

## Family Farming Program Farm Management and Record Keeping Handbook

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### **Abstract**

*Let me assume that approximately 70-75 percent of the Liberian workforce is involved in agriculture or agriculture-related activities. Many of these farmers lack basic business and loan management training, recordkeeping skills, equipment, and market connections they need in order to grow their business.*

*For farmers working in subsistence agriculture, it can be difficult to access credit to purchase farm equipment. To bridge this gap, commitment is needed on the part of project staff working as Agricultural marketing officer to offer basic business and loan management training, recordkeeping and equipment skills to rural smallholder farmers with the opportunity to build their businesses. This will help to improve the creditworthiness of potential borrowers in the agriculture sector; become more attractive to lenders/financial institutions.*

*Farmers can then use the credit to purchase assets such as seeds, farming equipment or irrigation systems that will help generate income, boosting livelihoods and eventually enabling them to pay back loans.*

*Access to financial services enables rural smallholder farmers to take the increase from subsistence farming to market-based farming, thereby increasing their productivity and income for the long term. Access to financial services can also provide farmers with tools to escape the cycle of poverty and earn a sustainable livelihood.*

*The article will assist agribusiness enterprises acquire planning and business skills so as to be fully commercial, and achieve higher profits and competitiveness.*

**Keywords:** *Agribusiness, Enterprises, Management & Records.*

### **Introduction**

This note is intended to provide training on access financial services by smallholder farming households. This information on agribusiness and financial practices is to be used to advice smallholder vegetable farmers apply it to their farming activities before offering them opportunity to apply for a loan from MFIs. The manual focuses on building farmers' business management knowledge and skills in record keeping, planning, risk management, market analysis, and contract management. These skills will help farmers understand the impact that improved management, diversification, and market selection can have on their farm incomes. The manual was not developed to replace existing training materials, but to complement them by addressing gender disparities in the management of agribusiness enterprises.

### **Methods**

#### **Description of the site**

The research work solely in Bong County, Central region of Liberia. Specifically, in Bellemu, Panta District, Bong County, Liberia. Panta District is situated near the Guinea Border with Liberia and between Zota District and Kpaai District in Bong County.

#### **Description of the experiments done**

The researcher was focused on providing training note on access financial services by smallholder farming households. This information on agribusiness and financial practices is to be used to advice smallholder vegetable farmers apply it to their farming activities before offering them opportunity to apply for a loan from MFIs and how to improve their business.

## Description of the laboratory methods

The researcher conducted the majority of the fieldwork during visits to Bong County to interview some farmers that are benefiting this SHOPS-I project. Some interviews were also done by phone after returning from the field.

### Limitation

The limitations of this study were financial constraints, limited material resources, transportation services, and difficulties faced by the researcher to obtain information from some local farmers.

### Results

Farmers can then use the credit to purchase assets such as seeds, farming equipment or irrigation systems that will help generate income, boosting livelihoods and eventually enabling them to pay back loans.

Access to financial services enables rural smallholder farmers to take the increase from subsistence farming to market-based farming, thereby increasing their productivity and income for the long term. Access to financial services can also provide farmers with tools to escape the cycle of poverty and earn a sustainable livelihood.

The article will assist agribusiness enterprises acquire planning and business skills so as to be fully commercial, and achieve higher profits and competitiveness.

## Discussion

### Farm management

**Farm management** involves making decisions regarding what crops and livestock to grow based on available resources in an effort to maximize profit.

### Farming resources

Farming resources include the following:

#### Capital

**Capital** is all the money and assets the owner dedicates specifically for investment in the farming business.

An **asset** is everything owned by or owed to a business that has cash value, such as: buildings, seeds, tools, equipment, land, vehicles, livestock, and cash

#### Labor

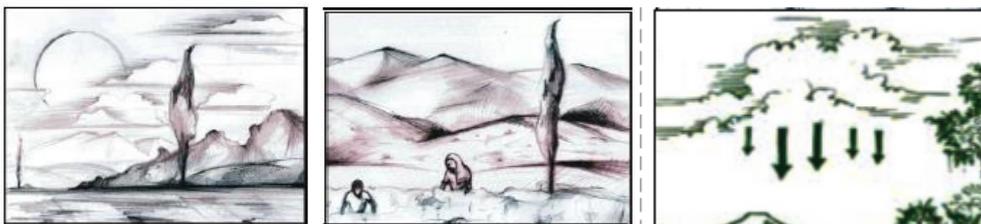
Work completed by individuals or a group to assist in the growth of crops or livestock. Payment for labor can be made based on an hourly wage, daily wage, or after completing a specific task within a certain area such as harvesting 1 ha of cabbage. (1 ha = 1 hectare = 10,000 m<sup>2</sup>) Labor includes the efforts of the farmer himself, other family members and people hired outside the family.

#### Natural resources

Nature and the environment impact decision making for farmers when determining which crops to grow or livestock to raise.

#### Climate

consists of the following three categories:



**Figure 1.** Natural Resources (Sun, Altitude, Water & Land)

**Sun**

Each species of plant has different needs; some require exposure to the sun, while others require only a limited amount of sun.

