share this information with producers groups, they will need communication devices with which they can access the information.

Identifying and Working with Innovative, Progressive Farmers - One of the best teaching tools that all extension service providers can use to convince other farmers how to diversify and intensify their farming systems is through working with innovative farmers. One of the best methods of identifying these innovative farmers is to carry out a Participatory Rural Appraisal (PRA) in each district, asking people in each village to identify the most progressive and/or innovative farmers in each village or district. Then, after interviewing these innovative and/or progressive farmers, it would then be possible to directly or indirectly share this information, including emerging farm management practices, with other farmers within the district or county. Once farmers are convinced that these new crop, livestock or other farming practices have potential, then they will look to extension to provide these needed skills and training.

Availability of Technical Backstopping for the County and District Extension Officers - Apparently, there have been some linkage problems between the Department of Technical Services (DTS) and the Department of Research, Extension and Rural Development (DRERD). The team was told that most of the SMS in the DTS will be reassigned to County Extension Offices during the coming years, once they have the funding needed to make this transfer. It is estimated that 1/3 of the DTS staff will stay at the MOA and 2/3 of the staff will be reassigned to the county level. This will greatly facilitate the ability of County and District Extension Officers to get immediate feedback on specific technical problems. We recommend that these County and District Extension Officers be given "tablets" that are loaded (and regularly up-dated) with up-to-date technical information on all recommended crop, livestock and fishery practices, which they could then share directly with farmers in the field.

Nongovernmental Organizations in Liberia

Approximately 60 international and local NGOs currently provide extension and advisory services in Liberia. Given the limited time for this scoping mission, we will primarily highlight those larger, international NGOs that met with us and are active in implementing different strategies to increase agricultural productivity and farm income among small-scale farm households (urban and rural). We

were not able to identify and meet with the large number of local NGOs who are working with these international NGOs.

ACDI-VOCA[1] started working in Liberia in 2008 and is now implementing 7 USAID and USDA funded projects. Their first project (LIFE) started by helping about 5,600 cacao farmers get organized and then linked to about 7-8 exporters, thereby building value chains for this export crop. The director indicated that there are now about 10,600 farmers in these 15 producer groups (about 50% are marketing together) and ACDI-VOCA is starting to help these farmers diversify their farming systems into lowland rice and vegetables. The director indicated that it is difficult to move farmers into those high-value crops that are being imported into the supermarkets and hotels; therefore, they are primarily focusing on the locally consumed vegetable crops (okra, cassava, bitter-ball, etc.). He indicated that 95% of these cacao farmers are men.

Another ACDI-VOCA project is Agriculture for Children's Empowerment (ACE), which concentrates on vegetable crops, and focuses on farmers' needs for inputs. He indicated that this project involves about 1,000 farmers, mostly women, and they are trying to develop value-chains to the urban market in Monrovia. ACDI-VOCA is also working with Winrock on a similar oil palm project, which is expected to get farmers organized into producer groups and get them better linked to the exporters. Their new USAID funded, 5 year project is called LAUNCH, which started in June 2010. In total, ACDI-VOCA has about 50 extension staff in the field and they focus on a more market-driven extension system. Given that all of these projects are still being implemented, it is not possible to determine the sustainability of these producer groups once the projects as such end.

Africare-Liberia[2] is involved in both USAID and projects funded by other donors such as IFAD. In Nimba County they are working with farmer groups on vegetable production, fish farming, small ruminants (sheep and goats), as well as rice and cassava. The director said that Africare initially focused on small ruminants, but that they are now working with farmers on rice and cassava. A key issue raised during this discussion is that the fertilizer being sold in Liberia has the wrong composition (i.e., 15% N, P and K) but, due to iron toxicity in Liberian soils, they need more phosphate as well as slow release urea (N) pellets, due to the heavy rainfall during the wet season, which quickly washes the fertilizer out of the soil in the upland areas. He indicated that the average lowland rice yields are about 1.1 ton/hectare and the upland rice yields average about 500-600 kg/ha. He said that farmers want to produce more rice, but they cannot afford to do so, since fertilizer is both expensive and not available in the right composition. Finally, he indicated that Africare currently works with about 15 farmer groups, with a total of about 200 farmers on rice and cassava production (i.e., about 12-15 farmers/group).

BRAC started working in Liberia in 2008 and has quickly scaled up its operations. BRAC is an unusual micro-credit NGO that primarily works with rural and farm women. In addition to providing agricultural advisory, it also focuses on health and nutrition services. Also, it tries to provide inputs throughout the value-chain, including the multiplication of seed and making available livestock to women farmers. Currently, BRAC is working with and providing micro-credit to about 22,000 rural women who are organized into about 1,200 community groups. In 2010 BRAC provided $6.5 million in micro-credit to these women farmers. It was reported that BRAC has a total of 416 employees, most of who are Liberians and who work out of the 30 micro-credit centers. In addition, BRAC now has other workers

[1] Robert (Robin) Wheeler, COP for the ACDI-VOCA LIFE II project, outlined ACDI-VOCA's projects in Liberia.
[2] Chris Seubert, Country Director for Africare, outlined Africare' s different projects in Liberia

who are multiplying seed, as well as others who provide health and nutrition services directly to these participating rural women.

