

BDS CONSULTANCY REPORT

COWPEA SUBSECTOR APPROACH

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Prepared by Mary Morgan

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ACRONYMS

AEDU	Agricultural and Economic Development Unit
AEDO	Agriculture Economic Development Officer
AGHRA	Action for Greater Harvest
BPID	Best Practice and Innovation Demonstration
BDS	Business Development Services
CPBD	Community Peace Building and Development Program
FAO	Food and Agriculture Organization of the United Nations
G-BAG	Grand Bassa Agriculture Group
IDP	Internally Displaced People
IPM	Integrated Pest Management
INGO	International Non Government Organization
LNGO	Local Non Government Organization
LOP	Length of Project
MC	Mercy Corps
MOA	Ministry of Agriculture
MSE	Micro and Small Enterprise
PNO	Project New Outlook
SOW	Scope of Work

1. EXECUTIVE SUMMARY

The Community Peace Building and Development Program (CPBD) is a five year program designed to promote a greater role for civil society in the transition to improved social, economic and political conditions. The economic development component of CPBD aims to assist communities to revitalize their livelihoods by supporting subsistence farmers to increase their yields and transition into commercial agriculture by growing cash crops and moving into agro-processing.

This consultancy was to build capacity with two of the Local NGO Partners in how to use BDS tools and the market development approach in their work while assisting them to conduct a market assessment of potential cash crops. Training and conducting a subsector/value chain analysis occurred over the four week period of this consultancy.

Business development addresses constraints that impede or prohibit business growth. Micro and small enterprises (MSEs), which include smallholder farmers, face many constraints. Some of the constraints many MSEs face are access to quality affordable inputs and technology, as well as market information that would improve market access. Smallholder farmers do not operate in a vacuum; they operate within market systems which may be local, regional or even international. A subsector/value chain approach makes it possible to reach many smallholder farmers due to its focus on forward and backward linkages which then impacts on business activities all along a value chain.

Training was held for 4 days (April 27-30 2005) to introduce the subsector/value chain analysis. The 28 participants in the training comprised of staff from three local NGOs and Mercy Corps and one technician from the Ministry of Agriculture. During the training the cowpea and processed cassava subsectors were chosen to study.

From the training, 12 participants from 2 local NGOs and the technician from the Ministry of Agriculture were selected to analyze the chosen subsectors. Focus groups were held in the field with farmers, transporters, marketers and traders. The constraints found were untimely access to seeds, lack of affordable quality tools, lack of storage, lack of processing equipment, pest infestations, expensive and inadequate transportation and lack of market access.

Potential Business Development Service (BDS) Providers who could provide solutions to the constraints were identified. Buyers, seed suppliers, transport companies, processing equipment suppliers and tool suppliers were then interviewed in Monrovia.

The research found that there was a market for cowpeas and processed cassava products. As there were no suppliers of cassava processing equipment in Monrovia, it was decided to focus solely on the dried cowpea value chain. Suppliers of tools and seeds were also found. Eco-friendly pest control solutions were found through virtual networks.

Verification workshops were conducted in the communities where farmers were interviewed. The constraints and the solutions to the constraints were presented to the farmers. This was done with drawings to animate discussion.

Doing socio-economic development with vulnerable populations requires knowledge on the market economy and also knowledge on how to motivate, animate and build capacity. The Local NGO Partners require capacity built in these areas if they are going to assist the farmers in cowpea production and facilitate links to markets for inputs and outputs.

2. INTRODUCTION

The history of Liberia is complex. For the past 25 years there has been a period of intense sustained political, economic and social disruption. This has resulted in destroyed infrastructure, social and political instability and a disruption in economic activities. This is the context in which the Mercy Corps Community Peace Building and Development Program (CPBD), which is known as Diompilor, has developed. CPBD is a five year - \$12 million program jointly implemented by Mercy Corps (MC) and the Academy for Educational Development. The program is designed to promote a greater role for civil society in the transition to improved social, economic and political conditions by working with ten civic organizations and 200 communities. The Peace Accord signed in 2003 has provided a window of opportunity to move towards the goal.

The economic development component of CPBD aims to assist communities to revitalize their livelihoods by supporting subsistence farmers to increase their yields and transition into commercial agriculture by growing cash crops and moving into agro-processing. In FY3's Annual Work Plan one of the activities of the Agriculture and Economic Development Unit (AEDU) is to provide training and on-going coaching to local core agriculture and economic development NGO Partners in Business Development Services (BDS). The provision of training and on-going coaching requires capacity building.

This document is one of the outputs of a four week consultancy to build the capacity of three local NGO (LNGO) Partners in agriculture and economic development in how to use BDS tools and the market development approach in their work. A subsector/value chain analysis was conducted to identify the constraints that subsistence farmers face to successfully produce, process and market their crops. A market assessment identified commercial, affordable services farmers can access to address these constraints.

Activities completed during the consultancy

- Prepared and delivered a 4 day training on BDS market development and facilitation to twenty eight Mercy Corps staff and LNGO Partners. During this training two subsectors were selected to study: cowpeas and processed cassava products.
- Spent 3 weeks with 12 participants from two LNGO Partners and a Ministry of Agriculture (MOA) Technician conducting a subsector/value chain analysis, identifying solutions and identifying commercial BDS providers.
- Developed a strategy to implement commercially viable solutions that address the constraints faced by farmers in participating in higher value markets for cowpeas.
- Facilitated a workshop for the LNGO Partner participants and MOA technician in how to provide supports to farmers to be active players in the development of the cowpea subsector.

Please see Annex 1 for the timeline in how the activities were executed.

Scope & Limitations

Doing socio-economic development with vulnerable populations requires knowledge on the market economy and also knowledge on how to motivate, animate and build capacity. This requires not only financial resources to bring in experts, but also the resource of time and the commitment to go through a learning process. Mercy Corps provided the logistical support to ensure that the research team had what they needed in order to conduct the assessment.

The training provided an excellent opportunity to give an overview of how to use the subsector and value chain analysis framework to identify constraints and commercial solutions to get around the constraints. The real strength of this consultancy was actually working with a team of 12 Liberians to conduct the subsector/value chain analysis. The Liberians interviewed the subsector actors and got a real taste of how a sector operates. They could see how players relate to each other, had the opportunity to analyze data and present the findings back to the communities. They experienced being BDS facilitators, not just hearing about it in a classroom.

The timing of the consultancy was also a strength. The previous work of the Reflect animators and the Community Development Committees set the stage for an atmosphere of dialogue and willingness in the communities to share information, organize and be open to moving forward.

Doing an assessment requires access to data, statistics and meeting with people. The long drawn out conflict has shattered the infrastructure of Liberia. Setting an appointment is a Herculean task when there are no telephone land lines and no receptionists to set up appointments or to respond to simple inquiries. So one has to go to the location where you want to have an appointment and set a time with the appropriate person to then return later. Rural or urban communities are affected equally with this disruption in the communications systems. This made it extremely difficult to identify and speak with key industry contacts.

There was no formal or official statistics on the pre-war or post war production of processed cassava or cowpeas. Thus it was impossible to analyze trends in either sector and gather statistical information on the following items which was asked for in the Scope of Work:

- No. of micro and small enterprises working in the industry (including farmers)
- Profiles of potential/existing providers operating in the industry and gaps
- Market potential and demand trends
- Market size in terms of local, domestic and regional markets
- Competition
- Market access (i.e. ability of local enterprises to enter this market)
- Regulations and standards
- Distribution practices ¹

With no data on industry trends available, the starting point of for the assessment depended solely on the existing knowledge and experience of Mercy Corps and their local NGO (LNGO) Partner staff. The subsector analysis was essentially based on the data collected during 4 days of interviews. This limited data affected the depth of analysis.

The market development approach requires a basic level of market literacy. This approach was new for the LNGO Partner and MC staff. Their lack of previous exposure to the approach made it challenging to do a subsector/value chain analysis and market assessment while actually conducting the aforementioned activities. That being said, the learning was tremendous and there was lots of excitement about the new approach which can provide many opportunities for the farmers with whom they were working.

¹ In the SOW one of the deliverables included an assessment report to include these items. Because of the lack of statistics, they are not part of the report.

3. OVERVIEW OF THE SUBSECTOR AND VALUE CHAIN APPROACH

Smallholder farmers do not operate in a vacuum; they operate within market systems which may be local, regional or even international. A subsector/value chain approach makes it possible to reach many smallholder farmers due to its focus on forward and backward linkages which then impacts on business activities all along a value chain.

A subsector analysis reveals the links between input suppliers, producers, retailers and markets. It also identifies constraints all along the chain to competing in the marketplace, clarifies the relationships in the chain between the different actors and illustrates the distributions of benefits along the chain.

A subsector can be defined as follows:

- All the firms that buy & sell from each other in order to supply a particular product/service to final consumers
- The range of activities that brings a product from raw material to the final consumer: input supplies → production → processing → wholesaling → retailing → exporting
- The different market channels to reach the distinct consumer groups

Value chains exist within a subsector. A value chain maps the transformation of a product along only ONE market channel. There are usually several value chains within a subsector. MSEs and smallholder farmers often operate in a market channel which targets other poor consumers as their market. This may be because their product is of poor quality, or they do not have access to transportation and other market outlets, or they do not have access to technology to add value to their product.

Conducting a subsector analysis identifies the different market channels that a product moves through to reach the final consumer. The distinct consumer groups are often differentiated by a product's different stages of upgrading. As more value is added to the product, the product will meet the specific desires and needs of a higher value market. Analyzing the entire subsector reveals the different value chains. This provides the opportunity to analyze not only the competitiveness of each value chain within a subsector, but also identify which value chain would provide the best market opportunity for a large number of poor people.

The value chain analysis reveals constraints and opportunities for economic development. Market solutions are identified and then a market assessment reveals the existing business solution providers. For instance, if a constraint to production in a value chain within a subsector is lack of processing equipment to add value to a product; one solution would be to make affordable quality equipment accessible to the poor. The providers of this service, which would be processing equipment suppliers or manufacturers, would then be identified. An intervention would then be to link farmers to the suppliers of the technology, who are BDS providers. The market transaction is what drives the relationship. The role of the BDS facilitator is to identify the constraints, the solutions, the solution providers and develop an intervention which facilitates the development of the market.

4. THE PROCESS FOLLOWED TO IDENTIFY THE SUBSECTOR

Training was held for 4 days (April 27-30 2005) to introduce the subsector/value chain analysis as a framework to identify the constraints that hold thousands of smallholder

farmers back from participating in the marketplace. The training also introduced the market development approach in BDS.

The BDS market development approach has 4 guiding principles:

- To achieve high impact
- To be focused in the delivery of interventions
- To be market driven
- To be sustainable.

To develop a successful BDS program that achieves the aforementioned principles, the following steps were followed during this consultancy:

1. Develop an impact goal.
2. Conduct an environmental analysis
3. Choose a subsector & value chain
4. Develop a preliminary subsector/value chain map
5. Conduct a subsector/value chain analysis to identify the constraints.
6. Identify potential commercial responses to constraints in the value chain.
7. Identify interventions to facilitate the development of the value chain.

During the training, Steps 1 through 4 were accomplished. At the end of the training a team of 12 was selected from the 28 training participants to continue with conducting the assessment and completing Steps 5 through 8.

The Mercy Corps Program Officer, Jonathon Boiboi and the Social and Economic Development Manager, Emmanuel Minari, chose the assessment team based on the strength of the partners. The LNGOs which participated in the research team for the subsector/value chain analysis were Action for Greater Harvest (AGHRA) with 8 participants, Project New Outlook (PNO) with three participants and one technician from the Ministry of Agriculture. The names of participants of the 4 day workshop and the assessment teams can be found in Annex 2.

Impact Strategy

The CBPD Economic Component Goal became the impact goal:

To work with local partner organizations to effectively increase food security (both food and income) by improving and diversifying food production and other livelihood means for 100 vulnerable communities.

Environmental Analysis

Statistics were studied from the CIA Liberia Country Profile that covered off specific areas concerning demographics, the economy, communications and infrastructure. The following analysis of the socio-economic and political environment emerged:

- High incidence and prevalence of HIV/AIDS have not been detected to date. This is partially due to the fact that data has not been collected. It is something to be aware of in the development of an intervention, especially regarding labor intensive practices.
- Literacy rates are low with women. If the program is going to attempt to include women in large numbers (not as an after thought but from the inception of the project) radio and diagrams on printed material will be needed to disseminate information regarding market opportunities and technical assistance to improve horticulture practices.
- To reach the majority of the population who do not speak English, partnerships are essential with local community based organizations who employ Agriculture

Economic Development Officers (AEDOs) that speak the local language. This would have to be criteria in partner selection.

- The agricultural sector is predominant in the economic landscape of Liberia, but the majority of people remain very poor. The fact that 76% of the GNP is generated by the agricultural sector and 70% of the population are working in agriculture yet 85% are unemployed and 80% are living under the poverty line, illustrates that large agro businesses are earning the revenue.
- All food commodities are imported at the moment, however some whole food items are produced locally, though in limited quantities. These include rice (the nation's staple), pulses, peanuts, yam and assorted vegetables and fruits. All processed and/or canned food is imported.
- Inflation has caused the prices of input supplies to increase. Any new program should not depend solely on imported input supplies.
- Agro input supplies are distributed for free to vulnerable groups and other individuals by aid agencies. This distorts the market.
- Land lines for tele-communications do not exist. Cell phones are predominant in urban areas and scarce in rural areas due to poor coverage by cell phone providers.
- Roads are few and many impassable during the rainy season. This reduces market access when produce is scarce and prices high.
- The consumption of electricity has almost reached the level of production. In fact, there is no electrical power. Generators provide electricity in the country.

The above information was taken into consideration when the survey tools were developed, actors were interviewed and in developing the interventions.

Subsector Selection

Below is a list of some criteria for subsector selection:

CRITERIA	DESCRIPTION
Unmet Market Demand and Growth Potential	<ul style="list-style-type: none"> • Evidence of strong effective unmet demand for products being produced • Buyers have ready market for products but are unable to meet demand • Potential for growth and continued competitiveness of subsector
Potential Increase in Income and Wealth	<ul style="list-style-type: none"> • Potential for increased revenues at all levels of subsector. • Projected increases in sales, profits, or returns to labor
Opportunities For Linkages	<ul style="list-style-type: none"> • Potential forward/backward linkages between large and small enterprise. • Large buyers are overlooking MSEs as a source of supply or unable to organize them to meet their demands.
Potential For Employment Generation	<ul style="list-style-type: none"> • Potential for enterprises (large and small) to create new employment opportunities as the subsector develops or expands.
Number of MSEs	<ul style="list-style-type: none"> • Number of SE operating in the subsector
Value Added Potential	<ul style="list-style-type: none"> • Potential for SEs to add value to raw materials and gain higher earnings.

CRITERIA	DESCRIPTION
Potential For Increases in Productivity	<ul style="list-style-type: none"> Potential for technologies or management systems to increase the productivity and earnings of enterprises in the subsector.
Competitiveness	<ul style="list-style-type: none"> Competitiveness of the subsector on the world market and/or of SEs in the subsector.

Source: Action for Enterprise

With the impact goal in mind, and through a process of ranking, the following three criteria were chosen to guide the process in choosing two subsectors to study:

1. Potential Increase in Income and Wealth
2. Potential For Employment Generation
3. Value Added Potential

The group of 28 were presented 11 potential subsectors to study: cowpeas, peanuts, vegetables, solar electrification, rice, cassava, tapioca, cocoa, coffee, palm oil, and bananas. These subsectors came from the Scope of Work and the CIA country profile.

After some discussion, the following five subsectors were chosen to be ranked in relation to the chosen subsector criteria: cowpeas, peanuts, palm oil, rice and cassava. The following emerged:

Criteria	Potential Sectors				
	Cowpeas	Peanuts	Palm Oil	Cassava	Rice
Potential Increase income	20	22	15	21	15
Potential for Employment Creation	3	6	1	7	1
Value Added Potential	4	6	0	10	0
TOTAL	27	34	16	38	16

Cassava and peanuts scored the highest in the process and were selected to conduct a subsector/value chain analysis.