**Altitude**

Altitude affects the temperature, amount of sunlight, and humidity of crops and livestock.

**Water**

Water availability has a major effect on the survival of plants. One of the key factors of regional water availability is rainfall.

**Land**



**Figure 1**

Area where plants grow; a provider of nutrients and water resources for plants and animals. Soil content is relevant for rich yields of fruit and vegetables. In addition, some land may be inappropriate for certain livestock or crops. For example, a dry climate with little water

**Technology**

Technology is the use of more efficient knowledge, methods, tools, and equipment to increase productivity and revenue.

<p><b>Figure 2. Technology decisions</b></p>		
<p><b>Manual Labor using simple tools such as a hoe</b></p> <ul style="list-style-type: none"> <li>• Requires many hours of labour (200 hours per ha)</li> <li>• Long processing time for planting and harvesting</li> <li>• Procurement costs of hand tools such as hoes are usually low,</li> </ul>	<p><b>Mechanized labor using a tractor</b></p> <ul style="list-style-type: none"> <li>• Less labour intensive (only 10 hours per ha)</li> <li>• Short processing time for planting and harvesting</li> <li>• Up-front equipment costs are high, though the total</li> </ul>	

however the production cost increases	production costs per ha are less expensive	
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**Farmer groups or farmer associations**

A collection of farmers working together for a specific purpose or towards a specific goal, such as learning new management practices, improving technology, receiving higher prices for produce, or finding a new market.

**Farm Bookkeeping**

**Accounting**

Accounting is the process by which financial information about a business is recorded, classified, summarized, analyzed, and interpreted.

**Assets**

Assets are everything owned by or owed to a business that has cash value.

- Buildings
- Equipment
- Livestock

**Liabilities**

Liabilities are the amount owed by a business that needs to be paid to creditors such as laborers, seed suppliers, fertilizer suppliers, transportation, and taxes.

It is very important to make a distinction between personal and business assets and liabilities. For instance, appliances and items for domestic use such as a television, bed, carpet, or a table are personal assets, while agricultural land, a storage shed, and farm equipment such as a tractor or plow are considered business assets. The debt to be paid to seed and fertilizer suppliers noted above is a business liability, and school fees for children or money owed for a wedding are personal liabilities.

**Examples of some typical farm business assets and liabilities**

ASSETS	LIABILITIES
Land	Payment for monthly land lease
Building	Interest payment on a loan from a bank or microfinance organization
Nursery house	Telephone bill for farming
Tools and equipment	Money owed to laborers who worked planting seeds
Cash	
Cash in a bank account	
Livestock	

**Owner’s equity**

Owner’s Equity is the amount of money or investment put into the farm (usually by its owners)

Assets – Liabilities = Owner’s Equity

All assets that belong to the farm minus all liabilities of the farm equal owner’s equity; in other words, the remaining amount after subtracting all of the liabilities from all of the assets.

**Costs**

Costs are all the expenses required to produce something expressed in money terms.

**Costs consist of fixed costs and variable costs**

### Fixed costs

Fixed costs are long-term costs that remain the same no matter how much product is produced or the length of the harvest period. They are not tied to the volume of production; if a farmer does not grow any crops on her land, she will still have fixed costs that need to be paid.

### Establishment cost

One of the major items under fixed costs is the establishment cost. This is the total of the costs to establish an orchard. The establishment cost is calculated by adding all the costs incurred by the farmer during the first few years until the trees start to produce fruits. In the table below the establishment cost of 1 ha of a pepper may include the following; knowing that cherries begin bearing an economic crop in the fourth year:

**Table 1.** Explaining the establishment cost of 1 ha of a pepper

<b>Descriptions</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Total</b>
Land Preparation	5,000	0	0	<b>5,000.00</b>
Plant of Trees	800	400	400	<b>1,600</b>
400 trees (1 tree in 5 X 5 meters)	4,000	2,500	2,500	<b>9000.00</b>
Weeding	2,000	2,500	2,500	<b>7,000</b>
Fertilizers	100	100	100	<b>300</b>
Pruning & Training:	1000	2000	3,000	<b>6,000</b>
Irrigation	16,000	16,000	0	<b>32,000</b>
Pest and disease Management inputs	0	300	300	<b>600.00</b>
Tractors and ATV	200	200	200	<b>600.00</b>
Land Rent	1,000	1,000	1,000	<b>3,000.00</b>
Building	1,000	1,000	1,000	<b>3,000.00</b>
Irrigation System	200	200	200	<b>600.00</b>
Tools and Equipment	1000	1000	1000	<b>3,000.00</b>
<b>Totals Liberian Dollars</b>	<b>32,000</b>	<b>25,200</b>	<b>12,200</b>	<b>71,700</b>

### Variable costs

Variable costs are short-term costs that are required only if crops or livestock are grown and change according to the amount produced. Variable costs can be allocated to individual crops or livestock. If more crops or new crops are grown, then additional purchases of seed, fertilizer, labor, and transportation costs are required so variable costs will increase.