CARE International did not attend this meeting, but we were told that they are pursuing an integrated farming system model in Conservation Agriculture. This approach integrates crop, livestock and fisheries into an organic farming system that reduces input costs (e.g., by using manure and compost). This particular farming system seems to be an effective means of both increasing crop productivity and farm income and should be promoted by other extension service providers, both public and NGOs based.

Catholic Relief Services (CRS) - The previous project implemented by CRS focused on agro-enterprise development in terms of increasing rice production and the milling of rice. While this project has ended, CRS is now working on a new rice project in south-east Liberia, where they hope to increase rice yields among the rural poor. Initially, they had planned to address nutrition and stunted growth problems among the rural youth, but this component was not included in the approved project.

Concern Worldwide[3] (CW) works primarily with funding from European donors as well as the International Fund for Agricultural Development, IFAD. In addition to bridge and infrastructure development (with Irish funding), they are also supporting 6 primary schools. In terms of agriculture, they have established four Farmer Resource Centers (FRCs) as part of the IFAD project where they can supply rice seed and other inputs to about 6,450 farm households. He indicated that they are also trying to multiply seed at these FRCs. One important factor about these FRCs is that they have Steering Committees, with elected members, who provide oversight and direction for these FRCs. It is not clear whether these FRCs will be sustainable once inputs stop coming from IFAD.

In terms of extension, they are using the Farmer Field School (FFS) approach in providing needed advisory services to farmers. He also said that they are currently working with 38 women's groups and have given them rice and cassava milling (post-harvest processing) machines, so they can further increase their household income. They are also helping farmers increase their production of small ruminants and poultry. He indicated that they currently have about 20 field extension staff in the four counties where they are active.

Danish Relief Council (DRC) - The DRC has been operational in Liberia since 1998 and has 5 major units focusing on different areas and counties. For example, they are giving specific attention to south-eastern Liberia, which is the most food deficit area within Liberia. The Director indicated that in each of the areas where they are working, they start with a PRA in identifying the most serious problems and opportunities to increase farm and household income within each region or county. They focus on and organize specific types of farmer and post-harvest handling groups (lowland rice, vegetable growers, fish ponds, livestock, etc.). For example they import improved breeds of sheep and goats from Mali so that farmers have more productive animals to produce, multiple and sell.

The DRC director said that most of their field extension workers (about 60 personnel) are in SE Liberia, where they are primarily working on increasing rice, cassava and vegetable crop production. In addition to advisory services, they also provide farmers in this region with seed vouchers and tools. He indicated that they are currently serving about 60,000 farm households in SE Liberia and they are working directly with 8 local NGOs, which have most of the extension personnel who are providing these

[3] Victor Ngorbu, Livelihoods Program Coordinator for Concern Worldwide, outlined their projects in Liberia

needed advisory services. In addition, they have one nutritionist who is working with 60 communities. Also, they have about 12 extension workers with B.Sc. degrees working in 3 districts in Nimba County, including 4 women extension workers. He indicated that all of these field extension workers receive in-service training in both technical and process (extension) skills before they are assigned to a particular district.

German Agro-Action (GAA) started work in March 2009 and is currently active in urban and peri-urban agriculture in Monrovia, with about 1,500 farmers who are organized into 42 producer groups. GAA provides advisory services on vegetable crops, fruit trees, floriculture, livestock, and aquaculture (fish ponds). In addition, they provide assistance with value-added processing for cassava, as well as assistance with marketing and environmental management. They have created the National Urban Farmer Association (NUFA). Currently, they have 42 "farmer trainers," including 11 women. In addition, they have 9 agricultural specialists (i.e., SMSs with B.Sc. degrees in agriculture) for these different high-value crops/products, plus a project coordinator.

Human Development Foundation (HDF) is currently working with 700 peri-urban farmers and hopes to increase this number to 1,500 by the end of their project. He indicated that land-tenure is a major issue among these peri-urban farmers, since they do not own, only use this land; therefore, they do not have any long-term sustainability in developing these small-scale farms. They have local facilitation teams that help train and supply these peri-urban farmers with vegetable seed and so forth. The number of these extension service providers was not shared.

