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Module 1: Is Farming a Business?

What is a business?

First of all, there are 5 important things to know about a business:

1. Every business requires an initial and continuous **investment**.
2. Produces and uses both **goods** (food, fertilizer, etc.) and **services** (extension service, mobile phone services, etc.).
3. The objective of any business is to make and maximize sustainable **profits**.
4. The entrepreneur achieves this by satisfying what the **consumer** needs and wants.
5. The entrepreneur bears all **risks** of his/her business.

What examples of businesses do you know?

Example of business	Example of goods/service	How are profits made?	Risks
Construction business	Six unit classroom school block	The contractor tries to use cheap materials and labour. He/she is planning all activities way ahead.	Unavailability of materials or labour may delay completion. Rain may destroy materials.
Trade in mobile phones	Latest mobile phones; repair services	The trader buys the phones at wholesale prices and sells at competitive prices so that he/she sells more than the competitors.	The phones may not be sold in time and become out of fashion with consumers. Phones may also be faulty.
Processing of agricultural products	Fresh organic orange juice	With this new product (juice from certified organic fruits), the processor creates a niche market and receives a premium price.	Juice has a short shelf-life and may go bad quickly. Secondly, a spoilt fruit may reduce the taste of the juice.
Cropping	Production and sale of mangoes, chili pepper and maize	The farmer makes profits by planning the activities before the season; buying inputs ahead of time; using best agricultural practices and selling products when prices are high.	Drought or excess rains may affect yield, planting materials may be of poor quality. Prices may fall suddenly and food crops may go bad before use.

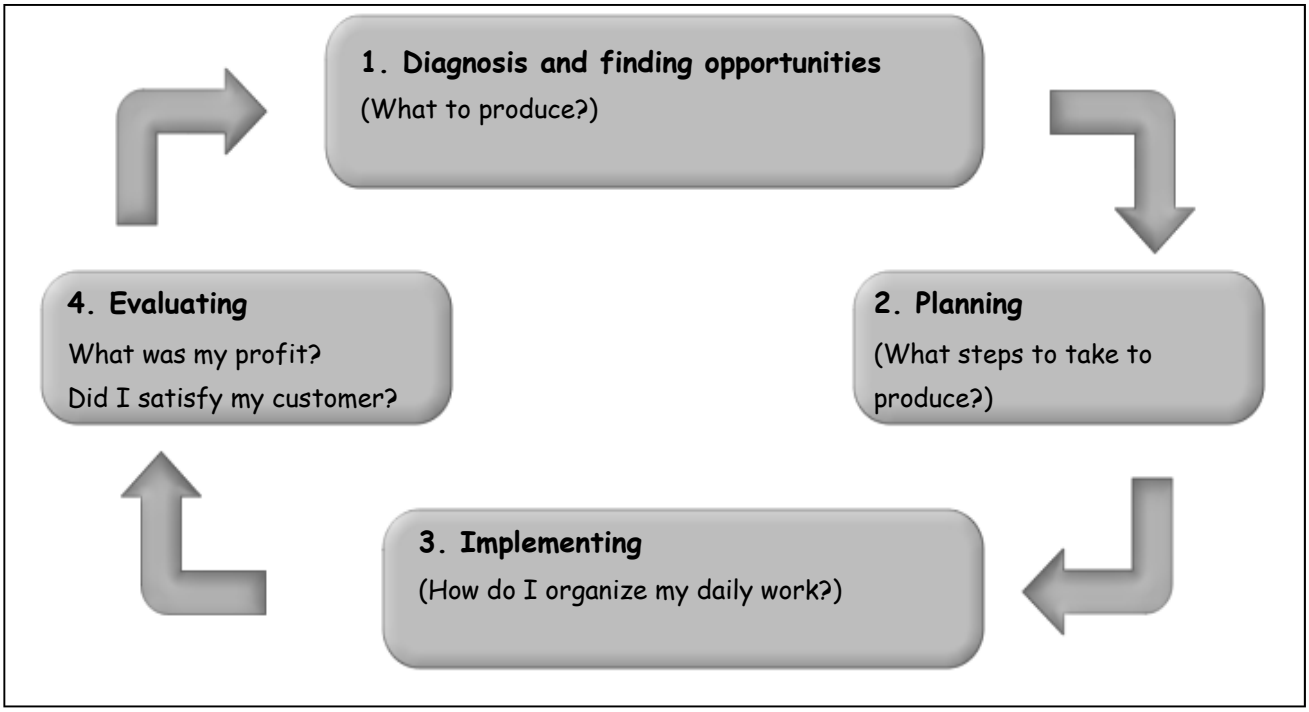
Is farming a business?

- Is your farm a business?
- What goods and services are produced and used on your farm?
- What are the objectives of your farm?
- How does your farm achieve these objectives?

What has changed about farming today?

	Farming for food	**Farming for Cash**	**Why this change?**
20 years ago			
10 years ago			
Today			

The farm business cycle



As a farmer, you need to understand that farm business operates in a certain way, called the farm business cycle.

Every farm business operation starts with the question of **what to produce**.

Secondly, the farmer needs to carefully **plan his/her activities**, including inputs and labour requirements in order to assign costs to each enterprise.

Thirdly, the farmers needs to put his/her plans into action, by going into actual **production and marketing**, by organizing his/her inputs and labour, monitoring activities on his/her enterprise, as well as, on the market, negotiating market deals for his/her products etc.

Finally, once the production and marketing has been concluded for the season, it is important to **assess whether the enterprise achieved its goals**. This will help the farmer to plan for the next season.

We will use the following story to illustrate how the farm business cycle operates.

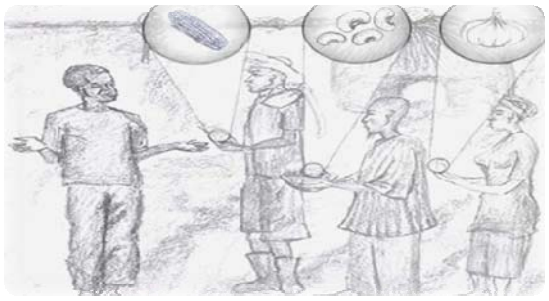
Mensah's Story

Part 1: Diagnosis (What to produce?)

Mensah left his village for the city on completing middle school.

His father who lives in the village has a one-acre farm, but was too old to manage it.

Life in the city was difficult for Mensah so he decided to return to the village to manage the family land.



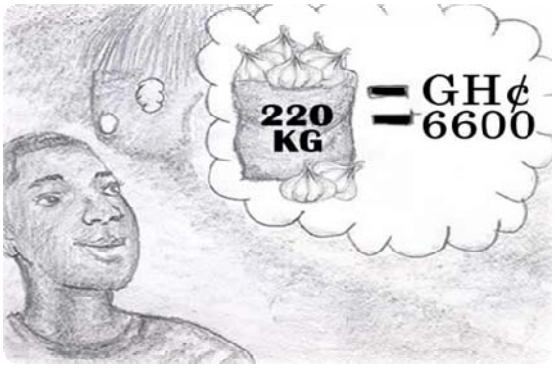
Upon his return to the village, Mensah realized that most farmers were growing the same crops: beans, onions and maize. When he asked why, they said because everyone else did it; it was what they had always grown.