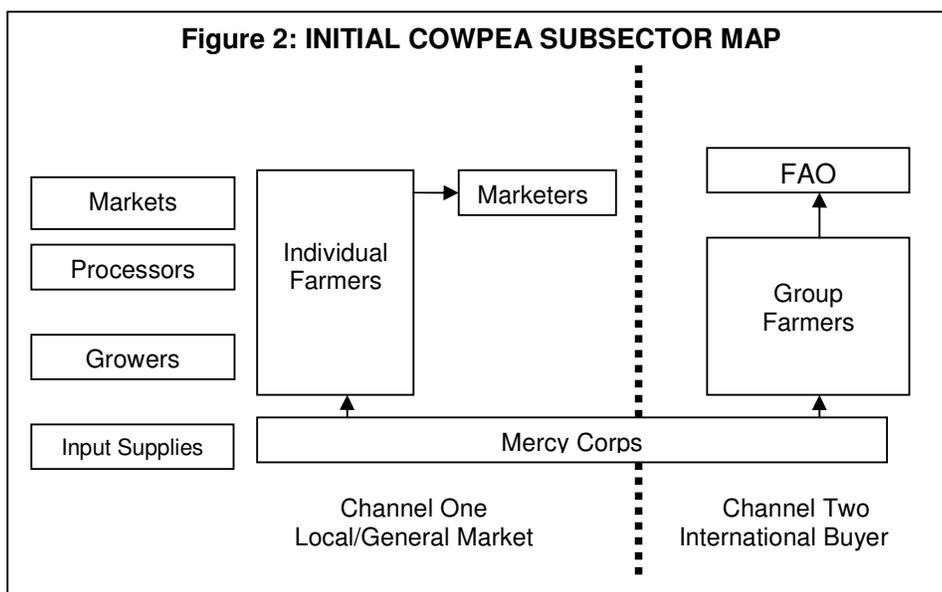
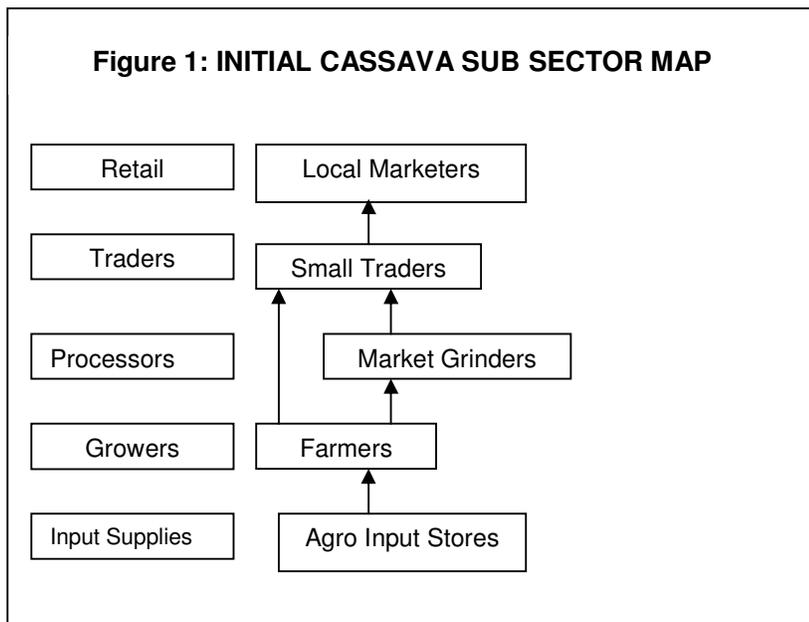
Preliminary Subsector Map

In small groups, the participants prepared a subsector map for peanuts and processed cassava from their understanding of how the subsector worked. This activity aided the participants in deconstructing the range of activities required to transform the product from raw material to reaching the consumer. The subsector map illustrated the way that the activities flowed: input supplies, production, processing, transportation, distribution and retailing.

When the peanut subsector map was completed, it was apparent that value chain development for processed peanuts would be very limited due to minimal value added opportunities. To process the peanuts into peanut butter required accessible affordable technology and also packaging. The capital needed for startup with the purchasing of mechanized grinders and bottles would be extremely difficult for the targeted population living under \$1/day and no access to credit.

It was decided then to conduct a subsector analysis with cowpeas, and principally with the dried cowpea value chain, because of the low capital needs for processing and the high prices that the cowpeas were able to sell for in the market. Cowpeas also ranked third in the subsector selection process.

See Figures 1 for the Initial Cassava Sub Sector Map and Figure 2 for the Initial Cowpea Subsector Map.



5. SUBSECTOR ANALYSIS

With the subsector maps, the group was able to identify the key informants necessary to interview to get a deeper understanding of the subsector and assist us in identifying the constraints which would then guide us in identifying the most competitive value chain and the key informants for the BDS market assessment.

Survey questions were developed for producers, processors, transporters, traders and marketers. This process took some time with much discussion and various revisions. *See Annex 3 for the Interview Guides developed for Farmers, Traders, Marketers, Processors and Transporters.*

The research team of 12 split up into three groups of four and researched the following 8 communities over a two day period.

03/05/05	Croiesville	Kakata	Jannita	Kingsville
04/05/05	Barzo	Wennennstown & 14 Road	Sangaita	Jackson Farm

Challenges Encountered

The LNGO Partners and MC senior staff chose these villages to visit on Tuesday because they presumed it was market day in these towns. At the markets marketers, traders, and transporters would be available to interview. Croiesville had no market on Tuesday so farmers were gathered to talk to, and on Tuesday after meeting with farmers in Barzo the team of 3 went to the Redlight Market in Monrovia which is the largest trading centre in Monrovia. One of the vehicles broke down on the road, so the group heading to Jannita arrived at the end of the market when everyone was packing up and ready to go. A few interviews were conducted as people were leaving to go.

The exercise was very good for the teams of LNGO Partners and also the MC senior staff person. Everyone learned that the best time to actually interview and gather data was not during market time because that is when people are busy earning money. The best time to gather data was the evening before the market when traders are setting up their stalls and transporters have dropped off the traders.

The other important lesson learned, was that the field staff were not aware when markets occurred which indicated that they were not very familiar with the economic activity calendar and schedules of communities.

Data collection is a very challenging activity. We did not spend enough time testing the survey questions or how to record the answers due to time constraints prior to the data collection. This compromised the quality of data immensely.

The idea was to do individual interviews on Tuesday with traders, marketers, processors and transporters, and on Wednesday to do some focus groups with farmers. There was a breakdown with the photocopying machine which did not allow us to make photocopies for the individual surveys. The printers were working in the office, so each team received two folders with survey forms for producers, processors, traders, transporters and marketers. We had practiced doing individual interviews, but not focus groups. When we all met at the pick up point, a focus group role play was held to model how to ask the questions to a group of people and also how to take notes on the responses which would reflect the number of responses amongst the group for each question asked. Unfortunately this was not enough preparation for focus groups and the data collection was not consistent with each team when responses were recorded.

Summary of the Subsector Research

See Annex 4 for the Tabulation of Field Interviews. Only 2 processors were found so they are not included in this summary.

Farmers

The total number of farmers interviewed was 91 which is broken down below:

Villages Interviewed	Jackson Farm	Crozierville	Wennens Town	14 Road	Sangaita	Barzo	TOTAL
Number of farmers	11	10	7	7	32	24	91
# growing cowpeas	6	3	1	7	19	11	47
# growing cassava	10	8	7	1	32	13	71
# of 50 kg bags of cassava produced	129	429	161	24	664	495	1,902
# of 50 kg bags of cowpeas produced	.5	Not recorded	Not recorded	2	8	6.5	17

- 93% of the farmers grew enough to cassava and cowpeas to sell.
- In every village people planted cassava and cowpeas once but there were a few in 14 Road and Sangaita where people planted cassava two times a year.

Cassava

Prices for unprocessed cassava varied between LD\$175 a 50-kg bag² in Sangaita to LD\$250 in Jackson Farm, Croiesville and Barzo. In Wennenstown and 14 Road, farmers got as much as LD\$275.00. This is the price they would get when there was a surplus of cassava in the market. When there was scarcity, farmers could get as high as LD\$550.00 per 50 kg bag.

The most interesting finding in this subsector was that people who processed did not sell their cassava in great quantities because of the low price in the market. In Croiesville we learned that a 50 KG bag of fufu, which is a processed cassava product, would get LD\$250 while raw cassava root would bring in LD\$350 for a 50 kg bag. This was not an incentive to process cassava. The farmers were unaware of existing higher value markets for the processed cassava and therefore sold only to traders or as retailers themselves in local and/or general markets. Lack of processing equipment was a big constraint to processing cassava.

Farmers identified that if they wanted to increase cassava sales they had to plant more which required bigger farms in all communities. Three of the communities identified better transport was needed to get their product to market and three other communities identified that storage was what kept them from earning more money.

² LD\$ = Liberian Dollar. At the time of this consultancy, LD\$56.00 = US\$1.00.

Every community used the Kuu structure to increase their labor force on their individual farms. A Kuu is an informal indigenous labor cooperative in Liberia. Farmers get together in groups and go to each farmers field to clear (brush), then to plant and then to harvest. The increased labor increases the production.

Cowpeas

Cowpeas were introduced as a crop to be sold by Mercy Corps in 2004. MC provided the seeds and technical assistance through the LNGOs in how to grow the crop. AGHRA had made contact with the FAO who agreed to be the buyer of the dried cowpeas. The FAO paid a very good price (US\$1.50/kg) but they took up to 3 months to pay. Not many farmers had planted cowpeas but they felt there was enough demand for the product in the local markets where they could sell cowpeas by the salmon cup (a unit of measurement in Liberia) in the local markets for LD15-LD25. Access to buyers that would buy in bulk and pay in a timely manner was an issue for the farmers.

Marketers

Twenty five marketers were interviewed in 5 market locations and their sources of supplies varied as is indicated below.

Where do you get your supplies?	Kakata	Nyamah/Walker town	Kingsville	Bensonville	Janita/Demamu
Growers				7	√
Traders			1		
Importers	√				√
Marketers	√	√	1		
Monrovia Red Light Market	√	√	2		

The problems that the marketers faced were transportation, access to a consistent quantity of supplies and the quality of goods. Storage was identified as a problem in Bensonville. Other problems included unstable prices, financing and competition.

Traders

Thirty three traders were interviewed in 4 villages. Their source of supplies varied as illustrated in the chart below.

	Jannita	Kingsville	Red Light	14th Road
Number of Traders Interviewed	14	8	5	6
From whom do you buy cassava?				
farmers	14	6	5	6
marketers		5		
grow it themselves		6		

The growers, traders and marketers were difficult to distinguish in most cases. The farmers essentially took their goods to market and then sold it directly to customers who may be other marketers and so they played the part of traders and growers.

Transporters

Transportation was a major problem for all actors in the subsector. When speaking directly to the transporters, the high cost for repairs and the poor roads forced them to charge high prices to transport goods and people.

Names of Villages Interviewed	Red Light	Jennita	Kakata	Kingsville
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Number of transporters	12	5	5	2
How much do you charge per bag? LD\$				
Cassava	35.00	30.00	75-150.00	60.00
Cassava leaves	30.00	200.00	50.00	80.00
Dried Cowpeas		50.00	500.00	

6. IDENTIFICATION OF SUBSECTOR CONSTRAINTS

The following is a summary of the problems identified from the field research with actors in the cassava and cowpea subsectors:

- Traders and marketers for cassava set the price for farmers.
- Traders do not have allocated spaces in markets for the raw cassava.
- When cassava was in surplus in the market, prices were very low for the farmer.
- Only one large buyer was found for the cowpeas which was the FAO. They did not pay in a timely manner so farmers then sold it in markets for a much lower price.
- Cowpea seeds did not arrive in a timely manner from MC which resulted in planting late and a poor harvest
- Farmers did not know where to get cowpea seeds
- When the cowpeas were harvested they were infested by the weevil which destroyed much of the crop.
- Farmers need access to information on improving their crops and how to get rid of weevils and other pests like ants that attack their crops using IPM methods.
- Farmers and others do not have access to processing equipment like grinders that would make processing cassava more efficient.
- Individual farmers cannot work very much land so they produce small amounts.
- Transportation was expensive and inadequate.
- Tools are expensive or of very low quality so they break easily.
- Farmers, traders and marketers do not have access to finance that would assist in purchasing inputs and tools
- Storage does not exist so people have to sell their products when they harvest which reduces the amount they can get in the marketplace for their product.

Commercially viable solutions were then identified to address each constraint and an assessment of the identified solutions was conducted.

7. IDENTIFICATION OF COMMERCIALY VIABLE SOLUTIONS

A commercially viable solution is a market driven solution. It is a solution that is not dependent on donor funds or any type of subsidy. This is a mechanism to achieve sustainability. If supply and demand are driving the relationship, then when the BDS facilitator walks out the door, the activity will continue being driven by the market. The following chart lays out the constraints identified from the field work placed within the BDS categories and the potential commercially viable solutions which were studied for both the dried cowpea and processed cassava value chains.

BDS Category/Type	Constraint	Potential Viable Solutions
Market Access	Lack of contact with large buyers	Linking producers with larger buyers who are in need of supplies.
Input/Supply	Lack of access to affordable quality cowpea seeds.	Access to affordable quality seeds that farmers can be purchase in a timely manner.

Infrastructure	Expensive and inadequate transportation for goods.	1. Collectively, farmers contract larger trucks to transport goods. 2. large buyers provide transport when they purchase goods.
	Lack of adequate storage forces farmers to sell their product when there is a surplus and prices are low.	Access to appropriate affordable storage facilities in the communities.
Technology/ Product Development	Lack of knowledge/skills in crop husbandry and pest control (ants and cow pea pests)	Provision of training and extension services to smallholder farmers.
	Lack of affordable quality processing equipment for cassava in the communities.	Access to and provision of affordable processing equipment.
	Lack of affordable quality farming tools & planting/harvesting equipment.	Access to and provision of affordable quality equipment and tools
Organization and Management	Weak organizational structure for farmers to achieve economies of scale.	Strengthening Kuus to achieve economies of scale.
Finance	Lack of capital to purchase input supplies, equipment and tools.	Savings mobilization in the community through su sus and savings clubs.

8. ASSESSMENT OF POTENTIAL SOLUTIONS

Companies and entities were identified to research which assisted in determining if the solutions to the constraints were actually viable. Surveys were developed for potential buyers, tool suppliers, processing equipment suppliers, cowpea seed suppliers and transporting companies, as well as experts in storage facilities and Integrated Pest Management (IPM). See Annex 5 for copies of the interview guides and Annex 6 for the Tabulation of BDS Providers.

Details of BDS Market Assessment

Cowpea Seed Suppliers

Warehouse Name	Trader contact	Unit	Price
Lofa Warehouse	Trader: Alice Suah	75 kg bag	LD\$4,500.00
		37.50 kg bag	LD\$2,250.00
		One Era Paint Bucketful = 3 kg	LD\$200.00.
Kissi Warehouse	Mr. Washington Jorbor, Manager	75 kg	LD\$3,500.00 to LD\$4,100.00
		37.5 kg bag	LD\$1,500.00 to LD\$1,750.00
Guinea Warehouse	Mr. Korlubah "Sumo" Gbokai	75 kg	LD\$3,000.00 to LD\$4,200.00

Cowpea seeds for planting are the same as the cowpeas that are consumed. The seeds can be used for 4 growing seasons before they become unproductive. Therefore the farmers can purchase their first batch, maintain a seed bank for 3 more growing seasons and then in the fifth growing season, they can purchase another batch. It is important to note that 20 kg of seeds are needed to sow 1.25 acres of land.