Samaritan's Purse has been working in Liberia since the end of the war on both USAID and other donor funded projects (WFP; providing food for children going to schools). In terms of their USAID project activities, they are focusing on more integrated farming systems and developing value chains for specific crop and livestock systems (e.g., lowland rice, vegetable crops during the dry season; as well as pigs and poultry, both to increase farm income and to produce manure for compost and for use in fish ponds). He indicated that they were providing farmers with seed and tools in Bong County and are training these farmers in recommended production practices, including pesticide management. He also indicated that this project has a gender focus, with about one-third of the clients being male farmers and two-thirds being women farmers. He indicated that a basic problem in most counties is that farmers now want and expect free inputs; therefore, they need to transform the attitudes of these farmers, so they start thinking about increasing farm income by selling more products in local, county and national markets (e.g., Monrovia) and not just being dependent on free inputs. The director indicated that they have about 12 extension staff in one county (Bong) working on integrated farming systems, as well as 4 staff handing out seeds and tools. In addition, there are 5 staff working on women's empowerment and 6 extension staff working to train farmers on livestock and fishery production.

Note: Action-Aid, International Relief and Development (IRD) and ZOA Liberia (Dutch) did not attend these meetings, so we have no further information about what specific extension related activities they are carrying out in rural Liberia.

Issues concerning the NGO extension service providers - It was reported that there are about 60 NGOs providing extension and advisory services in different counties and districts throughout Liberia. The MEAS team met with about 10 of these international NGOs and most of these larger international NGOs have subcontracts with local NGOs who actually provide the direct advisory services to farmers. The MEAS team is concerned that some NGOs are following an unsustainable and flawed model of handing out free inputs and tools; thereby creating farmer dependence on these NGOs.

On the other hand, there are other NGOs, such as ACDI-VOCA and CARE, which are following similar, but somewhat different strategies in providing advisory services to farmers. In the case of ACDI-VOCA their focus is in organizing and linking farmers to exporters for key tree crops (e.g. cacao and oil palm) and then training them how to use this income in diversifying their farming systems by producing locally consumed high-value products (vegetables, livestock and fish). ACDI-VOCA indicated that they were serving about 10,600 farmers in their LIFE project and an additional 1,000 farmers in ACE project.

Given the high cost of fertilizer in Liberia, CARE International is pursuing a more "organic" farming system (i.e., Conservation Agriculture) and these crop, livestock and fishery products are being produced through integrated farming systems, largely for the urban consumer markets (e.g., vegetables, livestock, and fish products). We were unable to determine how many farmers were currently being served under this Conservation Agriculture project. Both the CARE and ACDI-VOCA approach (as well as the other NGO service providers) involve getting farmers organized into groups. Nonetheless, with the exception of the tree crops, most of these farmers are still actually marketing their products individually. In some communities with road access, wholesale dealers are beginning to come and purchase these products directly from these producer groups. However, these groups do not have much access to market price information in urban markets; therefore, they may not be receiving the full market value for their products.

Although the MEAS team did not have the opportunity to meet with BRAC, their approach has similar goals, but uses a more integrated system of providing micro-credit, inputs and advisory services, primarily to women farmers. Although BRAC has been operational in Liberia for only three years, they have already organized 1,200 community groups involving 22,000 rural women pursuing off-farm value-added activities. Again, in terms of the farming systems being encouraged, they appear to be following a somewhat similar model as CARE and ACDI-VOCA, which is to encourage women farmers to produce improved staple food crops (rice and cassava), as well as vegetable crops, livestock (small ruminants, poultry), and fish. Since BRAC is directly importing fertilizer into Liberia, they are able to sell this fertilizer directly to farmers at a lower cost, with farmers using micro-credit to purchase these inputs.

There are now over 400 BRAC workers in Liberia, however, the number of advisory service providers has yet to be determined, but probably somewhere between 30 and 60 agricultural extension workers, since there were 30 micro-credit offices established by the end of 2010. At the end of 2009 there were only 15 micro credit offices and the number of micro-credit offices is expected to continue expanding during the coming years.

A common practice of all NGOs, with the notable exception of BRAC, is that they offer at least 50-100% higher salaries to their "project" extension staff, as well as to provide them with means of transportation (i.e., motorcycles and fuel) and funding to support their extension program expenses. Therefore, these NGOs are generally able to hire the most qualified and competent field staff, frequently recruiting some of the most competent public extension workers. However, these positions generally last for only 2-3 years and then they have to pursue other assignments, generally with other NGOs. A key issue is the overall cost of funding NGOs to provide these extension and advisory services to all groups of farmers, as well as the sustainability of these NGO advisory systems.