Information: Traders are willing to pay good prices for good quality garlic. Garlic production could be a profitable enterprise. Investing in less than a $\frac{1}{4}$ of acre will, however, not be profitable because the costs of production will be too high.

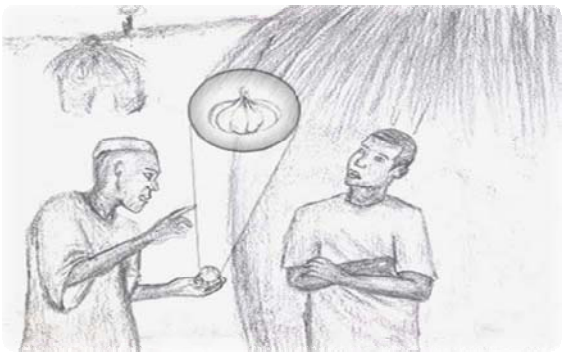
Questions

1. What does Mensah need to know before he starts using the farm land?
2. What did Mensah realize about the farmers in his village?
3. What would you advise Mensah to do first? Why is this important?
4. Considering the available information would you advise Mensah to enter into garlic production?
5. If yes, what should be the next step for him to do and why is that important?

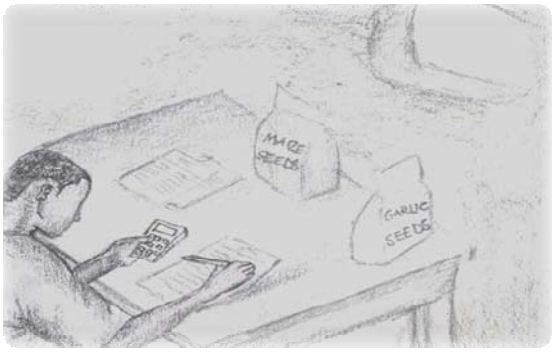
Part 2: Planning (What steps to take to produce?)



Mensah decides to grow $\frac{1}{4}$ acre of garlic and plant beans, onions and maize on the rest of the land. He is told that 1 acre will yield between 750 – 1000 kg of garlic. One kg of garlic sells for 30 GHC on the market.



However, Ali, Mensah's friend who has been farming in the village for a long time told him to be careful because many farmers have made losses in the past as inputs have become expensive.

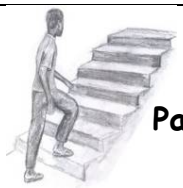


Mensah decides to calculate the costs involved in cultivating garlic, beans, onion and maize.

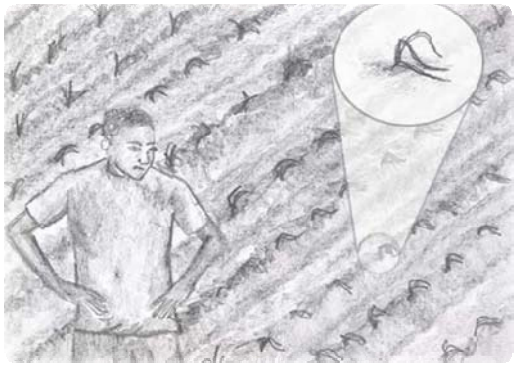
Mensah lists all the inputs he would need to grow garlic: i.e. seed, fertilizer, weedicide, labour, bags to pack the garlic. He also factors in the cost of transport.

Questions

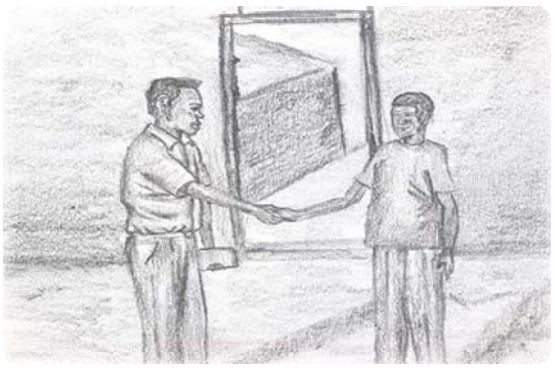
1. Is Mensah right in calculating his profit to be 6600 GHC?
2. How did Mensah arrive at 220 kg of garlic in the calculation of yield?
3. Should Mensah listen to his friend's advice?
4. What crucial step has Mensah undertaken? Is this step enough for Mensah to realize his dream?



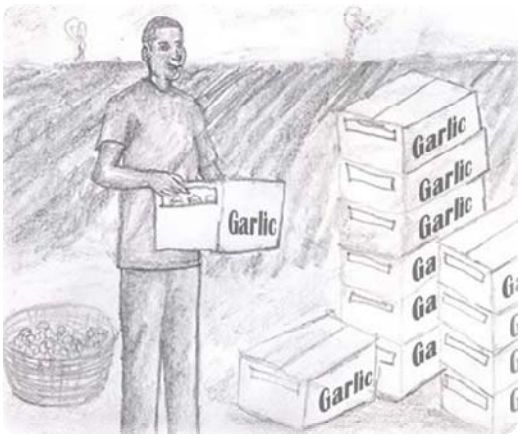
Part 3A: Implementing (Production)



When Mensah had organized all the inputs, he prepared his land and planted the garlic seeds. Within a month, however, Mensah realized that the sprouting was poor and the growth of the garlic was not as expected.



He went to the extension worker for advice, who told him to replant using a different kind of seed. Even though this was at an extra cost for Mensah, he obtained new seeds for planting, knowing that he had made a promise to several buyers in the market to supply good quality garlic.

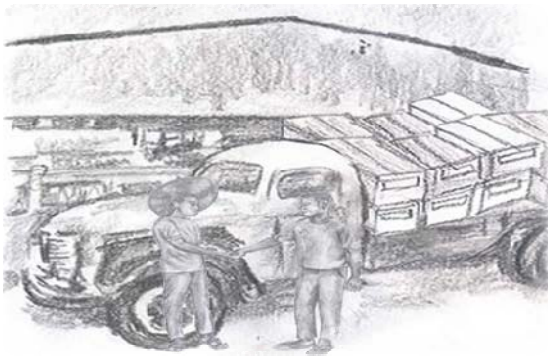


He did quick calculations and knew that he would still make a profit. A few weeks later, Mensah harvested his garlic. He was, however, a month later than expected. As the garlic was harvested from the field it was checked and cleaned. The bad cloves were thrown away, while the rest was packed into the net bags and put into boxes. When everything was weighed, Mensah discovered that he had 200 kg. It was a little less than expected, but based on his calculations, Mensah knew that he would still make a profit.

Questions

1. What happened after Mensah planted his garlic? What did he do about it? Why?
2. Mensah harvest his garlic a month later than he expected. What could be a consequence of this on the market?
3. How does Mensah address future delays?

Part 3B: Implementing (Marketing)



The transport arrived as planned. The boxes were loaded onto the vehicle and Mensah took his garlic to the 3 shopkeepers he had agreed to sell to.

Initially, the first shop refused to take his garlic since Mensah was one month late. However, the quality of his produce finally convinced the shopkeeper to buy it.