The seed suppliers are traders who operate out of the warehouses at the Redlight Market in Paynesville. The traders in each warehouse collectively import their supply

from Guinea. Each trader offers a different price on their seeds therefore it will be important at the time of purchasing the seeds to investigate which trader in which warehouse will offer the best price for the seeds.

Cowpea and Processed Cassava Product Buyers

Potential Buyers	Product they want to buy	Quantity willing to buy	Price they will pay	What will you charge for transport
Fulani Business Association	cowpeas	Depends on Members of association	Depends on the producers price	Depends on what the farmers pay
	Gari (processed cassava)	Depends on Members of the Association	Depends on the Producers price	
Karbeh Warehouse	cowpeas	110 of 330kg bags (=484 of 75 kg bags)	LD4,500/300kg (LD\$1,125/50kg bag) bag when scarcity; LD2500/300 kg (LD\$625/50kg) when surplus	LD\$300/bag

Potential Buyers	Product they want to buy	Quantity willing to buy	Price they will pay	What will you charge for transport
Lofa Warehouse	Cowpeas	Unlimited number of 75 kg bag	LD\$3,800- LD\$4,000	
		Unlimited number of 37.5 kg bag	LD\$1,500 – LD\$1,900	
Gobacha Market	Fufu (processed cassava)	30-50kg bags/month	LD\$50/50 kg bag	LD\$50 for a small bag; LD\$100/bag large
Diamond Warehouse- Manager s Mr. Jackson Lakpor	gari	100-50kg bags daily	LD\$900/50 kg when surplus;	LD\$75 for 138kg bag
	cassava flour	125-50kg bags/month	LD\$350/78kg bag	
Sherriff Warehouse	gari	20-50 kg bags/month	LD\$850/50kg bag	LD\$50- LD\$125 per bag depending on the distance
	cassava flour	20-50 kg bags/month	LD\$250/50 kg bag	
	fufu	10-50 kg bags/month	LD\$50- 125/60kg bag	
Hawah Business Center	Gari	5 to 10 – 50 kg bags/month	LD\$700/50kg bag	LD\$100- LD\$150 per bag depending on the distance
	cassava flour		LD\$200/50 kg bag	
	fufu	5 to 10-50 kg bags/month	LD\$75/60kg bag	

Two importers were also interviewed – Bridgeway and A-Z. They were not interested in buying local produce. Bridgeway was interested in purchasing cocoa that was produced locally because there is an international market for it. They were interested in providing

inputs and buying the product. Diompilor is interested in food security as well as income security. To have farmers grow a non food crop at this point may jeopardize their food security if cocoa prices plunge worldwide. Therefore this idea was not pursued.

Cowpea Buyers

At the Redlight, Gorbachev and Duala markets, there are warehouses where small, medium and large traders store products for a fee and then wholesale the cowpeas to other buyers. Several traders work out of each warehouse. At this point all cow peas are coming in from Guinea and transportation is expensive. The traders purchase the large bags (75 kg or 330kg) in Guinea and then break the bags up into smaller bags of 50kg and era buckets (3kg). The cowpeas are then sold to smaller traders, directly to consumers or farmers to plant. The larger traders have consistent demand and customers that buy in larger quantities. Smaller traders, which trade a few bags at a time, did not share with the interviewers what they will pay a supplier. Also each trader sets their own price for buying and selling. For instance at Guinea Warehouse one trader said he would only sell 10 bags of cowpeas at a time for LD\$50,000.

The following illustrates the market potential for local cowpeas:

Warehouse Traders	# of 75kg bags imported from Guinea	Total / months
Guinea Ware House	500/month	500
Lofa Warehouse	200/week	800
Ground Pea	100/week	400
TOTAL # OF 75 KG Bags imported per Month		1,700
TOTAL # OF Kilograms Imported per Month		127,500

Unfortunately the specific number of bags imported per month or week was not obtained from the other warehouses interviewed.

The following are significant traders that should be followed up with when farmers are ready to sell.

Warehouse	Contact person	Prices
Lofa Warehouse Gorbachev Market Redlight District Paynesville	Trader – Alice Suah	Buys cowpeas: <ul style="list-style-type: none"> • 75kg bag @ LD\$3,800 – LD\$4,000 depending on quality & demand* • 37.5kg bag@ LD\$1,500-LD\$1,900 depending on quality & demand Sells cowpea seeds: <ul style="list-style-type: none"> • 75kg bag@LD\$4,500 • 37.5kg bag @2,250

* Quality means the seeds are clean, full and infested seeds removed. Demand means that during May through July there is a scarcity in the market of cowpeas, so there is a high demand. Low demand for cowpeas runs in November, December and January.

The President of the Fulani Business Association indicated that members of the association would be very interested in purchasing cowpeas produced locally, but he did not have any clear indication of amounts or prices that members would pay the farmers.

Processed Cassava Product Buyers

There were traders from the Gorbacha Market Warehouse, Diamond Warehouse, Sheriff Warehouse and Hawah Business Center interested in purchasing gari, fufu and cassava flour. At Diamond Warehouse two teams went at two times and talked to two different traders. Both traders were interested in buying gari; one said he would pay LD\$900 for a 50 kg bag and another trader said she would pay LD\$450 for a 50 kg bag. It is really important that several traders are approached before a deal is closed in order to get the best price for the farmer.

Below is a summary of the amount of processed cassava products traders from the different warehouses want to purchase.

FUFU	
Warehouse Traders	# of 50kg bags per Month
Gorbacha Warehouse	30
Sherriff Warehouse	10
Hawah Business Center	5-10
TOTAL # of 50kg bags of Fufu/month	Approximately 47-50KG
TOTAL # of kg of Fufu per month	2,350

GARI		
Warehouse Traders	# of 50kg bags	# of 50 kg bags monthly
Diamond Warehouse	100/daily	2600
Sherriff Warehouse	20/month	20
Hawah Business Center	5-10/month	5-10
TOTAL # of 50 kg bags of Gari per Month		Approximately 2,627
TOTAL # of Kilograms of Gari per month		Approximately 131,350

CASSAVA FLOUR	
Warehouse Traders	# of 50kg bags per Month
Diamond Warehouse	125
Sherriff Warehouse	20
TOTAL # of 50 kg bags of Cassava Flour per Month	145
TOTAL # of Kilograms of Cassava Flour per month	7,250

Processing Equipment Suppliers

We did not find any companies that currently carry cassava processing equipment in Monrovia, but two tool supply companies would be willing to import machines.

Building Materials Center, which sells hand tools, would be interested in bringing in processing equipment IF they could sell 30 processing units at one time. We asked them to give us information on the types of machines they could bring in for grinding cassava and also for planting seeds but this information was not provided.

Jeety Trading Company, also a tool supplier, indicated that they can import any kind of food processing equipment into Liberia within one month after an order has been placed. There were no cassava processing machines in stock at the time of the interview. There were two 5.5 hp Honda engines that could be used for running a small cassava or rice mill which were being sold for US\$450 each. Jeety provides transport for purchased equipment to customers in Monrovia and surrounding areas and also provides after sales services.

Contact was made with other INGOs which have brought in cassava processing machines and the following was learned:

- Concern International, an INGO, purchased cassava grinders locally which were built by Thomas Freeman, a Liberian metal smith who currently works with the FAO. His grinder can be powered by a 5.5 hp Honda engine. Concern purchased the engines from the Monrovia Pump Agency and donated the grinders and engines to three communities in Grand Bassa County. These operate in communities as cassava processing mills. One of these communities is Tepenneh. Levi, who is a REFLECT facilitator helps to manage the operation. The mill produces about one metric ton (twenty 50kg bags) of ground cassava in one hour. The mill consumes about one gallon of gasoline which costs LD\$160.00/gallon (or US\$2.91) per hour. Further research needs to be conducted to determine how far farmers travel to use the mill, is it commercial, how do farmers transport their cassava from their farms to the mill and do people sell the processed cassava or only process enough for consumption.
- The Lutheran World Service imported one Hammer Mill from Denmark through DanChurchAid for the amount of US\$3,500.00, including sea freight, on a duty-free basis. The Hammer Mill processes rice, raw and dried cassava, dried vegetables, and grinds dried fish and bones to make animal feed. The mill is run by a 5 hp diesel engine. Details on the output of this machine is pending. More research is needed to determine if it is being used commercially, if so what is the fee for using the machine, and who maintains it.

The BDS market assessment revealed that cassava processing equipment was not accessible or affordable for micro producers. This information led to the conclusion that only the cowpea value chain would be pursued to develop.

Tool Suppliers

Four tool suppliers were identified and interviewed. There are many more in the city of Monrovia. This sampling does illustrate the price range and quality of tools available.

What type of tools do you sell and what price?	Sethi Brothers		Wazni Trading		Jeety Trading		Building Material Center		
	Make	Retail price US\$	Make	Retail Price US\$	Make	Retail Price US\$	Make	Retail Price US\$	Per unit in a dozen
hoes	India	\$1.75	Coco	\$2.50	Brazil	4.00	Brazil	\$2.50	\$2.00
cutlass	UK	\$2.08	Elephant crocodile	\$2.50	China	2.00	England (prima)	\$2.75	\$2.40
files	China	\$1.00	Crocodile Staci	\$3.00	Brazil	3.00	Crocodile	\$3.50	\$3.00
Shovel	Brazil	\$4.50	Temple, Eagle	\$9.00	Brazil	2.00	Brazil	\$5.00	\$4.50
Pingaling	India	\$3.50	Paraboni from Brazil	\$4.00		4.50	Brazil	\$3.50	\$3.25
Diggers	China	\$4.00	Diamond Coco	\$4.00		4.50	Brazil	\$3.75	\$3.25
Axe	Germany	\$4.00	Diamond	\$5.00		4.00	Germany	\$5.75	\$5.00
Nylon Twine	China	\$0.75	2mm Ticineos	\$1.00		1.00	China	\$0.75	\$0.75
Tibline	China	\$2.00	Sotaci	\$30.00	30 meters	8.00	China	\$4.50	\$3.75
wheelbarrow	France	\$25							
watering can		\$6.00							

Building Material Center is the only tool supplier that gives a discount if 12 or more are purchased of a particular tool. The other suppliers felt that their price is low enough. Wazni Brothers will transport tools for customers who purchase US\$8,000.00 or more.

Transport Companies

Transport is scarce and costly as a result of poor road conditions. Four transportation companies were interviewed to determine if larger trucks could replace the taxis currently being used by farmers to transport their goods to markets. The following chart illustrates that there are options that can be pursued by farmers which will reduce their transport costs and reduce opportunity cost to the farmers as a result of breakdown and spoilage during transit.

	How the company charges	4 Tires 10 metric tons	6 tires 15 metric tons	10 Tires 20 metric tons	12 Tires 25 metric tons
Jack Gbassana Transport Services	Rent the whole truck and also pay for fuel	US\$125 for daily rental of truck + fuel	US\$150 for daily rental of truck+ fuel		
Morris Trucking Services	Per 50 kg bag		LD\$50-60 per 50kg bag	LD\$150 per 50kg bag	LD\$250 per 50kg bag
Bando's Transport Services	Per 50 kg bag	LD\$150 per 50 kg. bag – will only transport a minimum of 60 bags			
Liberian United Trucking Services Inc. (LUTCI)	Rent the whole truck plus pay US\$125 for fuel	Montserrado- US\$90	Montserrado – US\$135	Montserrado- US\$180	Montserrado- US\$225
		Margibi – US\$167.70	Margibi- US\$251.55	Margibi- US\$335.40	Margibi- US\$419.25
		Grand Bassa – US\$266.60	Grand Bassa- US\$400	Grand Bassa- US\$533.20	Grand Bassa- US\$666.50

There is no minimum distance that any of the transport companies will go but the roads have to be accessible. Jack Gbassana Transport Services has a 10 metric ton truck which is 4WD (four wheel drive) and can go anywhere, even on bad roads. Jack Gbassana Transport Services and Liberian United Trucking Services require that the whole truck is rented. To hire Bando's Trucking there must be a minimum of sixty 50 kg bags. The following illustrates how many 50 kg bags are required to fill the different size trucks.

	4 Tires 10 metric tons 10,000 kg	6 tires 15 metric tons 15,000 kg	10 Tires 20 metric tons 20,000 kg	12 Tires 25 metric tons 25,000 kg
# of 50 kg bags	200	300	400	500
# of 75 kg bags	133.33	200	266.66	333.33

All the drivers for Bando's and Jack Glassbano Transport Companies are insured. Morris Trucking and Liberian United Trucking are in the process of insuring all of their drivers. All companies are registered and insured. If there is a breakdown during the transporting of produce, the sender will be reimbursed for damaged goods.

Training

In order to increase yields and production outputs, training in improved farming practices is necessary. The MC Ag/Econ unit has identified the importance of training master farmers who will then in turn become 'teachers' and models of the improved practices at the community level. This is a sustainable training delivery mechanism. The training of the master farmers will be done by LNGO Partners. Areas to be addressed are:

- Land Preparation
- Nursery
- Planting
- crop maintenance (cultural practices)
- Harvesting (pre harvest & post harvest technology)
- processing
- Irrigation methods

- Crop budgets
- Crop calendars - When to plant
- IPM – for ants and weevils

Mr. Sumo Mullah, the Assistant Minister at the Ministry of Agriculture Extension Services was interviewed to determine if agricultural extension workers could also deliver training. The Assistant Minister assured the interviewers that technicians working for the Ministry of Agriculture had expertise and experience in the aforementioned areas.

As agricultural extension workers are located in the following towns in counties where Diompilor is working, they could also be another sustainable source of training delivery.

Where Ag Extension workers are located	# of Extension Workers	Office Locations
Grand Bassa	3 people	Buchanan
Margibi	4 people	Kakata
Montserrado	2 people	Bentol

The Assistant Minister was explicit in indicating that the Ministry does not have funds at this time, and Mercy Corps would have to provide transportation to the extension workers, organize the training venues and bring the farmers together. MC would also have to provide a per diem to the agricultural extension workers delivering the training. This could deter a working relationship but in the long run when things stabilize, agricultural extension workers would be the logical training providers in improved farming practices. Mr. Mullah suggested that Mercy Corps write a letter to the Minister of Agriculture asking for assistance to train farmers.

Storage

Interviews were conducted at the World Food Program (WFP) and the Food and Agricultural Organization (FAO) of the United Nations to assess if there were ways to make affordable storage available in the communities so that products would not have to be placed in the market at a time when the price was low. The World Food Program's Logistics Manager explained that the following is needed to safely store cowpeas:

- Stack the food commodities in a cool dry place
- Stack the food commodities on pallets approximately 2 feet away from the walls and about 3 feet below the ceiling
- Stack the food commodities in rows with about 3 feet between rows

He also advised that in order to operate a storage facility in a cost-effective manner, the minimum holding capacity should not be less than 1,000 metric tons and constructed of cement, steel and zinc. The cost of storage with concrete walls, reinforced steel floors and zinc roofs would be prohibitive in small communities.

Currently some farmers store their produce in large plastic barrels with lids which are placed off the floor in the house where it is cool. These containers can hold up to 100 kg and cost LD\$500. It would be prudent for Mercy Corps to identify suppliers of the storage, share this storage solution with all farmers in all communities, and link farmers with the suppliers. Some farmers also place cowpeas in the attic above the kitchen. At this time these are the only storage options that seem to be available.

If cowpea production increases substantially, another type of affordable storage will be needed and this should be researched further.

Integrated Pest Management (IPM) for controlling weevils and ants

There were no Liberian or international experts residing locally that could provide information on IPM to control and/or eliminate weevils and ants. Research was conducted through virtual networks and on the World Wide Web. The following information will have to be developed into training modules and then passed on to the lead farmers on the best practices demonstration plots for dissemination.

IPM for Weevils

From Radhe Bista at International Development Enterprises in Nepal

The remedy to the problem is soil borne bio-pesticide: *Netarhizium Anisopleae* (NA). Ten grams of NA per kg compost used in high humid conditions will generate sustainable results in 15 days. Spraying of *Bovaria Bassiani* every evening will wipe out the weevil.