Private Sector

The private sector in Liberia remains very underdeveloped and is in a recovery mode after the post-war situation. The private sector provision of extension and advisory services has the benefit of an element of sustainability as long as the underlying business model remains profitable. On the other

hand, private sector provision of extension and advisory services has been characterized by some conflicts of interest or asymmetric information on the part of service providers given their links to the sale of inputs or the desire for furthered contacts with clients. Private sector provision of extension and advisory services comes in several main forms. First, input suppliers often link technical information and advice with their marketing efforts. Second, in some situations where farmer associations become large and economically powerful, the associations themselves hire or contract for extension services and technical advice. A third common method is outgrower schemes (e.g., a core farm or processing company that provides services and/or inputs to outgrower farms), where the core business includes a processing facility (palm oil mill, cocoa marketing center, or rubber or coffee buying station) and then work with the growers to provide inputs on a contract basis, which is then paid off at the time these commodities are sold to the business.

In many countries, the sale of inputs provides a mechanism and business platform for the provision of technical advice, particularly in the areas of soil fertility and fertilizer and in pest management and pesticide application. While several private sector entities sell and distribute inputs, at the present time the development of these entities is at a nascent stage and the farmer's groups we spoke with primarily relied upon NGOs and the MOA extension officers for the provision of free inputs. Most private sector suppliers of agricultural inputs are based in Monrovia and do not have extensive presences in the rural Counties, perhaps because most of their business up to this point has come directly from NGOs who are purchasing inputs on behalf of farmers and not feeling the pressure to market directly to producers. Overall demand for improved inputs appears to be small, though we observed backpack sprayers and the utilization of chemical pesticides in market vegetable production with producer groups in Bong County. Even for model local farmers, the utilization of fertilizer is quite limited in lowland rice. The future potential for more private provision of extension and advisory services exists as value chains develop and as indigenous farmers become more commercial in their orientation.

Tree crops in Liberia offer a critical means for providing inputs, technical advice and more comprehensive extension services to some small-holder farmers. Tree crops occupy an economically significant role in the macro-economy with rubber exports traditionally contributing a major share of the country's exports. Presently large private firms, marketing agents, and small-holder producers are focusing significant attention and investment in the cocoa, coffee, rubber and palm oil sectors. Each of these offer potential platforms for the provision of seedlings, cuttings or other nursery materials, other inputs, especially fertilizer, along with technical advice on fertilizer application. Also, the development and organization of farmer's groups in the tree crop sector is critical so that farmers have an independent channel for filtering advice and marketing opportunities and contracts.

We met with Peter Bayliss, Managing Director, of Equatorial Palm in order to gain additional information from the perspective of a palm oil company with operations in Grand Bassa and Sinoe Counties. Mr. Bayliss provided an overview of the company and its current stage of development in Liberia and we discussed the company and its links to small-holders and its needs and capabilities in working with outgrowers and small-holders. Mr. Bayliss pointed out that in working with outgrowers there is an issue of how exactly to finance and organize the development of their tree stands, as well as any other services (advice, fertilizer, and equipment) required by the small-holder growers. It is in the company's interest to work with larger and more capable growers since they represent a lower cost in providing advisory services. Nonetheless, the country needs employment for many rural people as well as for as yet unsettled ex-combatants. Mr. Bayliss reported that operations such as Equatorial Palm need to partner with NGOs and with governmental institutions in order to finance small-holder operations and to assist in workforce development (trained mechanics, carpenters, plumbers, black smiths, etc.). Mr. Bayliss mentioned that it would help companies, such as Equatorial Palm, if the MOA

could actively provide extension services to small-holder growers and to monitor and regulate their activities.

Universities and Schools of Agriculture

University of Liberia, College of Agriculture - The team met with the Deans of two Colleges at the UL, as well as all Department Heads (General Agriculture, Agronomy, Livestock, Forestry, Home Science) and several faculty members including three faculty members from the Agricultural Extension Division. Currently, B.Sc. students cannot earn a degree in Agricultural Extension, but most general agriculture students take one or more courses in agricultural extension. The UL emphasized that before the war, the UL had an Agricultural Extension Training Center (AETC) that was used for both pre-service and in-service training of the extension field staff. In addition to classroom training, they have a large amount of land that can be used for practical, hands-on training in improved technical and management practices. Unfortunately, during the war, the building was ransacked and has not been restored. The physical structure is still there, but will need to install a new roof and to refurbish the building, plus other needed equipment, including desks, chairs and teaching equipment. However, given that most current and new extension field staff need additional training, the UL is ready to reestablish this AETC and to begin training current and new agricultural extension workers.

Cuttington University (Liberia's largest private university) has two departments; International Development Studies (IDS) and Agriculture. The IDS department primarily focuses on organizing community groups and they are promoting the networking of NGOs. In short, they want to get all of the NGOs working together, rather than independently. The agriculture department has access to 12 hectares of land, including 8 ha of lowland, for teaching students how to produce lowland rice and vegetable crops. The extension course at Cuttington focused on extension methods, especially in learning from progressive farmers. The Dean indicated that there are about 240 agriculture students at Cuttington, including about 20% female students. He indicated that students learn both technical and social skills, so they can take jobs with the NGOs or can start teaching at the local high schools. He said, however, that few of these graduates are actually hired at these schools; most are just "volunteer" teachers. The Dean also said that they are thinking about starting a course on entrepreneurship, as well as a "service learning program," which will be a refresher course on how to work with farmers. He said they also have an outreach program (1 agent) that is reaching out to the 12 districts in Bong County. Also, they have a radio program that can reach up to 75 miles, and they have programs on agriculture, health and small business or enterprise development. Also, they offer a 14 week short course for farmers. USAID currently has a higher education strengthening project which should offer opportunities for MEAS/CU collaboration.