The second shopkeeper agreed to take the product, but wanted to pay Mensah after 30 days. Mensah explained that this was his first crop and he wanted to keep selling to this shopkeeper, but couldn't if they could not make a better deal on payment. In this way, Mensah persuaded the shopkeeper to pay 50 percent immediately and 50 percent after 30 days.

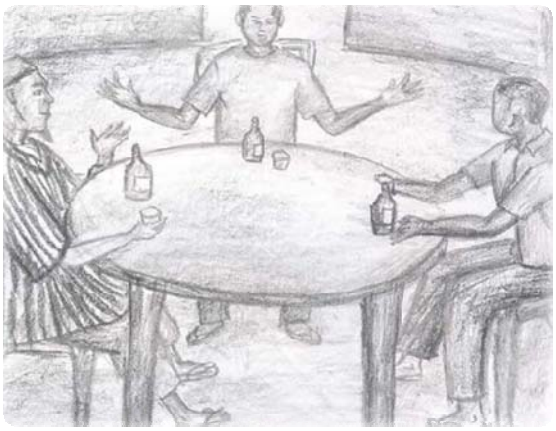
The third shopkeeper refused to pay the agreed price. She said that she was able to get cheaper garlic from another farmer. Again Mensah showed the shopkeeper the quality of the product. He also told her that her competitors had bought the garlic at the agreed price. In this way, Mensah convinced the shopkeeper to pay the agreed price in cash.

Questions

1. What happened when Mensah took the garlic to the three shopkeepers? And how did he react?
2. List the main issues to be considered when marketing one's produce.

Part 4: Evaluating
(What was my profit? Did I satisfy my customer?)

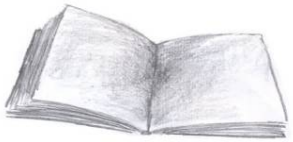
Mensah came home a happy man! However, he realized that his task was not complete. He still had to evaluate his garlic business, by comparing what he planned with what actually happened. He also needed to calculate how much profit he had made. However, he realized that he could not recall all costs of his operations.



After evaluating his business and being satisfied with his work, Mensah invited his friends over for a drink. All of them wanted to know how Mensah had made so much money from his farm. He shared the whole story with them, so they could also learn from his experience. The extension agent in the village wanted to compare Mensah's success with that of others in the area. They calculated Mensah's costs per 1 acre and his profit per 1 acre.

Questions

1. What do you think are some of the things Mensah learned from his evaluation?
2. Why did Mensah share his success story with his friends?
3. What should Mensah have done during cropping to enable him do proper evaluation after sales?
4. How do different farmers compare their costs and profit for the same crop?



Main Lessons

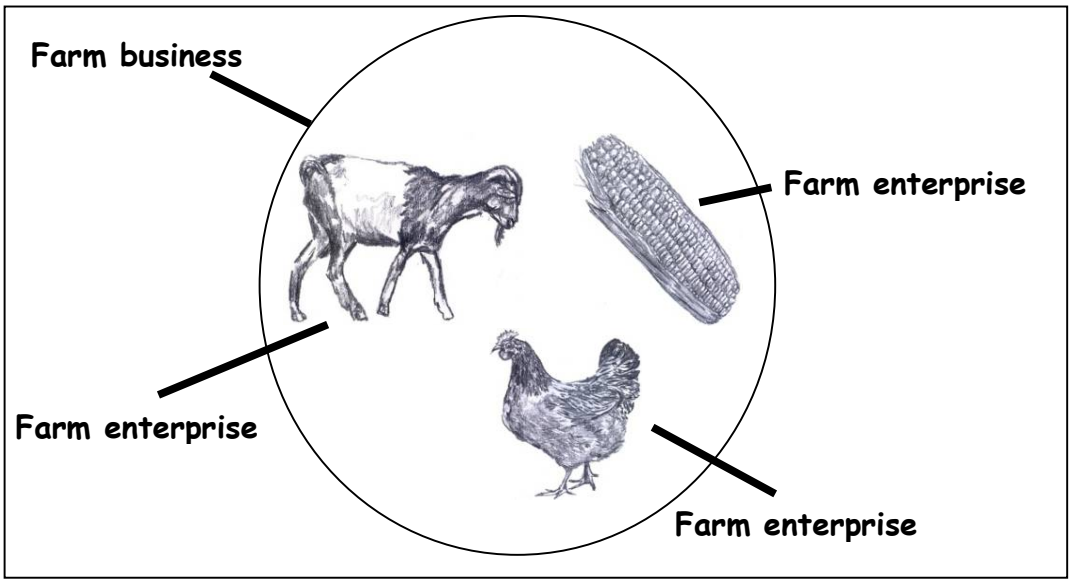
1. **You have to understand that farming is a business venture because it shares the same characteristics like any other business you already know.**
2. **You need to appreciate that a lot has changed about farming from how it was about 20 years ago. Today many farmers plant their produce to sell on the market and do not consume everything at home like it was in the past.**
3. **A farmer who is a good businessman/woman carefully identifies business opportunities by seeking information on all aspect of the identified enterprise (market demand, pests and diseases, climate and soil requirements, availability of inputs, best recommended practices, etc.).**
4. **The entrepreneur then plans and organizes himself/herself to have inputs, tools, labour and money necessary for the production ready at the right time.**
5. **He/she proceeds to put all plans into action, and carefully monitors to address any problems that arise from his/her activities. He/she keeps records of all farm operations with dates and costs.**
6. **Finally, he/she takes stock of his/her activities in order to improve his/her business in the future.**

Module 2: Choosing a Business Enterprise

Understand the difference between farm business and farm enterprise

Farm business refers to the whole farm as a business. Together all enterprises make up the farm business as a whole.

Farm enterprise is any specific crop or livestock produced on the farm.
A farmer may produce maize, mango, citrus, or raise poultry. Maize is an enterprise, mango is an enterprise, citrus is an enterprise and poultry is an enterprise.



Musa, Mensah's friend is thinking of starting a business in his village. He wants to enter into 3 different enterprises from amongst many opportunities. What steps should Musa take in order to decide which enterprises to select?

STEP 1: Explore all potential enterprises

List all the crops that are cultivated in the area.

List all the livestock that are reared in the area.

REMEMBER! Seek information from your **local extension worker** to know which other enterprises are feasible in your area.

Understanding Farm Enterprises

Competitive enterprises

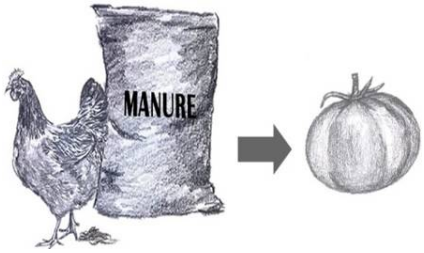
Enterprises "compete" when they use the same resources (labour, land, capital).

Example

If a farmer does not have enough labour to harvest two different crops at the same time, one crop can only be increased if the other is reduced.

"Helper" enterprises

An enterprise is a "helper" if it provides another enterprise with useful resources that might otherwise not to be available.



Example

A farmer has tomato and poultry enterprises. The poultry droppings are utilized by the tomato enterprise. In such a case, the poultry supplements the nutrient need of the tomato enterprise.