From Olaf Kula, Rural Competitiveness Team Leader at ACDI/VOCA

Pyrethrum which is a relatively inert compound is effective against weevils for stored cowpeas. Pyrethrum is also derived from the neem tree, introduced and now widespread in West Africa.

Information Pied Piper Pest Control Web Page on Pyrethrum: from [http://www.thepiedpiper.co.uk/th13\(n\).htm](http://www.thepiedpiper.co.uk/th13(n).htm)

In general, insecticides derived from plants are low in toxicity. Pyrethrins are widely used insecticides in the home. They have a rapid "knockdown" for insects and have a low potential for producing toxicity in humans. The major toxicity of pyrethrins is allergy.

Pyrethrum is the initial plant extract of certain plant species of the genus *Chrysanthemum*, native to southwestern Asia, whose aromatic flower heads, when powdered, constitute the active ingredient in the insecticide called pyrethrum. Pyrethrum is a mixture of four compounds: pyrethrins I and II and cinerins I and II.. The crude pyrethrum contains about 30 - 35% pyrethrins and about 50% impurities. The plants were formerly considered a separate genus, *Pyrethrum*. The typical species, the perennial *C. coccineum*, is the florists' pyrethrum, commonly called painted lady. Large deep rose-colored petals surrounding the yellow centre, or disk, are borne on long simple stems above the crown of finely cut leaves. Modern varieties exhibit various colors--white, lilac, and shades of red.

The powdered flower heads of *C. coccineum*, *C. cinerariaefolium*, and *C. marschalli* are chief sources of the insecticide. The active substances in pyrethrum are contact poisons for insects and cold-blooded vertebrates. The concentrations of pyrethrum powder used in insecticides are nontoxic to plants and higher animals; therefore, these insecticides find wide use in household and livestock sprays as well as in dusts for edible plants.

International Institute of Tropical Agriculture web site

Plant based insecticides such as aqueous extracts from neem and papaya leaves control legume pests.

From Dr. Paul Reed Hepperly New Farm Research and Training Manager, The Rodale Institute. E-mail: paul.hepperly@rodaleinst.org

Weevils on cowpeas can be controlled in stored seed by applying cooking oil on to the seed. This does not allow the eggs to stick on the seed. In addition ginger has been shown to be repellent as well as black pepper.

IPM at the North Carolina State University web page

Late beans isolated from earlier plantings are not likely to be severely infested by the cowpea curculio. Periods of hot, dry weather also reduce the level of damage by this

pest. Since this weevil migrates by crawling or flying, crop rotation and sanitation measures are valuable in controlling this pest.

University of California IPM Online website

Sanitation offers the most practical means of control. Since field infestations originate from beans, potential sources of weevils should be eliminated in production areas. Potential sources of weevils include broken sacks of seed beans left over from planting: seed beans left in planting bags and small piles of beans remaining in or around the field after harvest or in a storage area.

IPM for ants

From Dr. Paul Reed Hepperly New Farm Research and Training Manager, The Rodale Institute. E-mail: paul.hepperly@rodaleinst.org

Ants are usually defined on whether they are sugar attracted or fat attracted. Biting ants are usually fat attracted. If worker ants are killed it may not mean much as it is the Queen that is below the ground that will make or break the colony. In the United States pheromones are used to attract ants which carry a laced poison to kill them.

If you find an effective bait it can be laced with EPN entomopathogenic nematodes or fungal pathogens of ants and this may also be effective as a biological control. You may want to see what animals and insects are preying on ants and try these out.

Summary of findings from the two days of interviews with BDS suppliers in Monrovia:

Cowpea seeds that are planted are the same that are eaten. The seed suppliers are the same traders who purchase the final product and operate out of the warehouses located in the Redlight Market in Monrovia. The price of the seeds depends on the trader who is selling the seeds. It is important to investigate which trader will offer the best price for the seeds.

A higher value market for locally produced cowpeas and processed cassava products does exist. The larger traders in the warehouses are willing to pay a much better price for the products than the farmers currently get in local and general markets selling directly to consumers or to petty traders and marketers.

Cassava processing equipment is not readily accessible. One importing company indicated they can bring in the processing equipment but the buyer, which would be the farmers, must pay for the duty. One local manufacturer was identified, but he is currently employed at the FAO (Food and Agriculture Organization of the United Nations) and it is not clear if he is manufacturing equipment commercially. Processing cassava requires equipment. **The inaccessibility of equipment at this time influenced the decision to focus on the development of the dried cowpea value chain.**

Access to quality and affordable hand tools does exist in Liberia. Farmers can purchase tools in bulk with a discount at Building Material Center. Bulk purchasing will require organized farmers groups.

Contracting larger trucks to pick up cowpeas produced by the farmers is a viable option IF the farmers set up collection points and are able to produce enough to fulfill the minimum requirements of the trucking companies. This could be accomplished if farmers were organized into farmers groups. Some companies require that the whole truck be rented which means filling a 10 ton truck at one time with 200 50 kg bags.

Others charge per bag and by distance. When the time to transport the product to the buyer arrives, these links will need to be investigated again in order to get the best deal for the farmers. *See Annex 6 for the names of transport companies and contact information.*

Affordable storage to hold the cowpea production for a village was not found. The current practice of storing 100 kg in plastic barrels with lids that are placed in the home on a pallet will be continued. Placing bags of cowpeas in the attic above the kitchen is also a system that is used. If production substantially increases, another storage system will need to be found.

IPM solutions were found to control and eliminate weevils and ants through virtual networks. Mercy Corps will need to test some of the suggested solutions and develop a training module to train the LNGO Partners who in turn can train the master farmers.

Crop husbandry training can be provided by Agricultural Extension workers if LNGO Partners organize the venue, provide transportation and pay a per diem to the extension workers.

9. PRESENTING THE RESULTS TO THE FARMERS

Value chain development is impossible without the engagement of farmers. To encourage the participation of the farmers, verification workshops were prepared to present back to the farmers the constraints they had shared in the focus groups with solutions and potential solution providers to the constraints. This was done using colorful stick figure posters on A4 sheets. Each poster had a story to it and the picture assisted in animating discussion.

Constraint	Solution
<p>Seeds Late</p> <p>1. Picture of seeds</p> <ul style="list-style-type: none"> Discuss how they got the inputs late and they depended on others for it.... When is a good time to plant so that you can harvest in the dry season and dry the seeds 	<p>Access to Seeds</p> <p>2. Picture of warehouse, 75 Kg bag and LD\$4,500</p> <p>3. 1 KG = LD\$60</p> <p>4. Picture of Lofa warehouse, 37.5 kg bag and LD\$2,250</p> <p>5. 1 Kg = LD\$50</p> <ul style="list-style-type: none"> Hand out pictures and discuss Discuss how they could purchase a bag of seeds
<p>Transportation is inadequate & expensive</p> <p>6. Picture of car loaded with bags & LD\$75</p>	<p>Access to adequate less expensive transportation</p> <p>7. Picture of big truck filled with bags. Draw 50 kg bag and price of LD\$50</p> <p>Morris Trucking Company located in Monrovia</p> <p>Discuss how they can get the truck full</p>
<p>Tools are Expensive and not good quality</p> <p>8. Picture of different tools with old prices</p> <ul style="list-style-type: none"> Discuss the quality and the price of things 	<p>Buy in bulk to get better deals from Monrovia</p> <p>9. Picture of the different tools with the price of an individual and the price of it in bulk to show the difference...</p> <ul style="list-style-type: none"> Discuss buying individually and the benefits of purchasing tools together.

Constraint	Solution
<p>Customers don't pay us on time or pay a good price</p> <p>10. Picture of price at FAO</p> <p>11. Picture of price at red light .50/kg</p>	<p>Customers who pay for product on time</p> <p>12. Picture of Lofa Warehouse with 75kg bag and a plus sign with LD\$4000 and --LD\$3800</p> <ul style="list-style-type: none"> • Discuss how farmers can get the better price if they sell when there is scarcity in the market. • How can we save cowpeas without them going bad?, move in to lack of storage
<p>No Storage</p> <p>13. Picture of village with bags out under rain.</p> <ul style="list-style-type: none"> • Discuss what happens when there is no storage – sell for less, things get ruined 	<p>Accessible and affordable storage</p> <p>14. Picture of barrel with lid and LD\$500 written on the picture under the shed.</p> <ul style="list-style-type: none"> • To store cowpeas we need to ventilate so that it is less than 30 degrees centigrade, dry and waterproof and there is ventilation. • How can we get the LD\$500?
<p>Lack of access to capital to buy seeds and tools and pay for transport</p> <p>15. picture of woman shaking purse and a line though tools and seeds</p> <ul style="list-style-type: none"> • Discuss how lack of credit holds back production which reduces sales 	<p>Savings clubs</p> <p>16. Picture of circle of folks each with a LD\$5 bill in their hand</p> <ul style="list-style-type: none"> • Forming a savings club to buy things together so that the stress is not so much on the individual. Together what can you do if you save money?
<p>Pests/insects</p> <p>17. Picture of ant and weevil</p> <ul style="list-style-type: none"> • Ask how do insects affect your production? And how does this affect your sales? 	<p>Integrated Pest Management</p> <p>18. Picture of a training group and they learn how to keep ants and weevils away from crops and fields</p> <ul style="list-style-type: none"> • Learning about how to produce our own insecticides and using different ways to deal with pests which does not cost us anything. Why is it good to learn together?
<p>Working alone keeps production low</p> <p>19. Picture of farmer working alone and sad</p> <ul style="list-style-type: none"> • When we work alone how much work can we do? How does that affect how much we produce? How does that affect our sales? 	<p>Organizing and working together</p> <p>20. Picture of people working in field together</p> <ul style="list-style-type: none"> • If organized we can do much more together – have someone pick up the picture of the tools with bulk prices, another to pick up the picture of seeds in bags, another to pick up the picture of the warehouse buyer, another to pick up the picture of the big truck with bags, another of the training.

The purpose of this workshop was to assess the buy in from the farmers in their desire to produce cowpeas. The 6 villages that participated in the verification workshops were very enthusiastic about the possible opportunities for reaching higher value markets with cow peas. *This presentation should be made in all the villages that the CPBD would like to include in developing the cowpea subsector. If there is no buy in, then the AEDOs will know from the onset.*

By the end of the presentation of constraints and solutions the farmers then decide to set a meeting to develop an activity plan that lays out in sequence what they should do and when –

- If they want to buy tools then when
- How can they pay for seeds by planting time, should they save? If so how much?

- When they will start to prepare each others land.
The activity plan will ensure that they have the appropriate inputs of tools, seeds and labor to plant for the upcoming season. See Annex 8 for an outline for facilitating the Activity Plan Meeting.

10. DESCRIPTION OF THE DRIED COWPEA VALUE CHAIN

Higher value markets were found for both dried cowpeas and processed cassava. To process cassava to meet the commercial market would require processing equipment which was affordable. No processing equipment suppliers were found in Liberia thus it was decided to focus on the dried cowpea value chain.

Overview of the Cowpea Subsector in Liberia

Cowpea, *Vigna unguiculata* (L.) Walp., is a grain legume grown in savanna regions of the tropics and subtropics. The majority is grown in West and Central African countries. Its value lies in its high protein content, its ability to tolerate drought, and the fact that it fixes atmospheric nitrogen which allows it to grow on, and improve poor soils. In fresh form, the young leaves, immature pods, and peas are used as vegetables, while snacks and main meal dishes are prepared from the dried grain. All the plant parts that are used for food are nutritious, providing protein, vitamins, and minerals. Cowpea grain contains about 25% protein, making it extremely valuable for people who cannot afford protein foods such as meat and fish. After the cowpea pods have been harvested, the rest of the plant can be used as animal feed. The ability of cowpea plants to tolerate drought and poor soils makes it an important crop in savanna regions where these constraints restrict other crops.³



Inputs for cowpeas are minimal. There is no need for fertilizer and the cowpeas that are eaten are the same that are used for seeds. Farmers can save seeds from their yields and use them as seeds to plant. This can only be done for up to four growing cycles before new seeds need to be purchased to curtail inbreeding and maintain healthy crops.

The minimal input requirements, which reduces operating costs for production, and the existing demand fetches a good price in the market, especially when the cowpeas are sold when there is scarcity during the months of May through July. All these factors make cowpeas an ideal cash crop for poor farmers to cultivate. And within the context of Liberia where food security is a number one priority, cowpeas are an excellent source of protein which can be eaten if farmers are not able to sell their product.

Processing of cowpeas requires drying and cleaning. If cowpeas are harvested during the dry season (October – April) then drying can be done by the sun on racks. The growing season is 60 days which means that two crops a year can be planted during the dry season - October and February. Cleaning requires removing all dirt and insect infested seeds. This can be tedious but it is not hard labor.

Production of cowpeas in Liberia has been going on for the last 10-15 years in the county of Lofa which borders on Guinea. In Guinea cowpeas are a part of the daily diet as a protein supplement and an ingredient in their soups which they eat with rice. The movement of people between the two countries and the common farming practices between Lofa and Guinea introduced cowpeas into Liberia. The war displaced people

³ <http://www.iita.org/crop/cowpea.htm>

from Lofa throughout the three counties of Montserrado, Margibi and Grand Bassa where CPBD- Diompilor is active. This has created demand for the product.

In Monrovia in the Redlight commercial district in Paynesville there are warehouses where traders can store their goods for a fee. Traders are bringing in truckloads of cowpeas on a weekly basis. The research revealed that three of the warehouses located in the Redlight Commercial District were importing 1,700 bags weighing 75kg (which is 127,500 kg) a month from Guinea. The demand for cowpeas exists but the demand is unmet with local supply which forces traders to import. The unstable environment and the conflict over the past 15 years in Liberia has impeded the development of the internal cowpea supply chain.

Cowpea Subsector at a glance from the research:

- √ There is an unmet demand for cowpeas in Liberia
- √ Agricultural production has been disrupted as a result of the conflict and production of cowpeas is basically non-existent
- √ Cowpeas are being imported weekly by the truckload from Guinea
- √ Traders purchase the cowpeas, store them in warehouses and redistribute them through retail outlets.
- √ Traders are desperate for local supply to reduce the costs incurred from transport from Guinea.
- √ Cowpea seeds are available for farmers.
- √ Cowpea seeds can be preserved and used for four crop cycles before new seeds are required.
- √ Drying the cowpeas can be achieved by placing them in the sun on a rack which requires minimal capital outlay.
- √ A 75 kg bag of cowpeas can be sold in the range of LD\$3,800 – LD\$4,000 depending on the demand. (When there is a surplus on the market during the months of November through January the price is lower and when there is scarcity in the market, during the months of May, June and July, the price is higher.)