Booker T. Washington's (BTW) Vocational Education Institute - We were not able to visit BTW Vocational Education Institute.

Songhai Agro-Enterprise Training Center - The Songhai AETC was rehabilitated two years ago and started its first agro-enterprise training course (an 18 month course) in mid-2010, with 150 students (10 students were selected from each of the 15 counties). The 23 teachers (and assistants) were given sufficient training at the Songhai Center in Benin about how to establish and carry out agro-enterprises in crops (especially horticultural crops), livestock (pigs, chickens), fish farming and agro-processing units. About 25% of the training is done in the classroom (formal instruction) and 75% of the training is hands-on, practical training about how to produce, process and market these different crop, livestock and fish products, including training on value-added processing procedures. In this first group, 74% of the students are young men and 26% are young women. Some are high school graduates, but many are not.

The goal is to train young entrepreneurs who can work together in developing and managing value chains that can better link farmers to markets, especially for more high-value products. Overall, this is a very impressive AETC that should be supported. The director indicated that some of their current problems included: 1) rehabilitating their student dormitories, 2) helping feed the students and 3) getting the graduates linked to micro-credit granting institutions.

Central Agricultural Research Institute (CARI)

The team's visit to CARI was relatively quick, so we have limited information. Essentially, they indicated that there are 7 programs, including 1) rice research; 2) post-harvest handling and value addition; 3) livestock production; 4) tree crops (rubber, oil palm, cacao, coffee, etc.); 5) seed multiplication (especially rice seed); 6) natural resource management and 7) tissue culture. The director indicated that their research staff included four with Ph.D.s (however, two are in CARI administration and not doing research); three M.Sc. degree holders and 16 research staff with B.Sc. degrees. Thus there are a total of 23 professional research staff at CARI. In addition, there are 15 staff members with associate degrees/diplomas and the rest of the 200 CARI staff members have only secondary school diplomas (48% female and 52% males).

The director said that given the devastation of CARI during the war, their primary focus at the present time is on seed multiplication (i.e., breeder seed, so that selected progressive farmers can produce certified seed for distribution). In addition, they are working on processing cassava into flour and other value-added products. He said that as part of their value-added component, they go out and train women farmers how to process cassava into flour. It should be noted that CARI actually has 1,800 acres of farm land to conduct their research trials and for seed multiplication. The director also indicated that the People's Republic of China (PRC) has built a large research facility at CARI and that their research scientists will be arriving shortly to work with the CARI staff on key technology issues.

Other Key Issues Affecting Farmers and the Provision of Extension and Advisory Services:

Lowland rice - To successfully produce lowland or swamp rice, mechanization is a key factor, since it takes considerable labor to develop these rice paddies, including constructing the "bunds" to contain and control water during both the wet and dry season. Unfortunately, there are very few tillers available in rural Liberia, so the lack of this equipment is a key factor why lowland rice production has not increased at a more rapid rate (as recommended by the Ministry).

Labor - Given that many Liberians prefer to live and work in Monrovia or other urban areas, the lack of labor for more intensified farming systems is a serious and growing constraint, especially for labor intensive crops, such as lowland rice. Therefore, the types of farming systems being recommended by both the NGOs and the public extension system needs to give careful consideration as to labor availability in the different target counties and districts.

Land tenure in both urban and rural areas remains a serious problem. Most farmers, unless they actually own their land (which very few do), are unwilling to allocate additional labor and/or resources to further develop these farms, especially among peri-urban farmers. The problem is clear; once they start improving these farms, it is more likely that they will be asked to leave these farms. Therefore, there is little long-term incentive, for example, to develop lowland rice paddies or to build livestock facilities on the land they are currently using.

Fertilizer composition and cost - Given the fertility needs of farms in most of Liberia, the composition of fertilizer being imported (15-15-15) is not exactly what is needed by farmers growing rice and vegetable crops. In addition, prices at the beginning of the growing season are generally high ($75-85 for 50kg). However, during the off season, it was reported that fertilizer costs are somewhat less. In addition, it was reported that BRAC imports fertilizer directly for its participating farmers (about 22,000); and its fertilizer is sold for $65 per50kg. Although we did not have the opportunity to speak directly with CARE about their Conservation Agriculture approach, this appears to be a more effective farming system that makes effective use of the limited labor and other resources throughout the year (especially fertilizer) and that is also more "market-driven," given the emerging types of crop, livestock and fish products increasingly being produced and sold. A key issue, however, is access to market for these products, especially for those farmers who have very limited access to paved roads during the rainy season.