"Helping one another" enterprises

Enterprises "help" one another when they interact in a supportive, two-way process.

Example

Poultry produces manure. The manure can be applied as a fertilizer to maize cropping. The maize grain in return can be fed to the poultry. This relationship between live-stock and crops shows that the two are complementary.

STEP 2: Study the technical feasibility

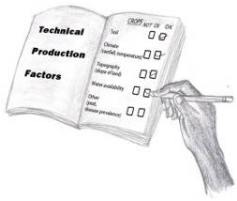
List all the technical factors that affect crop yield.

1. _____ 4. _____
2. _____ 5. _____
3. _____ 6. _____

Indicate which of the listed factors are positive (+), and which ones are negative (-) for your chosen range of enterprises.

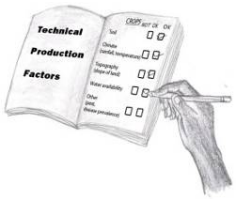
REMEMBER! DO NOT choose an enterprise if land and environment are NOT suitable for the enterprise. **Don't forget to consider factors like: Slope, soil pH value, prevailing pests and diseases and depth of groundwater table.**

Example of rating for a technical feasibility of an enterprise



FOR CROPS

Technical Production Factors		
	(+)	(-)
Soil (pH, organic matter content, type)		
Climate (rainfall, temperature, humidity)		
Topography (slope, plot sizes, erosion)		
Water (rivers, groundwater, quality)		
Pest and disease prevalence)		
Access (feeder roads, market distance)		



FOR LIVESTOCK

Technical Production Factors		
	(+)	(-)
Climate		
Grazing/vegetation		
Water availability and quality		
Incidence of major pests and diseases		
Access to concentrate feed		
Distance to processing facilities		

STEP 3: Assess physical resources and inputs availability

List all the physical resources and inputs needed by your range of enterprises.

Are they readily available in your locality or in a near-by town? Can you get them in the quantities you need? [Rank easy (10); difficult (1)]

Resource/Inputs	Ease of Access [Rank 1 – 10]	Source of Supply
Seed and planting material		
Mineral fertilizer		
Organic fertilizer		
Chemical pesticide		
Organic pesticide		
Equipments and tools		
Service gangs		
Extension and advice		

STEP 4: Assess labour requirements and availability

List all the different activities needed to be carried out for an enterprise

For crops	For livestock
Land preparation	Feed preparation
Planting	Feeding
Weeding	Vaccination
Pest and disease control	Herding
Fertilising	Watering
Harvesting	Cleaning
Pruning	Selling

Draw a labour plan to know your labour requirements and its availability:

Month	Activities	Labour needs (Man-days)	Family labour available (Man-days)	Labour to be hired (Man-days)
Jan				
Feb				
Mar				
Apr				
May				
Jun				
Jul				
Aug				
Sep				
Oct				
Nov				
Dec				
Total				

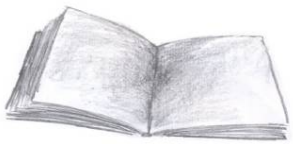
STEP 5: Assess the market for the selected enterprises

What do you need to know about the market if you want to do good business?

Market for agriculture produce	Market for inputs and equipment
•Who needs the product and wants to buy it? •The quality of product that is demanded by the market (specifications) •The location of the market •The price of the product compared to other markets	•Who sells the necessary inputs and equipment? •The quality of the inputs and equipments •The price of sale of the inputs and equipment compared to other markets

How does the price of agricultural products change?

The price of agricultural products changes according to the season of the year	•At times of abundance the prices are lowest. •At times of scarcity the prices are highest.
The price of agriculture products change between years	•The price of a product increases if the product is needed by more people from year-to-year. •The price of a product reduces sharply where producers overreact to small previous prices increases.

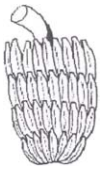
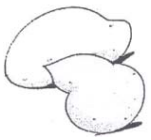
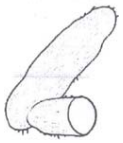
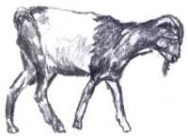
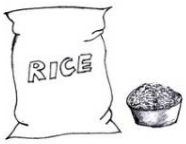
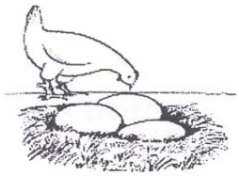


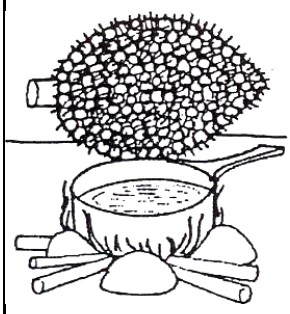
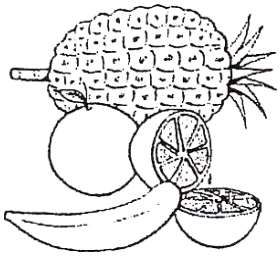
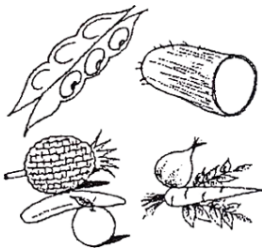
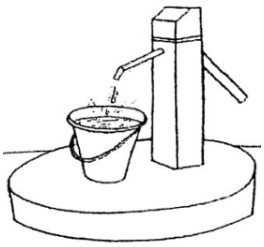
Main Lessons

1. A good agricultural entrepreneur assesses the feasibility and availability of the factors of production (land, labour, inputs). If he/she finds that an important factor of production is lacking he/she determines how that factor will impact on his/her enterprise. If the effect is highly negative he/she does not continue with that enterprise.

2. A good entrepreneur lets what he/she grows be determined by the market, but he/she does not overreact to small price changes.

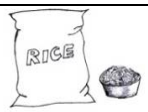
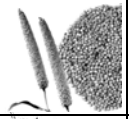
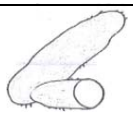
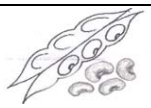
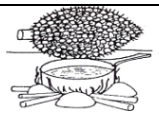
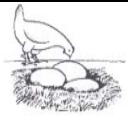
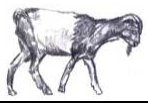
STEP 6: Assess your (family) food needs

These products provide us with **energy and physical strength** to work and grow		These products provide us with **protein** and help us to grow and breastfeed	
 Plantain	 Cassava	 Beans	 Poultry
 Sweet potato	 Yam	 Groundnut	 Meat
 Rice	 Maize	 Eggs	 Fish

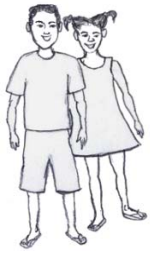
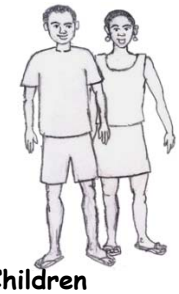
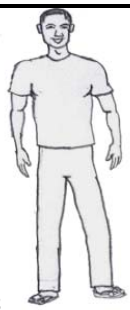
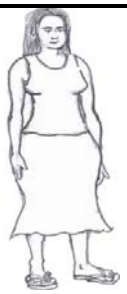
Oils give us energy and make the meals tasty	**Fruits** give us energy (sugar) and health (vitamins)	**Vegetables** give us health (minerals) and make the meals tasty	Clean drinking **water** gives us health
			

Food products and their content in energy, protein and fat

What is the food that contains most energy?
What is the food that contains most fat?
What is the food that contains most protein?