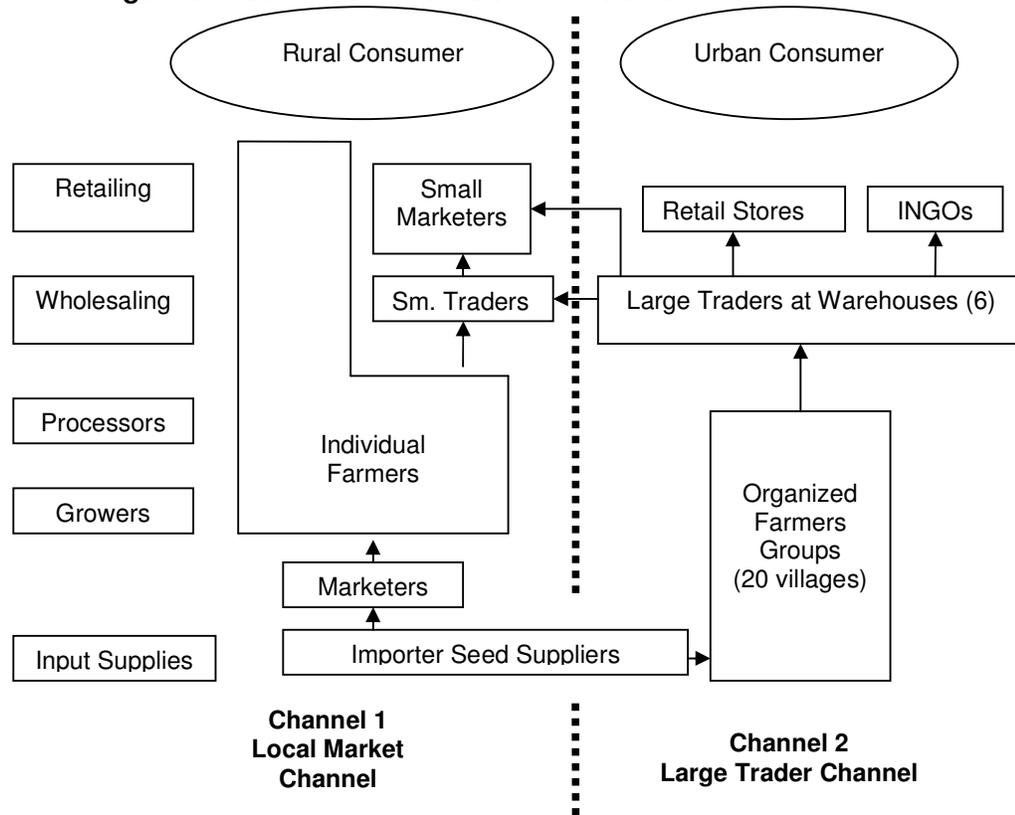
The main activities in the subsector are production, processing and distribution to consumer markets. See Figure 3 for the Post Research Cowpea Subsector Map on the next page.

Channel 1 – Rural Consumers Input Suppliers

Traders are purchasing their supplies from Guinea in bags that are 300kg and 75 kg in size. They go to Guinea to fill 10 metric ton trucks and return to Liberia where they divide the bags into smaller sized bags of 50kg, 37.5 kg and into era buckets⁴ which hold 3kg of seeds. In Channel 1, the large traders who supply seeds sell to smaller traders and marketers in era buckets (3kg = 1 era bucket), who then sell to the farmers in salmon cups (2.5 salmon cups = 1 kg).

⁴ Era bucket is a Liberian measuring standard. There are 3kg to an era bucket.

Figure 3: POST RESEARCH COWPEA SUBSECTOR MAP



Growers: Individual Farmers.

70% of the population is engaged in agriculture. Currently cowpea production is minimal in the counties of Montserrat, Margibi and Grand Bassa where Diompilor is operating. Mercy Corps introduced the crop in 2004 through the Community Development Committees to farmers who are participating in the program. These farmers learned how to grow cowpeas amongst their cassava crops. Cassava addresses food security needs and cowpeas is a cash crop. One of the LINGO Partners, AGRHA, linked the producers with the FAO who was looking for cowpeas to purchase. The price they offered was US\$1.50 (LD\$84) per kilogram. The average area sowed was less than ½ acre which yielded less than 80 kg. The average yield per farmer who participated in this pilot was 50-75 kg.

Acreage planted	Yield
1.25	200 kg
1.00	160 kg
.75	120 kg
.50	80 kg

The farmers received on-farm technical assistance in how to plant, intercrop, maintain the crop, dry and clean the cowpeas. They did not receive any training on organic measures to control and eliminate weevils which destroyed much of their crops.

To achieve food security, farmers are cultivating up to 3 acres of land which is needed for rice production to support one family of 5. Rice is the primary food for Liberians. Cassava is a secondary crop and cowpeas can be intercropped with cassava. If a farmer wanted to get serious about cultivating cowpeas, then it is imperative that they have access to labor to assist in enlarging their cultivated area to at least 5 acres.

Retailers: marketers, petty traders

These buyers are located in the local markets that are held weekly in certain villages and in general markets located in larger urban centers like Redlight in Monrovia, Kakata market, Kingsville market, etc. They purchase the cowpeas from the farmers by the

salmon cup (2.5 salmon cups to 1 kg). Farmers sell the cups anywhere from LD\$10-15 per cup to the marketers or petty traders. When farmers sell in this market channel they get LD\$25 to LD\$37.50 per kilogram. If farmers sell directly to consumers and play the role of retailer, they charge the same amount.

Channel 2: Urban Consumers

The following is the vision for the development of the dried cowpea value chain.

Input Suppliers

In Channel 2, the traders who are seed suppliers sell directly to the farmers associations who then create seed banks to produce their own seeds.

Growers – Farmers Associations

To move in to channel two and sell to the large traders, individual farmers need to increase their yields. This requires the cultivation of larger farm areas and acquiring the tools to do so. Labor can be accessed by working collectively and building upon the existing kuu organizational mechanism that currently exists at the community level. Access to information and training on how to control and eliminate the weevil will also contribute to higher yields.

The farmers associations can also be a mechanism to initiate savings mobilization which could then be directed towards bulk purchasing of seeds, tools, transportation and eventually to purchase a storage facility.

Wholesalers

These buyers have consistent demand and are desperate for local supplies to remove transportation costs incurred when importing from Guinea. They are willing to purchase cowpeas in 75 kg bags. They will pay between LD\$4,100 to LD\$4,500 for a 75kg bag which translates to LD\$55 – LD\$60 per kg. They then re-bag the cowpeas into 50kg bags and sell them for LD\$4,500 per bag. Or they break the bags up into 20 era buckets (1 era bucket = 2.5 kg). This price will be paid when there is scarcity in the market. When there is a surplus of cowpeas, the price they will pay farmers is reduced and ranges between LD\$3,000 – LD\$3,500 per bag.

Smaller traders operating out of the warehouse decide at the time of sale what they will pay. It is therefore important for farmers to research the trader they will sell to in order to get the best price.

Retailers

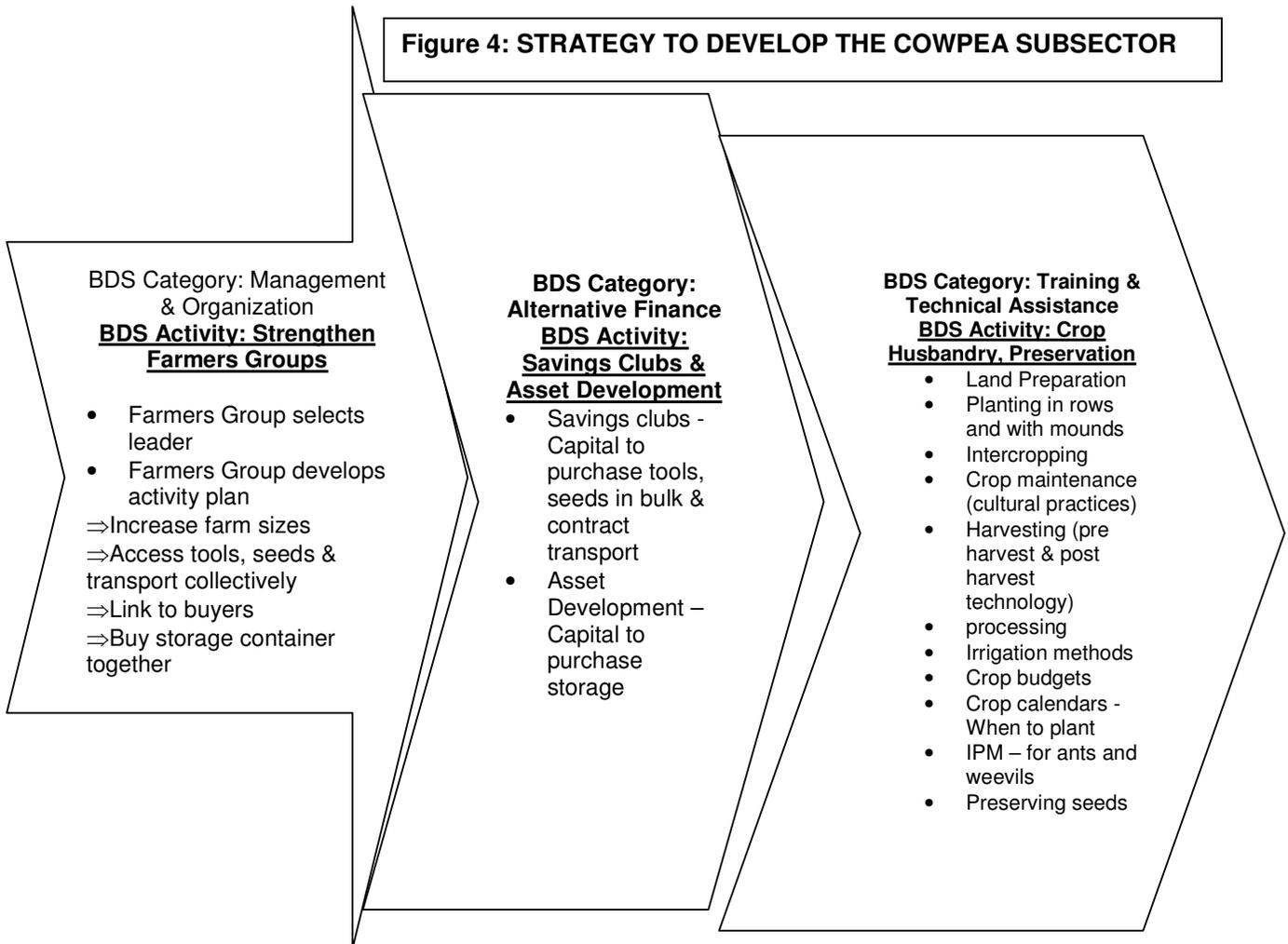
Retail outlets in urban centers outside of the main markets would purchase their cowpea supplies from the wholesalers.

11. STRATEGY TO DEVELOP THE DRIED COWPEA VALUE CHAIN

The dried cowpea value chain has great potential for growth and development. There is an accessible supply of seed inputs and there is a ready market IF farmers are able to increase their production yields. For farmers to optimize the benefits of participating in this subsector, they must have the ability to achieve an economy of scale which means they can increase yields by decreasing costs resulting in higher incomes. Reducing costs requires accessing quality affordable seeds, tools and reliable transport. Increasing profits requires enlarging the area cultivated, applying improved farming techniques and ecological pest management, having access to storage so the product

can be sold when there is scarcity in the market and accessing buyers in a higher value market.

In this section the subsector constraints are presented with corresponding activities to provide a framework for the farmers to achieve an economy of scale.



Subsector constraint – Inability of producers to achieve economies of scale.
BDS Category – Management & Organization
BDS Activity - Strengthen Farmers Associations

Increasing production yields in an efficient cost effective manner can only be accomplished through organized farmers groups. These do not have to be registered formal associations, but it will require some sort of level of association where farmers commit to a plan that maps out how they can achieve higher yields which will be rewarded with higher incomes.

Within the Liberian context, the indigenous Kuu organizational mechanism is an excellent foundation to build upon. The farmers in the communities where focus groups were held understand the concept of working together to increase labor output at the individual farm level. The farmers get together in groups of 5-7 and spend time on each

individual farmers' land to provide labor to prepare the land for cultivation, plant and harvest.

This same mechanism can be used to develop a plan to buy tools and seeds in bulk, pay for reliable transport and even invest in a storage facility. In order to purchase quality tools at reduced prices, and also to purchase the seeds in bulk, a savings mechanism needs to be facilitated. This is discussed further on.

To encourage farmers to organize farmers groups so that they will establish a plan to increase their yields to meet market demand, a presentation of constraints and solutions using posters/pictures needs to be facilitated in each village which will participate in developing the cowpea subsector. (See Section 9: *Presenting the Results to the Farmers*) The intent and objective of the presentation is to animate the farmers to decide to organize and to set a meeting when they will get together with a LNGO Partner staff person to assist them in developing an activity calendar. See Annex 8 for an *Activity Calendar Planning Meeting Outline*. This meeting should accomplish the following:

- A leader is appointed.
- Determine how much land each farmer wants to plant with cowpeas
- Develop an Activity Calendar which should include the following:
 - Determine amount of seeds needed for the amount the farmers in the community want to plant
 - Figure out the amount of seeds in quantity and the cost per community
 - Figure out what tools they need to purchase and total cost of the tools
 - Figure out the amount that each person can save a week
 - Figure out how much they can save per week over June, July, August
 - From this determine when they can purchase tools
 - Seeds have to be purchased by the end of September
 - Figure out when they will have to start to prepare the land for the cowpeas on each farm
 - Calendar should be with pictures and numbers
 - As a facilitator of this meeting make appointments of when you will link the farmers with the tool suppliers and the seed suppliers

Role and Responsibilities of Mercy Corps as a BDS Facilitator

1. Assist the participating LNGO Partners in determining what communities they will target and which staff will be responsible for which communities.
2. Provide TA to LNGOs in how to develop savings clubs
3. Provide TA in how to monitor the achievement of targets set out in the activity calendars
4. Provide TA in how to strengthen the farmers groups so that the farmers groups become BDS providers – for instance:
 - how farmers groups can bulk buy and then distribute amongst their members in a transparent manner
 - how to negotiate with buyers
 - how to negotiate with transportation companies
 - how to organize collection points so that several communities can take advantage of bulk buying seeds and tools and pay for transportation

Role and Responsibilities of LNGO Partners BDS Facilitators

1. Facilitate the Activity Plan meeting

2. Establish a monitoring mechanism to ensure that farmers groups are meeting the targets set out in their Activity Calendars
3. Train the leaders of the farmers groups in how to manage a savings club
4. Train the farmers groups in how to bulk buy tools and seeds, contract transportation companies and establish collection points
5. Facilitate links with the tool and seed suppliers, transportation companies and procuring the storage facilities if that is part of the plan
6. Provide supports to the leaders in achieving the targets

If farmers are going to plant cowpeas in October 2005 so that they can harvest during the dry season, the farmers groups need to have activity calendars developed by June.

Subsector constraint – Lack of knowledge and skills in crop husbandry—land preparation, crop maintenance, harvesting, and preservation —have led to low yields.

BDS Category – Training & Technical Assistance

BDS Activity – Develop and strengthen master farmers to provide ongoing training in the communities & Train Ag Extension Workers

Agriculture practices have been passed down through generations. Introducing new techniques is a challenge as vulnerable populations are very risk adverse to change. They have been planting and harvesting for generations, they have survived, even if just barely. Doing something different may not work, and they do not have the margin to lose.

In every community, or at least in the majority of communities, there is always someone who is innovative and will take a risk to try new things. Others then see the improvement and may eventually adapt a new practice. Identifying the innovative farmers and working with them has proven to be a successful sustainable training delivery mechanism around the globe. The master farmer then becomes the teacher by modeling and practicing the new techniques.

Master farmers should be trained in the following areas:

- Land Preparation
- Planting in rows and with mounds
- Intercropping
- Crop maintenance (cultural practices)
- Harvesting (pre harvest & post harvest technology)
- processing
- Irrigation methods
- Crop budgets
- Crop calendars - When to plant
- IPM – for ants and weevils
- Storage
- Preserving seeds

The training of agricultural extension workers can be achieved by having them accompany the LINGO Partner staff person who is providing the TA to the master farmers in the field. Strengthening the agricultural extension workers will leave resource people available in the counties where Diompilor is working. When the government becomes more stable and effective, the Ministry of Agriculture will be poised to continue providing updated current technical assistance in the field.

Role and Responsibilities of Mercy Corps as a BDS Facilitator:

1. Facilitate a meeting with the LNGO Partners and establish a training delivery schedule that will cover off the topics to be delivered, by whom and in which communities. During this meeting establish criteria for selecting a master farmer.
2. Designate an individual within Mercy Corps to research and test IPM solutions to weevils, ants and other pests that damage the crops and reduce production yields.
3. Develop a training module on IPM for cowpea pests (what to use, how to mix it, how to apply it, when to apply it) and train the LNGO Partners in how they can then train the master farmers and agricultural extension workers.
4. Develop training modules for the topics that need to be delivered and train LNGO Partner staff in how to deliver each module using adult education principles.
5. Monitor the targets set out by the LNGO Partners from the delivery of training.