Research and Extension Linkages - At the present time, the links between the research function of the MOA and the extension agents and program of the MOA appear very limited. This results from the rebuilding mode that CARI finds itself in, as well as CARI's current emphasis on rice seed multiplication and other pressing needs and funded research projects. Funds to facilitate the connections between the research efforts of the MOA and the extension program (i.e., funds for travel, communications, and staff in the translation mode) are not readily available. Overtime, however, these links between the agricultural research of CARI and the extension program of the MOA deserve reconstitution and attention. Additionally, other applied research (perhaps ongoing at CU or UL) needs to be connected with extension efforts, and NGO and private sector extension efforts also might benefit from access to these efforts. Lastly, Liberian extension personnel would benefit from easier access to existing technologies and research developed within the West African region, whether it concerns rice production, tree crops, horticulture, livestock, or another dimension of agriculture. Much of this research exists in the form of reports (some are available on the internet) or is embodied in the expertise of regional scientists employed by CGIAR-affiliated centers (IITA, ARF) or other agricultural agencies (e.g., IFAD and FAO). Access to communications technology would improve the dissemination of some of this research, as would events such as agricultural conferences, training workshops, and fairs. Moreover, specific attention to the effort of translating existing research and transforming it into useable extension programs, messages, and information is needed to strengthen the links between extension efforts in Liberia (both public and NGO) and the research base.

Research Needs of Extension Programming - The extension programs of both the MOA and the NGOs in Liberia would benefit from additional research attention targeted to the needs of the small-holder farmers they serve. Feedback and input from farmer's groups and from extension personnel could be utilized to identify specific research topics that could be studied by CARI or university-researchers (perhaps on a short-term contract basis) and that would yield answers to agricultural research questions faced by Liberian producers. An alternative approach would be for coaching of agricultural extension staff to conduct research in partnership with farmer's groups in the field using farmer's groups to identify the research question of interest and to conduct the research. This approach is especially useful for applied research questions in the area of soil fertility, seed selection and management, varietal selection, and many other agricultural production questions. It has the additional merit of capacity building of the farmer's groups and in-field validation that farmers respect. A third research dimension identified by the team as a need for Liberian extension efforts is applied research concerning extension structures, management and implementation methods, and education approaches. Active and reflective practitioner-oriented research could strengthen the evidence-base behind extension efforts in the country and assist to raise the level of practice by establishing agreed

upon best practices in the Liberian context as well helping extension program leaders understand extension system performance through measurement.

Extension Support Services - Services to support extension programming within the MOA, and for that matter with NGO or other private sector organizations, are currently extremely limited in Liberia. There is a need for dedicated staff to be able to provide technical backstopping as well as other support functions (including assistance on program development and implementation, technology, and training) within the MOA. Additionally, for the NGO programs we observed, it was not clear how the support for extension functions would continue to farmer groups after the specific project ended.

Training (both pre-service and in-service) - While many of the MOA extension staff we spoke with reported having participated in short-term training events and workshops over the past several years, a number of both pre-service and in-service training needs were apparent from our discussions. First, there is a need to strengthen pre-service training in Liberia at the four-year institutions that train most of the public and private (NGO) sector agricultural extension staff. This involves evaluating and assessing the curriculums and courses in the general area of agricultural extension and development being offered, identifying gaps, and taking specific steps to address the gaps and related capacity issues. Some of the strengthening needed might involve introducing a greater market orientation and field experience and extension service orientation into the training programs. At the level of in-service training, a comprehensive staff development program should be implemented that identifies gaps in staff capacities (ICT, agricultural technologies, extension methods, environmental and water management, etc.) and develop a means of addressing these gaps, as opposed to the current "ad-hoc" approach of sending staff to available training opportunities that are not part of a coherent capacity development program. Some extension staff may benefit from a longer term investment so that they obtain additional formal education leading to a four-year degree.

Internet and Communications Technology, Communications Support, and Mass Media - The internet as well as other communications technologies (including traditional forms such as radio) have a lot to offer in terms of supporting, extending, and complementing extension programming efforts in Liberia. Already, innovative and entrepreneurial extension staff (for example, the CAC in Margibi County) and others (Cuttington University) utilize the radio to broadcast extension messages and concepts. While Liberia lags behind countries such as Ghana and Rwanda in terms of internet access, the FAO project has provided internet access (through cell connections) to most if not all the County Agriculture offices and the internet will increasingly become an important means of communication within the country, particularly as high-speed internet access is made available through a connection to the off-shore cable. Additionally, other technologies including mp3 players with pre-recorded extension messages, computer tablets with stored extension materials for use by extension agents, and printed products can usefully play a role in strengthening extension efforts. In the Liberian environment, many gains and improvements might be realized by simply utilizing more effectively the existing resources available from regional institutions and partner institutions (such as IITA and ARF) and making these available in adapted forms to local extension staff. At the present time, the MOA does not have the capacity in terms of staff time or trained staff to facilitate the development and utilization of internet-based, as well as other platform (radio, sound files, and electronic files on tablets) programming tools and products. Developing this capacity within the country might lead to significant gains since the information products are public goods and can be easily disseminated and shared across people, communities, and organizations.