Food	Energy (Kcal per kg)	Fat (Grams per kg)	Protein (Grams per kg)
Maize 	3530	38	93
Rice 	3610	10	65
Millet 	3180	36	96
Cassava 	1490	2	12
Plantain 	1350	3	12
Yam 	1180	2	15
Beans 	3330	8	226
Groundnut 	5670	450	258
Palm oil 	8620	820	0
Eggs 	1580	112	120
Meat 	1610	79	195

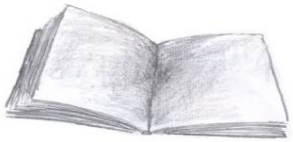
How much energy and protein do we need per day?

	 **Women** a) Pregnant b) Breast feeding	 **Children 0 to 6 months** Breastfeeding	 **Children 7 to 11 months** Breastfeeding plus 2 to 3 meals per day	 **Children 1 to 3 years** Breastfeeding plus 3 to 4 meals per day
ENERGY Kcal per day	2,690 2,860	524	708	1,022
PROTEIN Grams per day	47 60	12	14	14
	 **Children 4 to 6 years**	 **Children 7 to 9 years**	 **Girls 10 to 17 years**	 **Boys 10 to 17 years**
ENERGY Kcal per day	1,350	1,700	2,330	2,830
PROTEIN Grams per day	22	25	43	48
	 **Men 18 to 59 years**	 **Men 60 years & more**	 **Women 18 to 59 years**	 **Women 60 years % more**
ENERGY Kcal per day	3,100	2,500	2,410	2,410
PROTEIN Grams per day	50	50	41	41

EXERCISE: Complete a nutritional calendar for your household

Indicate by an arrow ↓ how long the product is available from own production.
Mark a circle O for the months you are eating the product in your household.
Mark a square □ for the months the product is being sold on the market.
Mark a triangle Δ for the months you are buying the product on the market.
What are the months of high prices and the months of low prices for the product?

	Product: Maize	**Product:**	**Product:**	**Product:**	**Product:**	**Product:**
January						
February						
March						
April						
May						
June						
July						
August						
September						
October						
November						
December						



Main Lessons

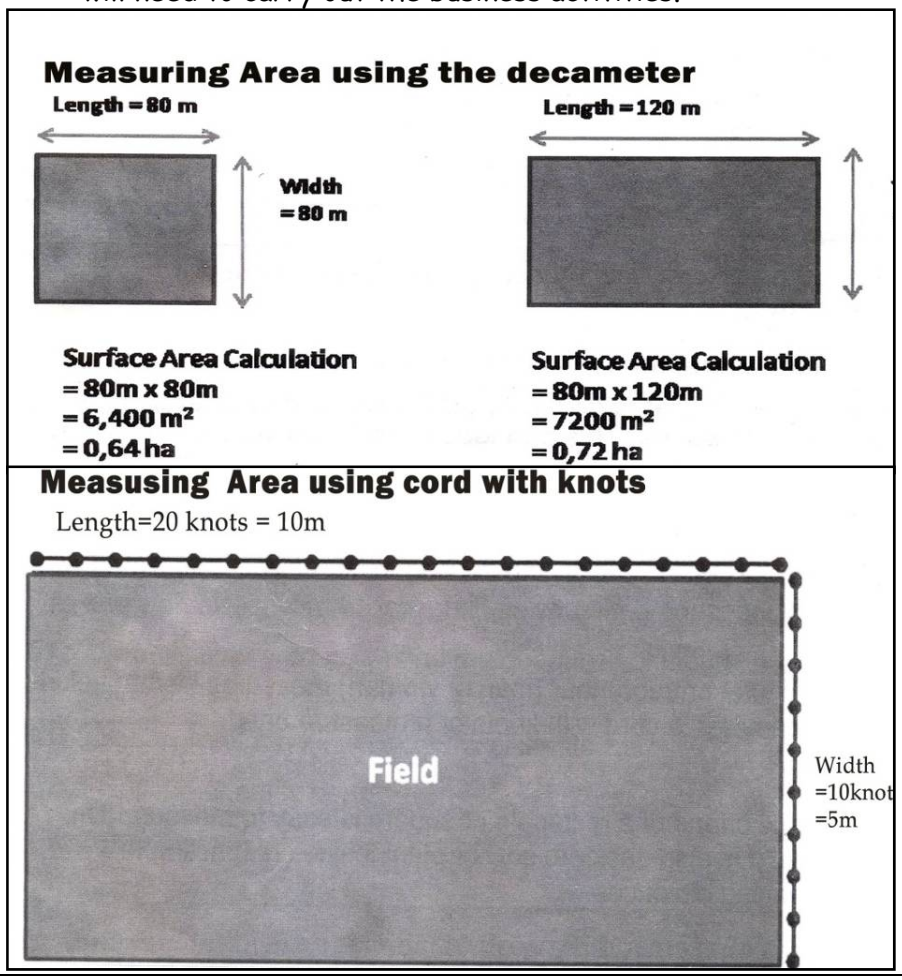
1. **A good family head ensures that he/she does not expose the family nutritional needs completely to the market but does some own food production.**
2. **A good family head makes sure that the family diet is balanced in terms of energy, protein, vitamins and minerals.**
3. **A good family head knows that growing children and breastfeeding women need protein-rich food.**
4. **A good family head plans food supply ahead of time in order to ensure its availability all year round at reasonable cost.**

Module 3: Understanding Costs of the Business Enterprise

Mr. Musa has a large tract of farmland and has now decided to enter into the following business enterprises: Maize, Mango and Chili production. Advise Musa what steps to take now.

STEP 1: Know the area

- Cost calculation always starts with how much you want to produce.
- For crop production, understanding costs starts with the area you want to cultivate.
- Therefore, you should be able to know the size of your farm under cultivation.
- For livestock, the number of animals will help you calculate the amount of money you will need to carry out the business activities.



Measuring farm size in different units

1 Acre =0.40 ha

Therefore, 1 ha =2.5 Acre

To convert 1 ha to acre, multiply by **2.5**.

Examples:

0.64 ha x 2.5 = **1.6 Acre**

0.72 ha x 2.5 = **1.8 Acre**

STEP 2: Understand Costs

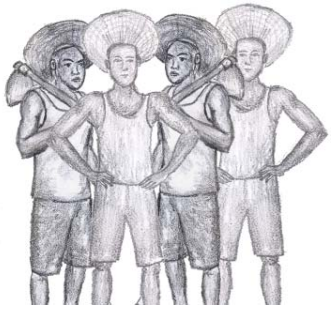
Variable Costs

These are the costs of actual production. They apply to a specific enterprise on the farm. The larger the plot size – the larger the variable costs. The more intensive the production - the larger the variable costs. Variable costs occur only if something is produced. They do not occur if nothing is produced.