**Table 2.** Explaining fixed costs and variable costs

<b>Fixed Costs</b>	<b>Variable Costs</b>
Land rent	Seed
Building rent	Fertilizer
Land taxes	Pest and disease management inputs
Irrigation fees	Family and non-family labor
Establishment Cost	Transportation
	Fuel for equipment and machines

It is important to remember that the cost of production is relative; in the example noted above a certain area of land is used, such as 1 hectare. Fixed costs (land rent, land tax, and irrigation fees) remain the same whether or not the entire hectare is farmed and regardless of what crop is planted. Variable costs change depending on the amount spent per ha or per kg more of output, assuming maximum yields cannot be increased by efficiencies or improved agriculture practices. For instance, if a farmer had extra land that was not planted and could potentially grow 2,000 kg of tomatoes, the fixed costs would remain the same, while the variable costs for more tomato seed, fertilizer, pest and disease management inputs, labor, and transportation of the harvest to market would increase.

### Revenue or sales

Revenue is the amount of money received from the sale of products or services.  
**Revenue = Volume of product x Price per unit**

Example

The total Grape harvest of Mr. Flomo is 18,000 kg and the selling price is L\$ 1,200 per kg. The total revenue received by Mr. Flomo is 18,000 kg X L\$1,200 per kg = L\$ 21,600,000

**Table 3.** Calculation of revenue for five crops

	<b>Rice per Year</b>	<b>Pepper per Year</b>	<b>Tomato per season*</b>	<b>Ground nut per season*</b>	<b>Cucumber per year*</b>
Land in hectares (ha)	1 ha	1 ha	1 ha	1 ha	1 ha
Production volume	15,000 kg	18,000 kg	30,000 kg	25,000 kg	20,000 kg
Price per kg in L\$	1,500	1,200	800	600	750
Revenue in L\$	22,500,000	21,600,000	24,000,000	15,000,000	15,000,000

\*please note that a season does not mean a complete year: planting and harvesting time depend on the type of crop.

### Break-even point

#### Break-even price

**Break-even Price** is the product price needed to cover all costs at a given production level where there is no profit or loss.

**Break-even Price = Estimated Total Cost of Production (Fixed and Variable Costs) / Estimated Total Quantity of Production**

#### Cost and quantity of rice

<b>Description</b>	<b>Cost in L\$</b>
• Land rent	2,000,000
• Seed	1,250,000
• Manure	80,000
• Fertilizer	800,000
• Pest and disease management inputs	80,000
• Tools and equipment	100,000
• Labors	1,100,000
• Transportation	250,000
• Tax	100,000
<b>Estimated Total Cost</b>	<b>5,860,000</b>
<b>Estimated Total Quantity of Production</b>	<b>20,000 kg</b>

Based on the example above: Break-even = 5,860,000 / 20,000 kg = L\$ 293 per kg.

If the farmer sells all of his rice at a price of L\$ 293 per kg then he will have neither a profit nor loss (breakeven).

**Note:** It is important for farmers to use accurate prices and yields to determine realistic figures. The market prices are set and cannot be controlled by farmers; however, farmers need to realistically assess if they can reach the necessary production targets to breakeven based on recent prices paid for the crop, in this case cauliflower. If the farmer believes that she can produce 20,000 kg of rice the question is if L\$ 283 per kg is a realistic price? If the latest prices for rice are below L\$ 293 then he may suffer a loss when producing this crop.

\* Figures in the above calculation are only an example and may not reflect actual prices or volumes for rice.

## Break-even quantity

Break-even quantity provides information on the total yield required to cover all costs where there is no profit or loss.

$$\text{Break-even Quantity} = \frac{\text{Estimated Total Cost of Production (Fixed and Variable Costs)}}{\text{Estimated Product Price}}$$

**Table 4.** Cost and product price of rice

Description	Cost in L\$
• Land rent	2,000,000
• Seed	1,250,000
• Manure	80,000
• Fertilizer	800,000
• Pest and disease management inputs	80,000
• Tools and equipment	100,000
• Labors	1,100,000
• Transportation	250,000
• Tax	100,000
<b>Estimated Total Cost</b>	<b>5,860,000</b>
<b>Estimated Production Price per kg</b>	<b>275 L\$</b>

**Based on the example above: Break-even quantity = 5,860,000 / 275 per kg = 21,309 kg**

If the farmer produces cauliflower and sells the entire quantity of 21,309 kg for L\$ 275 per kg then he will not have either a profit or a loss (break-even).

If the farmer believes that he cannot produce 21,309 kg of rice based on a marker price of L\$ 275 per kg then he may want to reconsider which crop to grow or he may suffer a loss in producing rice.

\* Figures in the above calculation are only an example and may not reflect actual prices or volumes for rice.

## Conclusion

For farmers working in subsistence agriculture, it can be difficult to access credit to purchase farm equipment. To bridge this gap, commitment is needed on the part of project staff working as Agricultural marketing officer to offer basic business and loan management training, recordkeeping and equipment skills to rural smallholder farmers with the opportunity to build their businesses. This will help to improve the creditworthiness of potential borrowers in the agriculture sector; become more attractive to lenders/financial institutions.

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