Role and Responsibilities of LNGO Partners as BDS Facilitators

1. Identify master farmers in each community in which they are working based criteria established by the CPBD program.
2. Establish contact with agricultural extension workers servicing the counties in which they are working to determine level of interest.
3. Organize a training schedule for each community in which they are working.
4. Inform the agricultural extension workers and include him/her in the delivery of TA in the communities when possible.
5. Where possible, do exchange visits between master farmers so that they can share successes and problem solve together.

Subsector constraint – Lack of capital for inputs (seeds), tools and storage containers.

BDS Category – Alternative Finance

BDS Activity – Savings Clubs and Asset Development

Access to capital is a huge constraint for farmers who are poor. In the industry of development we have seen how grants, subsidies and in-kind donations have resulted in more dependency and an attitude of entitlement. Yet at the same time, lack of fixed and liquid assets is a reality.

In a poverty stricken context like Liberia, anyone who makes any material improvement in their life then becomes responsible for extended family members who are not as ambitious and are ensconced in the dependency mindset. If the "successful" individual does not share their wealth, s/he will face social shunning and rejection at the community level. This is a huge disincentive to invest in assets that will secure their livelihood and will affect the initiation of any savings mobilization scheme.

Specifically in the Liberian context, where looting was a key mechanism to terrorize and establish warlord alliances during the conflict, having assets can actually reduce social and physical security. Liberia is in a transitional period right now and there is not a strong sentiment amongst the population that things are "normal". The fact that the internally displaced people (IDP's) refuse to return home until after the elections because they do not trust that they will be safe in their communities is an indicator of the level of mistrust. And this is despite the presence of the UN and also the disarmament initiative. This reality needs to be taken into consideration when we are asking people to increase their income level which requires the acquisition of assets like tools and storage facilities.

Credit creates indebtedness and when people are poor the literature indicates that savings is what people in poverty want. Credit is important when individuals have a means to pay the quotas with interest. Savings establishes the means to graduate to credit. Institutionally to administer a credit program requires much more sophistication

than mobilizing savings. For this reason savings mobilization is being recommended to foster access to finance for the development of the dried cowpea value chain.

Savings clubs

CPBD has done an extraordinary job of mobilizing communities to face their problems, work together and stabilize during the life of this project. This can be built upon.

When farmers groups develop their activity calendars, they will determine the amount of seeds they will need for the amount of land they will cultivate individually. In order to prepare the land they will need to purchase tools and then the seeds at specific times. At this planning meeting, the amount of money that is needed to meet their goals and the purchase date will be determined. They can also set out in this meeting how much money each one will contribute per week in order to meet their goals. This is “savings with a purpose⁵”. Each farmer will determine what tool they need to purchase and the amount of seeds that is required for the amount of land they want to cultivate for cowpeas. (See Annex 8 – Activity Calendar Planning Meeting Outline) But collectively they can pool their individual contributions to meet their individual goals and purchase in bulk which will reduce the cost of what they want to purchase.

The act of setting a goal of what to buy and when and then actually being able to purchase it will provide the farmers with an experience with success. Short term saving is an effective community development mechanism. The experience with success then allows the farmers to have confidence in planning.

While the cowpeas are growing, the farmers can continue saving in order to pay for the transport so when the harvest occurs, they will have access to reliable transport. A savings club builds upon the concept of a su su. In a su su, individuals contribute once a week or month and then one of the contributors receives the collected money. Instead of giving the money to an individual when the money is collected, the money is collected for a period of time like over four weeks and then goes towards the bulk purchase of tools or seeds or pays for transport.

A person needs to be appointed to collect the money and to hold the money until the targeted amount is reached for the designated purchase. This person should be elected by the farmers’ group members based on the fact that they are respected in the community, trustful and reliable. The farmer’s group may choose to open up an account in a bank and have 3 signers which must all sign when money is withdrawn. This gives the farmers experience in working with a bank and also a safe place to store their money. If the farmers group decides to deposit their savings in a bank the group is required to register as an association with the District Commissioner or the Superintendent which requires a constitution and bylaws.

Role and Responsibilities of Mercy Corps as a BDS Facilitator

1. Develop guidelines for managing a savings club which includes identifying individual items to be purchased, the total amount of the collective group, how to set targets with the members of farmers groups (for example LD\$5 or LD\$10/week), selecting a leader to collect the money, keeping records of contributions, safe places to hold the savings, making a purchase and getting an receipt, managing the receipts.
2. Training LNGO Partner staff in how to use the guidelines to train the farmers groups.
3. Monitoring LNGO staff in how the savings mobilization is being implemented.

Role and Responsibilities of LNGO Partners as BDS Facilitators

1. Commit to learning how to train farmers groups in savings mobilization.

⁵ Thanks to Sam Gotomo for coining the term “savings with a purpose”.

2. Identify banks in urban centers (Kakata, Buchanan, and Monrovia) that will open up accounts for farmers groups.
3. Train farmers groups in how to implement a savings club that corresponds to the items they want to purchase and the amount they can save individually per week.
4. Train the savings club leader, who could easily be the farmers' group leader, in how to keep records and deposit money in banks if the community chooses to do so.
5. Monitor the amount of money saved in relation to the targets saved which the farmers association sets out in their activity plan.
6. Facilitate the link between the leader, or appointed individuals, and the suppliers of the items being purchased.

Asset Development

When people living in poverty have a limited means to build up their assets, incentives and assistance is required. Asset development is essentially a savings matching mechanism that motivates people in poverty to purchase big ticket items.

If the farmers are going to be able to sell their bags of cowpeas at a time when they can get the best price, they will need storage. The only storage container that was identified during the research was a plastic barrel with a lid costing LD\$500. More research needs to be conducted. The purchasing of the storage container is essential if farmers are going to have incentive to grow more so they can earn more.

Asset development is an incentive to save for big ticket items. The idea is that people set a target to purchase an asset that will move them towards self sufficiency. An outside entity then matches the amount that they can save. For instance, if the farmers commit to buying a storage container that costs US\$600 and set a target of saving US\$100 (LD\$5,600) then this is matched 5 to one by an outside entity in order that the farmers can actually achieve purchasing the needed asset in a reasonable amount of time. When the farmers have saved the US\$100 target, then Mercy Corps or another outside entity provides the US\$500 and pays the supplier directly so as to deter leakage. Otherwise the farmers will have to save for a year or two and this period of time, without achieving a concrete goal, is not realistic for people living poverty to sustain that kind of effort.

Asset development is not a grant or gift. The farmers must commit to contributing a substantial amount of the cost of the asset they desire to purchase. If they do not achieve the goal they set for themselves, they do not receive any money from Mercy Corps. A critical component to this alternative finance mechanism is paying the supplier directly.

Role of Mercy Corps as a BDS Facilitator

1. Establish a policy that will permit asset development within the mission. The policy should contain the maximum amount that MC will match, the kinds of items they will make matching contributions towards, a financial policy which lays out the paper work needed by the finance department, how a supplier is chosen and the process for making a request to support a match in a community is done (some sort of form should be created that).
2. Create guidelines for operating an asset development program. This would include purpose of assets, how they are used, contribution matches required at the community level, how the assets are purchased (suppliers are paid directly by mercy corps).
3. Train LNGO Partners staff in how to use the guidelines, fill in forms and train the farmers groups.
4. Monitor the savings targets that the communities have established in purchasing an asset.

Role of LNGO Partner as BDS Facilitators

1. Commit to learning how to implement asset development in the communities and attend the training.
2. Identify communities which have identified purchasing a storage container as part of their activity plan.
3. Train farmers groups in how to set savings targets to meet their contribution requirements for the asset to be purchased.
4. Monitor the savings targets set by the group.
5. Ensure that paper work is completed in a timely manner so that when the communities have met their goal they can purchase the asset immediately.
6. Facilitate the link between the farmers' group leader and the supplier of the asset.

12. ASSESSMENT OF CURRENT STAFF CAPACITY

Capacity building of local partners is an integral aspect in the implementation of the CPBD Program. If local partner NGOs have capacity to go forward, then Liberia will have the means to rebuild after many years of destabilization.

The Annual Work Plan for FY3 of this project lays out the following interim objectives and the activities to achieve the objectives for the AEDU:

Interim Objectives:

I.R. 4.1: Increased production of diverse food crops.

I.R. 4.2: Increased economic livelihood.

Activities:

1. Responding to the technical and in-kind material input needs of Agriculture and Economic Development Community Empowerment Projects evolving from the Reflect Process.
2. Provide training and on-going coaching to local NGO Agriculture and Economic Development core partners in Best Practices and other core extension skills.
3. Training targets farmers in "best practices" and other innovations through cluster level sites.
4. Providing training and on-going coaching to Local Core Agriculture and Economic Development NGO partners in Businesses Development Services (BDS).
5. Provide training and on-going coaching to interested small and medium enterprises, including those emerging from Self-Help Groups and the CEP processes.
6. Developing and disseminating "Best Practices" Visual Aids, Bulletins and Radio Programs.
7. Fostering business and investment linkages.
8. Piloting a Solar Lantern Project in Targeting CPBD Communities.

The core of all the aforementioned activities requires an understanding of markets. Doing socio-economic development with vulnerable populations requires knowledge on the market economy and also knowledge on how to motivate, animate and build capacity.

This consultancy worked with two implementing local NGO partners – AGHRA (Action for Greater Harvest) and PNO (Project New Outlook). LNGO Partner staff have been trained to provide technical assistance to farmers. They live in the communities and accompany the farmers daily. One of the key mechanisms to disseminate technical assistance at the field level are the best practice and innovation demonstration (BPID)

sites. AEDOs ask farmers to clear a site so that they can then train them in the improved farming methods in these best practice sites. The intent is that with improved farming methods, yields will increase. The current thinking is that with increased yields, food security and increased income will result.

But increased food security can only occur if there is a way to store and/or process the produce so that households have access to the food when there is scarcity. Increased income will only occur if there is access to market outlets that pay a price that benefits the farmers. For instance, if the yields increase and there is no storage to hold the produce until a time when there is a scarcity in the market, the flooded markets bring down the price of the produce and farmers receive little to no return for their efforts.

Connecting improved farming methods to increased yields to the timing of when to sell in the market, requires facilitation. Some of the farmers who participated in the focus groups have made the correlation but do not have the appropriate links to markets and therefore do not benefit from improved yields.

This consultancy provided hands on training to 11 AEDOs and 1 Ministry of Agriculture technician in making the connection between input markets, on farm technical assistance and market outlets. We spent 4 days talking with farmers, suppliers and buyers. We then processed the data and presented it back to the communities in a comprehensive, participatory forum yet at the end of the day the AEDOs did not really understand the connection between the data results and improving income levels, which is really all about reducing costs and increasing sales.

Within the context of poverty, post conflict and limited opportunities, people are much more comfortable with being told what to do and then executing the task. This is a common phenomenon. Doing socio-economic development requires constant problem solving and innovative thinking. Three weeks was not enough time for the 12 participants to internalize their learning even though it was 100% participatory. New concepts and approaches need time for people to fully comprehend before they can apply their new skills and knowledge. Much more capacity building is needed for the LNGOs in the area of market literacy.

To calibrate the comprehension of a basic crop budget, which is required to determine how to calculate the amount of seeds needed for the amount of landed cultivated and then how much the seeds will cost, a very simple BDS test was given to the team of 12 in our final closure meeting. They had 15 minutes to answer the questions. *See Annex 9 for the BDS Test.* The low scores illustrated that much more work needs to be done in this area so that the LNGO staff have the capacity to lead the activity planning workshops for taking the cowpea value chain development forward.

Motivating people to try new things requires knowledge. Smallholder farmers are risk adverse because they are operating out of survival. People living in poverty have limited resources and absolutely no margin or cushion to absorb shocks and stresses. To venture in to something new has to be proven that it will be beneficial and that there is a high return on investment. Otherwise, the risk is too high. The farmers are not going to change their practices unless they know they are going to benefit. If the field staff are going to motivate the farmers to try new things, they are going to have to know how much the farmers will earn if they want the farmers to change their behavior. Focusing on the potential sales, and the means to decrease their costs, can be the incentive for changing farming practices, rather than focusing on using best practices.

One of the dangers for the whole program that could result from this consultancy is the thinking that BDS is a new activity. The market development approach of BDS is an approach to achieving the CPBD objectives; it is not a separate activity.

From the focus group discussions and at the verification workshops where the solutions were presented, the farmers expressed their thirst for information and their interest in entering the cowpea market as suppliers because of the potential returns. They have not given up on change. They want peace, stability and to earn a decent living. They are moving forward despite the fact that they have hunger in their bellies and limited information and experience in interacting with the formal economy. The opportunity is there for transformation to transpire, and it can be done through market transactions.

The LNGO Partners staff has access to information, food in their bellies and substantial salaries in Liberia. This level of economic and food security gives them a strong foundation to enable them to respond to the farmers' needs for information and market links. Building relations with the farmers based on trust and compassion is required when introducing new ideas. Observations in the field of AEDOs keeping separate from the farmers, talking at them instead of with them and not being prepared were all indicators of weak field etiquette. The provision of coaching to AEDOs on building community relations while transferring technical information would strengthen the program considerably. That being said, training can be offered by Mercy Corps to build capacity at the LNGO Partner level, but if the Partner staff do not make efforts to learn, then this program cannot fulfill what it has set out to do.

In order to achieve the stated objectives in the CPBD FY3 Annual Plan, the MC AEDU staff will require capacity building in how to make the connection between input markets, on farm training and output markets. This can be done through coaching and also continued visits with the market players. Mercy Corps requires someone with skill sets who can build capacity regarding agricultural best practices, IPM, how to create savings clubs and establish an asset development component.

At the LNGO partner level there needs to be capacity to facilitate the mobilization of farmers groups, develop and implement activity plans (which needs to include identifying how much land will be cultivated to sow cowpeas, how many seeds they need, the cost of the seeds, the cost of tools, the cost of transport), savings clubs, asset development, agricultural best practices and facilitate market links.

The actual implementation in the field will require the development of activity calendars with set targets for the number of acres of cowpeas to be sowed, the quantity to be successfully harvested, in what villages and by which staff.

13. CONCLUSION

In Liberia there is opportunity within the dried cowpea value chain for considerable growth because the supply is currently 100% imported. Our research identified that three warehouses are currently importing 127,500 kg of cowpeas a month from Guinea. There are large traders operating in these warehouses that will pay between LD\$3,800 and LD\$4,000 for a 75 kg bag. The price they pay for cowpea supply will depend on the scarcity or surplus in the market. The returns for farmers on a 75 kg bag of cowpeas can be 10 times more than what the farmer can get in the local market for a 75 kg bag of cassava.

Mercy Corps through, the CPBD Program, has the opportunity to facilitate the development of the cowpea value chain in Liberia which can increase income for farmers, transporters and traders as well as make this food product available in the

market for a lower price to consumers. This will increase overall food security in Liberia and economic security for the farmers.

The challenge in taking this initiative forward for Mercy Corps is capacity; capacity within Mercy Corps and also with the LNNGO Partners. Mercy Corps will need to play a role in capacity building if the dried cowpea value chain is going to be developed.

The CPBD is an integrative holistic development program navigating through a very delicate transitional period in Liberia. Stabilizing and mobilizing communities is necessary in a post conflict environment. When people have a sense that they are safe, they then put their head up and look for how they can earn a living. A value chain approach that incorporates community mobilization through farmers groups, and linking farmers to input and output markets while providing on-farm technical assistance with trained community people lends towards the vision and scope of CPBD. It is an exciting time.