Seeds

Fertilizer

Fuel for sprayer



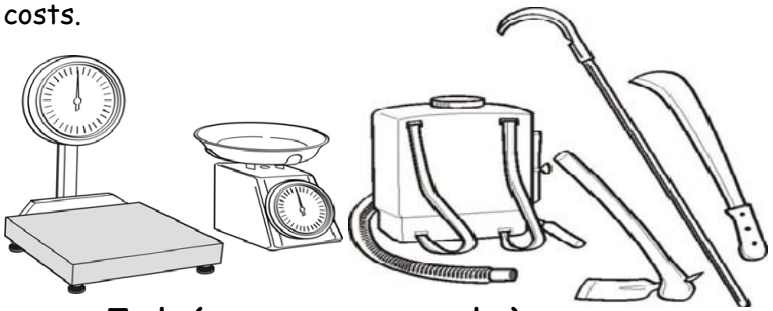
Hired labour

Insecticide

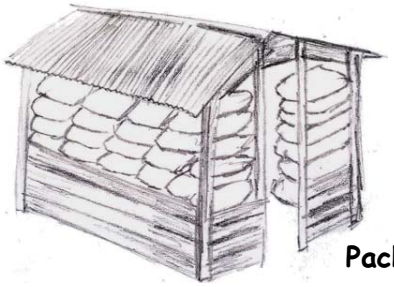
Fixed Costs

The fixed costs apply to the farm as a whole. Fixed costs are costs that do not vary with changes in production size. Fixed costs remain the same regardless of the output. Even if there is no output, there will still be fixed costs.

Machines (e.g. tractor)



Tools (e.g. sprayer or scales)



Packing shed

Truck for loading goods

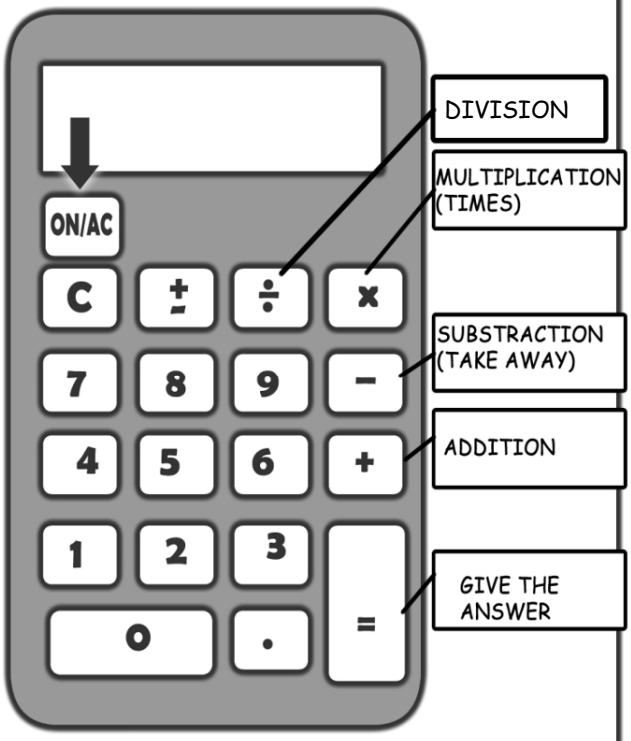
STEP 3: Know how to calculate your costs

How to use a calculator

To put on the calculator
Press the **ON/AC**

To clear a wrong number
Press **C** or **CE**

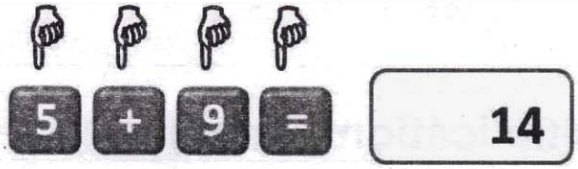
To start a new calculation
Press the **ON/AC** to clear



Addition (add)

Example:
5 + 9 = 14

Type



Example:
10 + 20 = 30

Type

Subtraction (take away)

Example:
9 - 4= 5

Type

Example:
100 - 20 = 80

Type

Example
20 – 29 = - 9

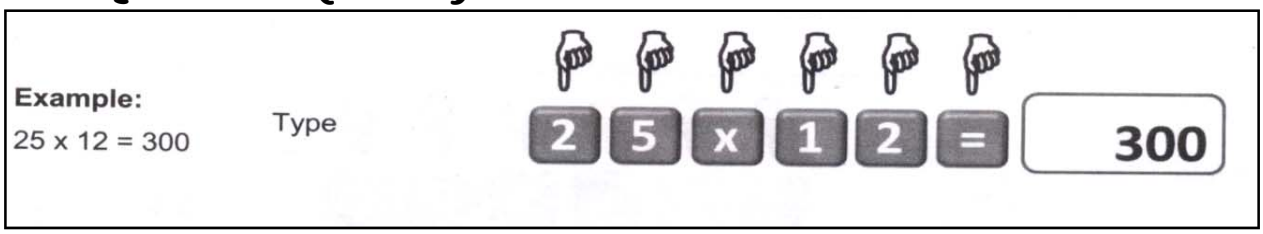
Type

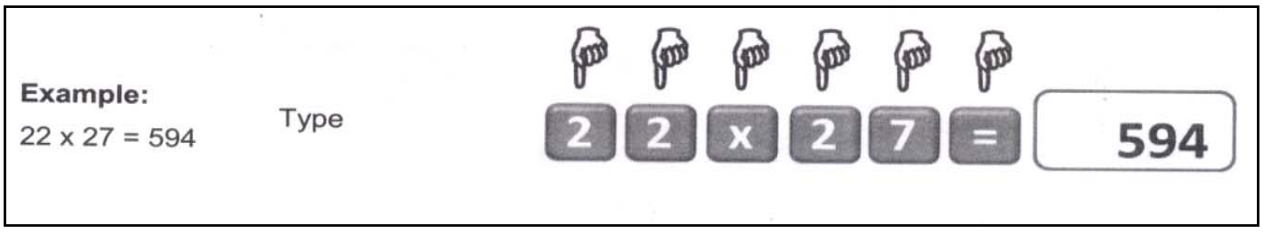
If you take away a bigger number from a smaller number, the calculator will give you a take away number as in this example. You will know that by the small dash "-"in front of the answer.