Monitoring and Evaluation - At the present time the M & E efforts in public and NGO extension system we were able to learn about and observe mostly emphasize the documentation of groups

reached and number of farmers impacted or number of implements distributed. This level of monitoring and reporting is necessary. The specific systems employed for monitoring extension activities deserve a review so that measurement is aimed at producing the outputs of most interest and that will most likely lead to livelihood improvements of small-holder farmers in Liberia. Additionally, MOA staff requested assistance and guidance on establishing reporting frameworks and extension system performance benchmarks. It appears to be the case that levels of performance vary widely within the MOA extension system and that substantial impact gains might be achieved through improvement monitoring and reporting systems. With respect to rigorous evaluation of extension efforts in Liberia, we did not learn about or observe any such evaluations. An opportunity exists for training, coaching and mentoring on evaluation of extension methods and programs in Liberia that would result in further learning and focus on extension program delivery and impact. As investments are made in pluralistic Liberian extension system, the unique opportunities for the application of experimental and randomization approaches to help evaluate and learn from the extension investments would both increase extension system leadership capacity as well as generate further knowledge about effective extension delivery approaches.

Moving to a Market-Oriented, Demand-Driven, and Responsive Pluralistic Extension System

We have proposed (listed in the summary section above) a set of actions that, if taken, would move the pluralistic extension system towards a more market-oriented extension system, where farmers can directly influence the nature of programming they receive and, therefore, shape the system into a more farmer-driven and demand driven system. These steps would also have the effect of creating a more responsive system to small-holder farmer needs and, over time, lead to a greater likelihood of financial sustainability for the extension system.

In the medium term, say over the next five years, in Liberia, it is likely that agricultural productivity gains and small-holder livelihood improvements can be increased through targeted investments in MOA's capacity to design, manage, implement, monitor and evaluate, and coordinate extension activities. Additionally, improvements in human capacity as well as in coordination across NGO-delivered extension programs would lead to additional agricultural productivity and livelihood improvements for small-holder farmers. Demonstration programs and the implementation of teaching approaches not currently utilized very much in Liberia (e.g., PRA to identify innovative farmers and then mobilization of these farmers as peer educators) would lead to further gains for farmers.

In general, in the current situation we regard it as unlikely to be able to mobilize much cost-recovery for extension services from Liberian farmer groups and that the investments in extension should be focused on investments in system capacity, human capacity, and development and implementation of best-practice extension methods in Liberia. A primary goal of investments into extension at this time is to move the system from one where a primary mode of programming remains a focus upon input distribution and implement handouts to one where farmer groups are mobilized and demanding extension services which meet their needs and which serve to connect them with market opportunities.

ANNEX A ORGANIZATIONS AND KEY PEOPLE CONSULTED WITH DURING THIS SCOPING MISSION

1. Dr. Florence A. Chenoweth, Minister of Agriculture

2. A. Richelieue Mitchell, Sr. (Deputy Minister, Regional Development, Research and Extension), MOA

3. Dr. Sizi Z. Subah (Deputy Minister/Technical Services), MOA

4. Ara Y. Voker Chea (Principal Director of Administration), MOA

5. Paul Jallah (Assistant Minister, Regional Development, Research and Extension), MOA

6. Edward Perry (Senior Extension Officer/DRDRE), MOA

7. Dr. Moses Zinnah, (Director, Program Management Unit), MOA

8. Sean T. Gallagher, (Country Representative), Catholic Relief Services

9. Dr. Kamal Bhattacharyya (Livelihoods Coordinator), Catholic Relief Services

10. Dr. Vickie Sigman, USAID/Liberia

11. Dr. Michael Boyd (Senior Economic Growth Officer), USAID/Liberia

12. Danish Refugee Council, James F. Youquoi (Senior Regional Programme Officer), and Klara Haugen-Kossman (Jun. Coordinator)

13. ACDI-VOCA, Robin Wheeler (COP, LIFE Project)

14. Mulba Bryant (County Agriculture Coordinator), Monserrado County, MOA and other Monserrado County MOA extension staff