14. ANNEXES

Annex 1	Activity Timeline
Annex 2	Workshop and Research Participants
Annex 3	Interview Guide for Farmers
	Interview Guide for Traders
	Interview Guide for Marketers
	Interview Guide for Processors
	Interview Guide for Transporters
Annex 4	Tabulation of Field Interviews
Annex 5	Survey for Buyers
	Survey for Tool Suppliers
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Annex 6	Tabulation of BDS Providers
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ANNEX I: Activity Timeline

BDS Consultant Work Schedule

APRIL		
Dates		
4 days		Preparation for 4 day training & field work kits
23-24		Travel to Liberia
25		Photocopy material for the 4 day training for 28 students
26 AM		Meeting with staff/personnel – go over training, # of participants, who will co-facilitate, schedule, which 10 villages we will do the field work in over two work sessions, & logistics – what is needed in training, transportation to villages
26 PM		Finish preparing the training materials, visit the training venue
27- 30	Classroom	4 day Training with 28 participants
MAY		
1	Mary	Put curriculum together to leave behind for Mercy Corps
2	Team	Work with team of 12 to refine subsector interview guides
3-4	Team	Field work with participants: interviews with cowpea and processed cassava product subsector actors in 8 villages
4	Mary & Sam	Prepare tabulation spreadsheets
5	Team	Tabulate SS/VC; Identify subsector constraints
6	Team	Identify solutions and potential BDS providers
7	Mary	Clean data and prepare for next week
9	Team	Develop interview guides for potential buyers, input suppliers, equipment suppliers and experts with IPM and storage
10	Team	<ul style="list-style-type: none"> • AM finish interview guides in conference room • PM go out in pairs to interview
11	Team	<ul style="list-style-type: none"> • Finish interviews in Monrovia • Begin processing data with team
12	Team	<ul style="list-style-type: none"> • Finish processing data in conference room • Start to prepare the material for validation workshops with the communities
13	Team	AM- Prepare validation workshop poster presentation PM- Train team in how to deliver validation workshop
14	Mary	Clean data from BDS provider surveys
16	Team	Validation Workshops in Sangaita, Bensonville, Jackson Farm
17	Team-AM Mary -PM	Validation workshop in Wennestown Begin writing strategy -
18-20	Mary	Write report
21	Mary	Prepare workshop for Team on going forward with communities
23	Mary	Deliver workshop to Team at AGRHA Clarification meeting with Denise, Sam and Emmanuel
24	Mary	Incorporate feedback from Clarification Meeting Finish editing, formatting and print out full report and annexes
25	Mary	Handover report SMT meeting to discuss strategy Leave Liberia in the PM

Annex 2: Workshop and Research Participants

**BDS Workshop – A Subsector/Value Chain Approach
APRIL 27-30, 2005**

Participant name	Institution	Position
Dee-Maxwell S. Kamayan, Sr.	AGRHA (Action for Greater Harvest)	Executive Director
James Massaquoi	G-BAG (The Grand Bassa Agriculture Group)	Agricultural Economic Development Officer (AEDO)
Napolean Gbleegar	G-BAG	AEDO
Joseph S. Vambo	G-BAG	AEDO
David W. Kpogbah	G-BAG	AEDO
Thomatta E. Carr	Mercy Corps (MC)	Adm. Assistant
Jerry S. Fumbah	MC	Project Officer
Stephen F. Parker	MC	Ag. Extension Officer
Jonathon B. Boiboi	MC	Program Officer
Joefred A. Massaquoi	PNO (Project New Outlook)	AEDO
Jacob Aryee	PNO	AEDO
Alfred D.G. Gray	PNO	AEDO
Rev. Benjamin B.M. Bangura	PNO	AEDO

**BDS Workshop – A Subsector/Value Chain Approach
April 27-30, 2005
&
Subsector/Value Chain And BDS Supplier Research Team**

Participant name	Institution	Position
Zowolo Seepo	AGRHA	Project Officer
Eddie M. Giddings	AGRHA	Business Services Development Officer (BSDO)
Cecelia Nimely	AGRHA	BSDO
A. Fayia Leebor	AGRHA	AEDO
Luopu Mtamba	AGRHA	Adm. Assistant
James Y. Karvee	AGRHA	AEDO
Avenzo Z Mulbah	AGHRA	Finance Manager
Joseph T. Kpaina, Jr.	AGHRA	AEDO
Jenneh N. Toe	AGHRA	BSDO
Emmanuel T. Wulue	MOA (Ministry of Agriculture)	Technician
Beatrice Togba	PNO	Project Officer
Dorris Bundoo	PNO	AEDO
Lawrence Yeleikai	PNO	

Annex 3: Interview Guides

SURVEY FOR SMALLHOLDER FARMERS

Introduction:

Hello, my name is _____ and I work with Diompilor and we are trying to get information on the production and movement of Cassava from the Farmer to the final consumer, you as a **Farmer** are an important part of this process. Would you have 20 minutes to answer some questions for this study? If now is not a good time, when would it be best for me to come back?

CONTACT INFORMATION

Interviewer Name:		
Date of interview		
Farmer's Name:		
Product Grown	Cow peas	
	Cassava	
Village		
Address		

Production

1. Do you grow cassava or cowpeas?

Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

2. Do you grow enough to sell?

Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

3. If no, why not? (check off)

No irrigation	<input type="checkbox"/>	Labour	<input type="checkbox"/>
No money for inputs	<input type="checkbox"/>	No place to sell surplus	<input type="checkbox"/>
Problem with preservation	<input type="checkbox"/>	other	<input type="checkbox"/>
Not enough land	<input type="checkbox"/>		<input type="checkbox"/>

4. How many bags of cow peas/cassava do you produce? Please check off

1-2	<input type="checkbox"/>	3-5	<input type="checkbox"/>	6-10	<input type="checkbox"/>
11-15	<input type="checkbox"/>	16-20	<input type="checkbox"/>	21-25	<input type="checkbox"/>

EQUIPMENT & INPUT SUPPLIES

5. What kind of tools do you use on your farm and do you own them or borrow them? Check off as they talk.

	Own	borrow		Own	Borrow
Hoe	<input type="checkbox"/>	<input type="checkbox"/>	cutlass	<input type="checkbox"/>	<input type="checkbox"/>
rake	<input type="checkbox"/>	<input type="checkbox"/>	Axe	<input type="checkbox"/>	<input type="checkbox"/>

Wheelbarrow			Hatchet		
Shovel			Knife		
Digger			pingaline		
Other:			Other:		

6. Where do you buy your inputs? Check off as respondent talks.

	Market	Kiosk	Agro-input store	Farmers association	Neighbour
Fertilizer					
Pesticides					
Seeds					
insecticide					

7. How do you think you can improve your harvest? (Check off)

Better seeds	
Better fertilizer	
Better cassava cuttings	
One variety of cassava	
Money to buy tools	
Other:	

8. If you grow cowpeas, how many times a year do you plant it?

1		2	
---	--	---	--

9. Do you have access to irrigation during the dry season?

yes		No	
-----	--	----	--

SALES

10. Who do you sell your products to? (Check the right one)

	Broker	Agent	Market	Kiosk/mini store	Housewives	Restaurants
CASSAVA						
Cassava leaves						
Cassava root						
Fufu						
Gari						
Drpper/Cassava flour						
COWPEAS						
Dry Cowpeas						

11. Do you sell retail or wholesale? How much do you sell it for?

WHOLE SALE in Bags					
Product	Price Range in LD\$ (Circle the price range)				
CASSAVA					
Gari	600-650	651-700	701-750	751-800	801-850
Fufu	175-185	186-200	201-225	226-250	251-
Drpper-Cassava Flour	150-175	176-200	201-225	225-250	250
Cassava leaves	2 for 5 3 for 10	2 for 7 3 for 12	2 for 10 3 for 15		
Cassava root	250 – 275	276-300	301-325	326-350	351-375

COWPEAS					
Dry Cowpeas	1500-1600	1601-1700	1701-1800	1801-1900	1901-2000

RETAIL				
Product	Price Range in LD\$ (Circle the price range)			
CASSAVA				
Gari - cup	5 -6	7-8	9-10	
Fufu - ball	5 -6	7-8	9-10	
Drpper/cassava flour cup	5 -6	7-8	9-10	
Cassava leaves-bundles	5 -6	7-8	9-10	
Ground cassava – cup	5-10	11-15	16-20	21-25
Cassava root-pile	10 – 15	16-20	21-25	
COWPEAS				
Dry Cowpeas-cup	15-17	18-20	21-25	

12. What do you need to get more sales? (please check off as they talk)

Make farm bigger		Better processing equipment	
better transport		Group farming	
access to inputs		farm maintenance	
storage		Better farmer practice	
More customers		other	

TRANSPORTATION

13. How do you transport the cowpeas or cassava to your buyer and how much does it cost?

Transport	Cost	Transport	Cost
Car		Bus	
Wheelbarrow		Carry	
Make a way			

MEMBERSHIPS

14. Do you belong to a farmers association?

yes		No	
-----	--	----	--

15. If yes, how does the association help you?

Access to transport		Storage	
Get more customers		Tools	
Bulk buying of inputs		Help with farm labor	
Other:			

16. If you do not belong to a farmer's Asociación, would you like to join with other farmers in your village?

yes		No	
-----	--	----	--

ASSISTANCE

17. Who gives you information that helps you grow things better?

Radio		Neighbor/farmer	
Seed seller		School teacher	
Fertilizer seller		Health promoters	

Ag extension worker		other	
Pastor			

FARMER PROBLEMS

18. What are the problems you face to earning more money? (please check off)

Inadequate tools for farming		Transportation	
Poor quality processing equipment		Places to sell	
Pests – animals		Nobody to teach me	
Pests – insects		Access to credit to buy inputs/equipment	
Poor Storage		Other	

PROCESSING

19. Do you process your cassava/cowpeas?

Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

20. If yes, what do you do to process your product?

CASSAVA		COW PEAS	
dry		Dry	
Ground			
Pound			
Ferment			
Grate			
Package			

21. Do you sell what you process?

Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

22. If you do not sell, why not?

Do not process enough		No transport	
Bad equipment to process		No storage	
No place to sell		Pests	
Insects		other	

23. What tools or equipment do you use to fix the cowpeas /cassava for selling?

Grinder in market		Dryer	
Your own grinder		Pan	
Mat		Tub	
Fanner		Market Bag	
Wooden spoon		Farina pot	
Mortal		other	
Oven			

24. Where do you get your processing equipment or materials from?

Neighbor		Marketplace	
Stockists		Association	
NGO		Church	
Other			

Thank you very much for your time.

SURVEY FOR TRADERS

Introduction:

Hello, my name is _____ and I work with Diompilor and we are trying to get information on the production and movement of Cassava from the Farmer to the final consumer, you as a **Trader/Broker** are an important part of this process. Would you have 20 minutes to answer some questions for this study? If now is not a good time, when would it be best for me to come back?

CONTACT INFORMATION

Interviewer Name:	
Date of interview	
Trader's Name:	
Products Traded	Cowpeas
	Cassava
	Gari
	Fufu
	Drpper/Cassava Flour
Village where Trader Sells	
Village the Trader lives	
Address	

SUPPLIERS

1. From whom do you buy your cowpeas/cassava?
 - a. Individual farmers
 - b. Group farmers
 - c. Organizations
 - d. At the market

2. Do you usually buy from the same supplier/s?

Yes		No	
-----	--	----	--

3. Why do you not buy from the same supplier/s?

Adequate supply		Lack of trust	
Quality		No relationship	
price		other	

4. What is your relationship with your supplier?
 - a. Good
 - b. Fair
 - c. Poor
5. How do you buy your goods from your suppliers?

- a. Cash
- b. Sell and pay
- c. Barter system(Exchange)

6. What do you pay for cassava and/or cowpeas that you sell?

WHOLE SALE in Bags					
Product	Price Range in LD\$ (Circle the price range)				
CASSAVA					
Gari	600-650	651-700	701-750	751-800	801-850
Fufu	175-185	186-200	201-225	226-250	251-
Drpper-Cassava Flour	150-175	176-200	201-225	225-250	250
Cassava leaves	2 for 5 3 for 10	2 for 7 3 for 12	2 for 10 3 for 15		
Cassava root	250 – 275	276-300	301-325	326-350	351-375
COWPEAS					
Dry Cowpeas	1500-1600	1601-1700	1701-1800	1801-1900	1901-2000

SALES

7. Where do you sell your Cowpea/cassava?

- a. Local market /community
- b. Supermarket in Monrovia
- c. General Market
- d. Others(Please specify) _____

8. How do you sell your cowpea/cassava?

- a. Retail
- b. Wholesale
- c. Retail and wholesale

9. Do you sell to the same customers all the time?

Yes		no	
-----	--	----	--

10. If not why?

Higher price		Don't have enough/low quantity	
Poor quality		Customer dissatisfaction	

11. What is your relationship with your buyers?

- a. Good
- b. Fair
- c. Poor

12. How much do you pay some time per bag to take your cowpeas/Cassava to the market (LD)?

- a. \$25.00
- b. \$50.00
- c. \$ 75.00
- d. \$100.00

13. How much do you sell cowpea/cassava per bag(LD)?

Product	Price				
CASSAVA					
Gari	800 – 850	851-900	900-951	952-1000	
Fufu	250-275	276-300	301-325	326-350	
Drpper-Cassava Flour	300-325	326-350	351-375	376-400	
Cassava leaves	2 for 10 3 for 15				
Cassava root	350-375	376-400	401-425	426-450	451-500
COWPEAS					
Dry Cowpeas	2000-2100	2101-2200	2201-2300	2301-2400	2401-2500

TRANSPORTATION

14. How do you get your cowpea/cassava from where you buy your supplies to the market?
- Car
 - Wheelbarrow
 - On head/haulage
 - Others(Please specify) _____

PROBLEMS

15. What are the major problems you face in buying from the farmers?
- Poorly processed seeds
 - Unstable market prices
 - Access problem [producers / Growers are scattered]
16. What are the problems you face during sales at the market?
- Registration
 - Storage
 - Rent
17. What are some of the problems you have with your business in trading cassava and/or cowpeas?

Lack of Transport		Storage	
Poor quality tarps/ no ropes		Open market	
Insufficient capital to buy supplies		Pests	
Insecurity		High competition/ market saturation	
Theft		Finding cassava/cowpeas	
Problems at home		Quality of supplies	
		Price	

PROCESSING

25. Do you process cassava?

Yes		No	
-----	--	----	--

26. If yes, what do you do to process cassava?

CASSAVA	
dry	

Ground	
Pound	
Ferment	
Grate	
Package	

27. Do you sell what you process?

Yes		No	
-----	--	----	--

28. If you do not sell, why not?

Do not process enough		No transport	
Bad equipment to process		No storage	
No place to sell		Pests	
Insects		other	

29. What tools or equipment do you use to process cassava for selling?

Grinder in market			
Your own grinder		Pan	
Mat		Tub	
Fanner		Market Bag	
Wooden spoon		Farina pot	
Mortal		other	
Oven			

30. Where do you get your processing equipment or materials from?

Neighbor		Marketplace	
Stockists		Association	
NGO		Church	
Other			

Thank you very much for your time.

SURVEY FOR MARKETERS AND SHOP OWNERS

Introduction:

Hello, my name is _____ and I work with Diompilor and we are trying to get information on the production and movement of Cassava from the Farmer to the final consumer, you as a **Marketer/shop owner** are an important part of this process. Would you have 20 minutes to answer some questions for this study? If now is not a good time, when would it be best for me to come back?