Example:
- 20 - 29= - 49

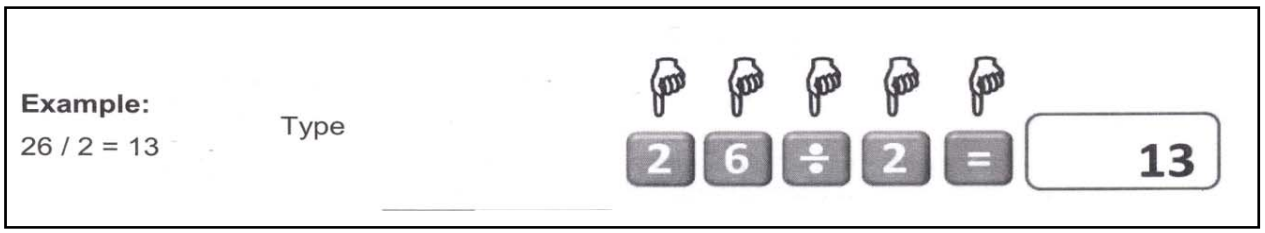
Type

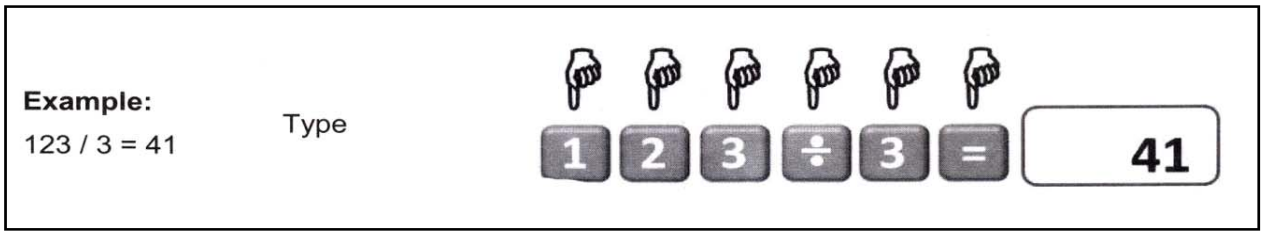
Multiplication (times)





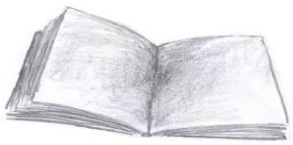
Division (divide)





Here are some examples. Try to get the results

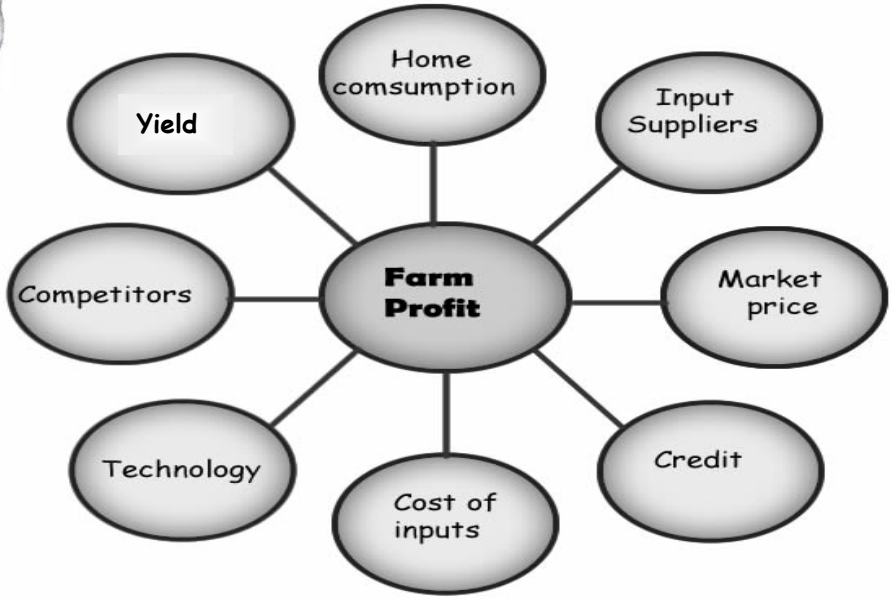
Calculation	Result	Calculation	Result
100 + 250 =	350	33 x 3 =	99
124 + 24 + 52 =	200	75 x 5 =	375
1035 + 465 + 120 =	1620	12 x 12 =	144
33 - 13 =	20	200 / 4 =	50
175 - 35 =	140	350 / 7 =	50
1243 - 12 =	1231	1100 / 8 =	137,5



Main Lessons

1. It is not enough to say your land is "big" or "small", a good agricultural entrepreneur measures field size with a decametre or a cord with knots.
2. The agricultural entrepreneur who underestimates field size risks using too little fertilizer and too few seeds. This can lead to reduced yields.
3. The agricultural entrepreneur who overestimates field size risks using too much fertilizer and planting too close together. This can lead to reduced yields and unnecessary spending.
4. Accurate knowledge of the size of the farm is important to plan production, to correctly apply inputs, and to correctly space plants and seeds.
5. Knowing the field size helps the entrepreneur to evaluate his/her production after the season and to compare profitability with neighbour farmers.
6. A good agriculture entrepreneur understands that costs come in two main forms: variable costs and fixed costs.
7. Knowing how to calculate the fixed and variable costs helps the farmer to put money aside before the season for production.
8. The use of the calculator helps the farmer to easily calculate costs.

STEP 4: List all factors that can affect the profit



STEP 5: Keep a business record

What is a record?

A record is a written proof of past, present or future activity. It can also be a written proof of what was said, and who said it.

Some examples are: ▶ Minutes of a meeting; ▶ Report on a completed project; ▶ Record of farm enterprise activities including information on costs, yields and sales; ▶ Plan of operations for a farm enterprise for the following season.

Why keep records?

Many people do not write down how much money comes in and how much money goes out of their business. Why?

- Because they may not know how to do it
- They do not think it is important for their business

Record keeping is important because you cannot keep everything in your head. People are forgetful by nature.

Advantages of record keeping

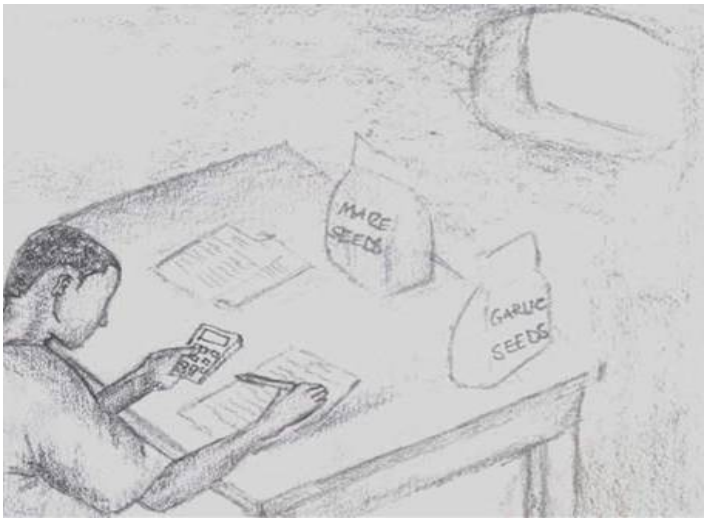
▶ Records help the farmer to know how much money he/she has received, how much money he/she spent and how he/she spent it (e.g. on inputs, labour, services).

▶ The farmer can then calculate whether he/she is making a profit or a loss. Therefore, the farmer will be able to know which individual farm enterprise is doing well, and which is not doing well.

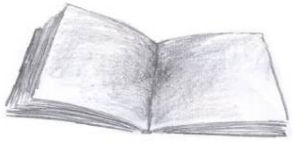
▶ He/she will be able to make better decisions on which farm enterprise to expand, improve or even to stop production.

▶ Records are the only tool to communicate past success to banks, micro-finance institutions, money lenders, and even investors.