15. Concern Worldwide, Victor Ngorbu (Livelihoods Programme Coordinator)

16. Africare, Chris Seubert (Country Representative)

17. Seklau Elizabeth Wiles (National Livestock Programme Coordinator), MOA

18. Chea B. Garley, Sr. (Assistant Minister for Technical Services), MOA

19. University of Liberia, Dr. Roland C.Y. Massaquoi (Dean, College of Agriculture & Forestry), Dr. Wollor Emmanuel Topor (Dean, T.J.R. Faulkner College of Science & Technology), and other 10 other senior faculty

20. Cuttington University, Rev. Momoh Foh, J.P. (Dean, College of Agriculture & Integrated Development Studies), and Dr. Charles K. Mulbah (VP for Research & Development)

21. James M. Belcher (Director), Konblo Bumi, Inc.

22. Peter Bayliss (Managing Director), Equatorial Palm Oil

23. Central Agricultural Research Institute, Dr. Kai (Acting Director General), Joel Williams, Abibatu Kromah, and four other senior research staff

24. MOA Extension staff in Grand Bassa County, Preston Marshall (DAO), Rufus Johnny (DAO), and Abraham Kamara (Livestock Officer)

25. Winston E. Nkhoma (Program Manager), Samaritan's Purse

26. Mr. Cooper (CAC), Margibi County Extension Office, MOA and other extension staff

27. Farmer group representatives from United Farmer Association, Progressive Farmer Organization, and the Women in Peace Building Network, all in Margibi County.

28. Augustine F. Moore, independent farmer operating an integrated rice/piggery/fish pond/vegetable/cassava farm in Margibi County.

29. Tonlo Women & Youth Association, Gbarnga, Bong County, Annie Y. Woheel (Director)

30. Monica Kishin Honori (CAC), Bong County Extension Office, MOA, Samuel Colley (DAO), Watson (DAO), and Slocum (DAO)

31. Gbarnga Hospital Agriculture Cooperative members

32. Songhai Center, Monserrado County, Christopher Fayiah (Coordinator) and other staff

ANNEX B TERMS OF REFERENCE AND SCOPE OF WORK

Carry-out a diagnostic of the extension system in Liberia and to recommend specific options for the future. Results would be used to inform further USAID activity, and potentially other donor activity in the agriculture extension and advisory services sub-sector.

The SOW includes:

(a) review existing studies that have informed the current extension strategy,
(b) review the current extension strategy and plans for extension activity,
(c) articulate alternative systems that build on the work that has been done in the sub-sector and on best practices, particularly with regard to stakeholder roles, extension innovation, delivery including private sector engagement, inclusiveness and responsiveness to an array of clients, adaptive research, continuous availability of improved practices/technologies for extension dissemination, and system sustainability to name a few.

The objective is to utilize the scoping mission and, based on the outcomes, determine a way forward. There are already various ongoing activities and plans for strengthening extension in Liberia. One of the tangible outcomes expected from this mission is for the team to write a document that can be distributed to stakeholders, and donors, to see if all can agree on a "model". We are looking for alternative models. We are interested in a review of USAID's private sector extension ideas and MOA's existing/proposed public sector extension system.

Annex C Documents Reviewed

1. *Decentralization Issues and Strategy Process for Decentralizing the Ministry of Agriculture*, prepared by Tetra Tech ARD, for review by the United States Agency for International Development. October 2009.

2. *Assessment of the Central Agricultural Research Institute (Final Report)*, prepared by ARD, Inc., for review by the United States Agency for International Development. July 2008.

3. *Assessment of the Department of Technical Services, prepared by ARD*, Inc., for review by the Ministry of Agriculture and the United States Agency for International Development. August 2008.

4. *Final Assessment of the MOA*, prepared by ARD, Inc., for review by the Ministry of Agriculture and the United States Agency for International Development. January 2009.

5. *Liberia Agricultural Sector Investment Program (LASIP) Report* prepared by the Government of Liberia, for partial fulfillment of the Requirements for the CAADP Compact, September 20, 2010.

6. *Food and Agriculture Policy and Strategy: From Subsistence to Sufficiency*, prepared by the Ministry of Agriculture, Government of Liberia, July 2008.

7. *Developing a Demand Driven, Farmer-Based Extension System in Liberia*, a project profile submitted by the Government of Liberia in technical partnership with IITA to multiple development investors, February 2008.

8. *Liberia: Statement of Policy Intent for Agriculture*, prepared by the Ministry of Agriculture, Republic of Liberia, July 2006.

9. *New Policy for Agricultural Advisory Services in Liberia*, prepared by the Ministry of Agriculture, Republic of Liberia, March 30, 2009 (2nd Draft).

10. *Summary Report of Liberian Delegation's Participation in the 3rd Symposium and General Assembly of the Africa Forum for Agricultural Advisory Services (AFAAS) Held in Accra, Ghana from April 12-14, 2011*, by Moses M. Zinnah and Edward Perry, MOA