CONTACT INFORMATION

Interviewer Name:	
Date of interview	
Retailer's Name:	
Shop name	
Market where they sell	
Length of time in business	
Cassava or Cowpeas	
Village	
Address	

SUPPLIES

1. What do you sell? (please circle)
 - a. Cassava
 - b. cowpea
 - c. Others(Please specify) _____

2. How often do you buy supplies?
 - a. daily
 - b. weekly
 - c. When goods are available

3. Who do you buy your supplies from?

Growers		Marketers	
traders		Monrovia Red Light Market	
Importers			

4. How many bags do you buy a week to sell?

	1-2 bags	3-4 bags	5-6 bags	7-8 bags	9-10 bags	11-12 bags
Cassava						
Cowpeas						

5. How do you pay for the goods?

Cash		Credit		Barter system	
------	--	--------	--	---------------	--

6. Do your ever join with other persons to buy the goods?

yes		no	
-----	--	----	--

7. If yes, who do you buy with?

Friends		Relatives		Business Partner	
---------	--	-----------	--	------------------	--

SELLING

8. Who are your regular customers? (circle)

- a. Individuals
- b. Groups
- c. Organizations

9. How many bags do you sell a week?

1-2		3-4		5-6		7-8	
9-10		10-11		12-13		14-15	

10. What do you do with your extra money?

Put in bank		Improve their home	
Su su club		Pay school fees	
Credit club		Feasts	
Buy more supplies		Initiations	
		other	

PROBLEMS

4. What are the problems you have with your business?

Transportation		Quantity	
Price		Competition	
marketers		Financing	
quality		Unstable price	
Selling permit		Damaged goods	
Storage		Brokers fee/commission	

PROCESSING

31. Do you process your cassava/cowpeas?

Yes		No	
-----	--	----	--

32. If yes, what do you do to process your product?

CASSAVA		COW PEAS	
dry		Dry	
Ground			
Pound			
Ferment			
Grate			
Package			

33. Do you sell what you process?

Yes		No	
-----	--	----	--

34. If you do not sell, why not?

Do not process enough		No transport	
-----------------------	--	--------------	--

Bad equipment to process		No storage	
No place to sell		Pests	
Insects		other	

35. What tools or equipment do you use to fix the cowpeas /cassava for selling?

Grinder in market		Dryer	
Your own grinder		Pan	
Mat		Tub	
Fanner		Market Bag	
Wooden spoon		Farina pot	
Mortal		other	
Oven			

36. Where do you get your processing equipment or materials from?

Neighbor		Marketplace	
Stockists		Association	
NGO		Church	
Other			

Thank you very much for your time.

SURVEY FOR PROCESSORS IN THE MARKET

Introduction:

Hello, my name is _____ and I work with Diompilor and we are trying to get information on the production and movement of Cassava from the Farmer to the final consumer, you as a **Processor** are an important part of this process. Would you have 20 minutes to answer some questions for this study? If now is not a good time, when would it be best for me to come back?

CONTACT INFORMATION

Interviewer Name:	
Date of interview	
Processor's Name:	
Cassava or Cowpeas	
Village	
Address	

PRODUCTION PROCESS

1. How do you process cassava? (please check off)

CASSAVA	
Dry	<input type="checkbox"/>
Ground	<input type="checkbox"/>
Pound	<input type="checkbox"/>
Ferment	<input type="checkbox"/>
Grate	<input type="checkbox"/>
Package	<input type="checkbox"/>

2. Do you sell what you process?

Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

3. If you do not sell, why not?

Do not process enough	<input type="checkbox"/>	No transport	<input type="checkbox"/>
Bad equipment to process	<input type="checkbox"/>	No storage	<input type="checkbox"/>
No place to sell	<input type="checkbox"/>	Pests	<input type="checkbox"/>
Insects	<input type="checkbox"/>	other	<input type="checkbox"/>
	<input type="checkbox"/>		<input type="checkbox"/>

4. What tools or equipment do you use to process?

5.

Grinder you rent	<input type="checkbox"/>
Your own grinder	<input type="checkbox"/>

6. Where do you get the cassava to process?

CASSAVA

Grows it	
From neighbor	
Farmers	
From Broker/Agent	
other	

7. What problems do you have in getting your supplies?

Lack of transportation		No surplus that farmers sell	
Far away		High cost	
Few suppliers		No credit	
Getting supplies on time		other	

8. What do you charge for processing cassava?

	<i>Please fill in a range as I do not know what would be cost to process in the market</i>					
	LD\$	LD\$	LD\$	LD\$	LD\$	LD\$
1 bag of cassava root						
1 bag of dried cassava leaves						

Thank you very much for your time.

TRANSPORTER SURVEY

Introduction:

Hello, my name is _____ and I work with Diompilor and we are trying to get information on the production and movement of Cassava from the Farmer to the final consumer, you as a **Transporter** are an important part of this process. Would you have 20 minutes to answer some questions for this study? If now is not a good time, when would it be best for me to come back?

CONTACT INFORMATION

Interviewer Name:		
Date of interview		
Transporter's Name:		
Cassava or Cowpeas		
Type of Transportation	Car	
	Truck	
	Pick up	
	Other	
Village		
Address		

1. Do you carry people with cowpeas or cassava in your car ?

- A. Farmers
- B. Traders
- C. Brokers

2. How much do you charge your passengers and goods per trip ?

CASSAVA	L\$ per bag	COWPEAS	L\$ per Bag
Cassava Leaves		Fresh	
Roots		Dried	
Gari			
Fufu			
Drpper/cassava flour			

3. How often do you carry people and goods from this location ?

- Daily
- Weekly
- Monthly

4. What is the average distance you carry passengers with cassava or cowpeas?

1-2 km		3-4 km		5-6 km	
--------	--	--------	--	--------	--

--	--	--	--	--	--

5. What are some of the problems you are sometimes faced with ?
- A. Bad road conditions
 - B. Vehicle breakdown
 - C. Passengers refusal to pay
 - D. Others

6. How many bags of cassava or cow peas can your vehicle carry?

1-2	3-4	5-6	7-8	9-10	10-11
12-13	14-15	16-17	18-19	20-21	21>

7. How long have you been driving on this road ?
- A. Less than a year
 - B. Two years
 - C. Three or more years
8. How many other cars transport people and goods on this road ?
- A. 2-5
 - B. 5-10
 - C. 10 and above

Thank you very much for your time!

Annex 4: Tabulation of Field Interviews

See File

Annex 5: Surveys

Buyers Surveys

1. Would you be interested in buying cassava products or cow peas?

	Check off if yes
Gari	
Drpper/cassava flour	
Farina	
Fufu	
cowpeas	

2. Are you willing to buy locally produced and processed cassava and cowpea products?

3. If yes, how much are you willing to pay?

	Price L\$	Price US\$	Per bag	Per kilo
Gari				
Drpper/cassava flour				
Farina				
Fufu				

4. What are your terms of payment?

5. Cassava is harvested and processed in January. What quantity would you purchase of.....

	Bags	kilo
Gari		
Drpper/cassava flour		
Farina		
Fufu		

6. Would you like to buy all at once or in several batches over the month of February?

7. What standards do you want?

Quantity per package		
Taste		
Organic/inorganic		

8. To ensure quality, how do you exercise quality control with your suppliers?
9. Can you transport products from collection points?
10. If yes, how do you charge for transport to your suppliers?
11. What sort of packaging do you want?
12. Can you assist with the packaging?
13. Do you require contract agreements with your suppliers?

For Business Associations only:

14. As a means to meet standards and to reach the farmers in how standards should be met, would you be interested in paying for advertisement for a radio show that teaches about good farming practices?

Tool Manufacturers and Suppliers (harvesting, planting and hand tools)

1. What sort of farm tools for small farmers do you sell? And what are the brands
2. Do you sell in bulk or retail?

	What make	Retail price	Bulk price for how many
Hoes			
Cutlass			
Files			
Shovel			
Pingaling			
Diggers			
Axe			
Nylon Twine			
Tibline			

3. What number of tools are bought before you give a discount?

4. What kind of machines do you sell?

	Price	Guarantees	How long
Power Tiller			
Seed drilling machine			

4. Do you have guarantees for your machines?

5. If yes, for how long?

6. Where do the spare parts come from?
7. How long does it take to get spare parts?
8. Do you have mechanics that fix the machines on site?
9. How do you distribute your goods?
10. Where are the outlets located?

Monrovia	Outside Monrovia

Survey for Cowpea Seed Suppliers

1. Do you sell cow pea seeds?

2. To whom do you sell your cow peas?

3. How much do you sell cow pea seeds for?

Quantity – (if bag, put the weight)	price

4. What is the smallest quantity of the unit you sell the cow peas for?

5. Where are your outlets located in Liberia?

Monrovia	Outside of Monrovia

6. What variety of cowpeas do you have and what sort of quality is each variety, price and the quantity it is sold in?

Variety	quality	Quantity	price
Beech			
Light green			
Black			
Pink/Maroon			

7. What is the difference between each variety?

Resistance against pests				
Yield				
Duration – how long it takes to grow from planting to maturity				
Is it chemically treated				

Survey for Transporters

1. What is your capacity to carry?
2. What is the minimum distance you will go to pick up product?
3. What do you charge per bag?
4. What is the minimum quantity of bags that you will fetch and carry?

	Minimum # of bags	Price they'd charge per bag
#3 district in Grand Bassa		
Wohan in Margibi country		
Koon Town Montwerrado		

5. How much do you charge in the rainy season?
6. How much do you charge in the dry season?
7. Are your drivers and trucks insured?
8. Are you registered and have the proper documentation?
9. What kind of tarps do you have?
10. In your company who is responsible when the vehicle breaks down and the product goes bad?

Sender	
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driver	
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11. If the product is damaged while in transit, how does your company compensate?

Research on Storage Facilities

1. What sort of storage facility would be good for cow peas?

2. What sort of storage facility would be good for cassava products?

Cassava root	
Fufu	
Gari	
Drpper/cassava flour	

3. What sort of local materials do we need to build the storage?

4. What sort of imported materials do we need to build the storage?

5. Could your organization provide expertise in how to build to the ag extension workers?

6. What size of storage would be appropriate for the following number of bags?

	350	400	450	500	550
Cassava root					
Fufu					
Gari					
Drpper/cassava flour					

7. What are the methods for preservation of processed products while they are waiting for transportation?

8. What are the methods for preservation of cowpea seeds?

9. What are the methods for preservation of cassava cuttings?

Annex 6: Tabulation of BDS Providers

See File.

Annex 7: List of BDS Suppliers Contacted

BDS PROVIDERS INTERVIEWED IN MONROVIA

Seed Suppliers	Contact Person
Anarco, Redlight District	Doris Tokpah
Guinea Warehouse, Redlight	Mercemeh Sheriff; Fatta Sheriff Mr. Korlubah Sumo Gbokai
Kissi Warehouse, Redlight	Mr. Washington Jorbor, Manager
Lofa Warehouse, Redlight District	Trader-Alice Suah
Hand Tool Suppliers	Contact Person
Wazni Trading Company	Hassan Wazni - General Manager
Sethi Brothers	P.K Sethi
Building Materials Center	Mr. Mohammad Kobkissi
Jeety Corporation	
Trucking Companies	Contact person
Liberia United Trucking Services Inc. Freeport	Mr. Mohammad B. Kromah cell # 513-655 or 512-801
Jack Gbassana Transport Services, Neezo 72nd, Paynesville	Morris Corneh & Jack Gbassana
Morris Trucking Services Vai Town Truck Parking - Bushrod Island	Morris Kromah
Bando's Transport Services Gorbacku Field Redlight	Adama Kromah

POTENTIAL COWPEA BUYERS IN MONROVIA

Company Name	Contact Person	Product they are Buying
Bridgeway		not interested
A-Z		not interested
Supermarket - Monoprix	Simon	cucumbers & corn
Supermarket - Stop & Save	Wudaih	watermelon
Fulani Business Association	Mohammad Bailo Sow 06-557-268; also owner of Fouta	gari & cowpeas
Karbeh Warehouse	Karbeh Singbeh Karbeh Ballah	cowpeas
Gobacha Warehouse Redlight District, Paynesville	Annie Dehpah	fufu
Diamond Warehouse, Ghorbachev Market, Paynesville	Manager of Diamond Warehouse, Mr. Jackson Lakpor	gari/farina
Hawa Business Center, Duala Market		gari, fufu, cassava flour
Sherriff Warehouse, Duala Market		gari, fufu, cassava flour

Annex 8: Activity Calendar Planning Meeting Outline

Activity Plan Meeting with Farmers

Materials needed to facilitate the meeting:

- 1 calculator
- 1 pen
- 1 notepad
- Flipchart/picture of calendar

June	July	August	September

- Reference sheet with tool costs, seed costs, transportation costs

1. Introduction

- Welcome and thank farmers for coming together
- Ask them for their names and record this on a paper
- Go over the purpose of the meeting: to develop an activity plan so that they will be ready to plant cowpeas
- Review some of the constraints and solutions and the reason that they are getting together to develop a plan – go over pictures
- During meeting they will select a leader of the farmers group and develop an activity plan

2. Selecting a Leader

- Brainstorm what are the characteristics of a good leader: good character, respected by everyone, can run a meeting, is not single
- Have pictures ready of the characteristics
- Ask: “Who has these characteristics amongst you?”
- Vote for the individual

3. Making an Activity Plan

- Facilitator asks: How much land does each farmer want to plant? Each farmer announces what they want to plant and puts one stone down for each ½ acre they want to plant. (if they want to plant 1 acre they put two stones, 1.5 acres – 3 stones, etc.) As a facilitator – beside each farmer's name put down how much land they are committing to cultivate of cowpeas
- Facilitator asks: If the group wants to plant by October, what are the things that need to be done by September? Ask them to pick the pictures out from the constraints. When they have picked out the pictures, then ask them to put the pictures in order:
 - Buy tools
 - Make farm bigger
 - Buy seeds
 - Contact buyers
 - Contract transport company

- Facilitator asks: “When will we do all these things?”
 - Ask the farmers to put the pictures of the activities in the month that it should be done
- Facilitator asks: “How can we pay for these things?” – putting small small money together – ask someone to pick out the picture of the savings group
- Facilitator asks: “how much can each person save a week?” Farmers can put down the number of stones that represents LD\$1.00 for each stone. This can then be counted together.
- Facilitator asks: “How many weeks in each month?” – 4- how much can we save in a month?- Facilitator multiplies number of stones by 4 and this is the amount in a month

Buying Tools

- Facilitator asks: “what tools do you want to buy? And how many?”
- Facilitator then uses calculator to go over how much each tool costs – draw picture on sheet of paper of tool and amount of the individual tool and write the total amount for the number they want to buy

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Buying Seeds

- Facilitator has pictures of amount of seeds needed with cost for .5, 1, 1.5, 2 and 2.5 acres
- How much seeds do we need to buy? – quantify amount in relation to the land being cultivated
- Calculate the amount and write on a paper – total kilograms and price

Preparing the land

- Facilitator asks: When do we start to prepare the land?
- Who will help each other?

Facilitator needs to record all this and then hand over to the leader as well as keep copy for themselves.

4. Closure

- Have farmers set next meeting
- Thank farmers again for coming
- Let them know when you will be back

Annex 9: BDS Test

Name: _____

You are the AEDO for a village called My town. There are 12 farmers who have formed a farmers group and they want to grow cowpeas. Each farmer has committed to cultivate a portion of their farm in cowpeas. You are facilitating a meeting to calculate how much seeds they need and how much they will earn.

Basic information:

Seed inputs	Per Acreage	Average yield in kilograms	Average Yield in # of 50 kg bags
20 kg	1.25 acres	200 kg	4
16 kg	1 acre	160 kg	3.20
12 kg	.75 acres	120 kg	2.40
8 kg	.5 acres	80 kg	1.6

1. Calculate the Total Number of acres the group will cultivate in cowpeas and the total amount of seeds they need. (2 points)

	# of acres	Amount of seeds in kg
3 want to plant 1.25 acres		
5 want to plant 1 acre		
2 want to plant .75 acres		
1 wants to plant .5 acres		
TOTAL # OF ACRES		
TOTAL AMOUNT IN KG		

2. If one 75 kg bag of Seeds cost LD\$4,500, how much does 1 kg of seeds cost? (1 point)
3. How much will the farmers group have to pay (in LD\$) for the seeds they need to buy for the whole group? (one point)
4. How much will the farmers earn if they sell their seeds and get \$4,100 per 50 kg bag? (1 point)

	Yield in kg	Yield in # of 50 kg bags Amount of seeds in kg	Total price in LD\$
3 want to plant 1.25 acres	600 kg		
5 want to plant 1 acre	800 kg		
2 want to plant .75 acres	140 kg		
1 wants to plant .5 acres	80 kg		
	TOTAL Earning		