Types of farm business records



- Production plan
- Production records
- Labour plan
- Cash inflows records (Money-In)
- Cash outflows record (Money-Out)
- Home consumption records
- Profit and Loss records
- Fixed Assets Records



Main Lessons

1. **A good agricultural entrepreneur understands that a lot of factors affect the profits of his/her farm enterprise. Knowledge of these factors enables him/her to plan production and to put in place measures to offset any negative consequences in the future.**
2. **Keeping records helps the farmer to know everything about his/her farm enterprise from the past to the present and to be able to plan for the future. Any serious businessman or woman keeps a record!!**
3. **No loan at favourable conditions without past records!**

Module 4: Business Planning

A **Farm Business Plan** is a document in which the farmer notes down important decisions and actions for the future development of the farm business. A Farm Business Plan makes sure that all the things that need to be done are done to render the farm more profitable.

Now let's help Musa to plan his farm business.

STEP 1: Describe your farm and household

This includes a description of its vision and objectives. Putting this on paper helps the farmer to stay focused on what he or she wants to achieve. Then the current assets need to be listed (land, labour, knowledge & skills, equipment and livestock). The main aim of your farm business is to provide for the family members' needs; the farm household therefore need to be described, too.

Name and Address	Date	Period of the Plan
Vision and objectives:		
Land available and current use:		
Labour available:		
Education and knowledge sources available:		
Tools and equipment available:		
Livestock available:		
Size household (description of dependents):		

STEP 2: Draw a farm production plan

State which crops you will grow and the number of acres (or ha) you will plant. Draw up a calendar of activities for each selected crop.

Example for maize:

Enterprise	Land size	Expected yield per hectare or acre	Total yield (tons/kg/bags)
Maize	2 ha (this is 5 acres)	3,000 kg/ha (this is 1,200 kg/acre)	6,000 kg

Cropping calendar to plan maize production using best practices

Farm Activities	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Land clearing												
Input purchase												
Ploughing												
Harrowing												
Herbicide spraying												
Sowing												
NPK application												
Weeding												
Urea application												
Scout stem borer												
Insecticide spraying												
Harvesting												
Shelling												
Drying												
Bagging												

EXERCISE: Prepare a cropping calendar to plan the production of citrus for one season using current practices

Enterprise	Land size	Expected yield per hectare or acre	Total yield (tons/kg/bags)

Cropping calendar

Farm Activities	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Fire belt												
Applying manure / EFB												
Scouting for disease/pests												
Hanging of fruit fly traps												
Checking of fruit fly traps												
Spraying insecticide												
Spraying fungicides												
Weeding												
Maintenance pruning												
Farm sanitation												
Harvesting												
Carriage												

STEP 3: Calculate your costs (Variable costs):

1. List **all items** used in the production of the enterprise including inputs, labour, transportation etc.
2. Indicate the quantity of each of the items used in each of the operations, indicate the unit cost of the items and sum up the total variable costs.

[Example 1 ha of maize]

	Unit	Quantity	Price [GHC]	Total [GHC]
Money-out: Inputs				
Seed	Kg	22	2.50	55.00
Fertilizer: NPK	Bag	5	89.00	445.00
Urea	Bag	2.5	84.00	210.00
Insecticide	Litre	3	24.00	72.00
Sack	Sack	25	4.00	100.00
Input Cost [A] GHC				**882.00**
Money-out: Labour				
Land preparation	MD	18	10.00	180.00
Planting	MD	13	10.00	130.00
Weeding	MD	23	10.00	230.00
Fertilizer application	MD	10	8.00	80.00
Harvesting	MD	12	8.00	96.00
Storing/insecticide use	MD	8	8.00	64.00
Threshing	MD	8	8.00	64.00
Bagging	MD	5	8.00	40.00
Labour need & cost [B] GHC	**MD**	**97**		**884.00**
Total Money-out [A + B] GHC				**1766.00**

STEP 4: Devise a Market Plan / Strategy:

- What is your target market? Immediate community; the district market; aggregators; middlemen/women; retailers?
- What price will you get for your product if you sold it at your farm gate?
- What price will you get for your product if you stored it and sold it later?

[Example 1 ha of maize]

Target market	Buyer	Expected sales	Market price (GHC)	Marketing cost (GHC)	Farm gate price (GHC)
Nima market	Antwi	3000 kg (=25 bags)	1.20 per kg 144.00 per bag	0.05 per kg 6.00 per bag	0.75 per kg 90.00 per bag

Note: 1 bag = 120 kg

STEP 5: Calculate your profit (or loss)

To determine whether an enterprise is making a profit or a loss for the season, simply subtract the variable costs (**Money-out**) from the total income collected from sales of the product **(Money-in)**:

Gross Margin = Money-in **MINUS** Money-out

[Example 1 ha of maize]

Item	Quantity (Kg)	Unit Price (GHC)	Value (GHC)
Maize	3000	1.20	3600.00
Total Income [MONEY-IN]			**3600.00**
Total Variable Costs [MONEY-OUT]			**1766.00**
Enterprise Gross Margin			**1834.00**

From this **Gross Margin** the farmer still has to pay for replacement of equipment ("fixed costs"). Only after he/she has done this, we consider the result as **real profit**.

STEP 6: Plan your cash flow [Money-In, Money-Out]

Plan your cash flow for each enterprise and in each month to ensure that enough cash is always available to the business.

Farm Activities	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Money-in													
Crop sales					3600								**3600**
Money-out													
Seed	55												**55**
Sack					100								**100**
Fertilizer		445		210									**655**
Pesticide							72						**72**
Labour			400		200		284						**884**
Cash need	**55**	**445**	**400**	**210**	**300**	**0**	**356**	**0**	**0**	**0**	**0**	**0**	**1766**
Balance	**-55**	**-445**	**-400**	**-210**	**3300**	**0**	**-356**	**0**	**0**	**0**	**0**	**0**	
Cash flow	**-55**	**-500**	**-900**	**-1110**	**2190**	**2190**	**1834**	**1834**	**1834**	**1834**	**1834**	**1834**	

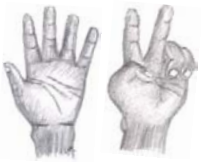
The cash flow shows that it is negative from January to April. However, the cash flow always needs to be positive; otherwise no money is available to pay for inputs and labour.

A loan of 1200 GHC in the beginning of January would make the cash flow always positive (repayment of loan & interest of 5 percent at the end of May):

Balance (no loan)	**-55**	**-445**	**-400**	**-210**	**3300**	**0**	**-356**	**0**	**0**	**0**	**0**	**0**	
Disbursed loan	**1000**		**200**										
Repaid loan					**1440**								
Cash flow (with loan)	**945**	**500**	**300**	**90**	**1950**	**1950**	**1594**	**1594**	**1594**	**1594**	**1594**	**1594**	

Questions

- How much was paid in interest in May?
- Why has the available cash balance changed from 1834 GHC to 1594 GHC?
- Of the 1594 GHC, how much should be saved for the next season to survive the next 4-5 months?

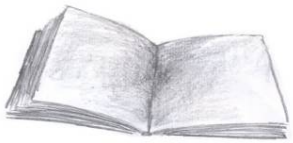


STEP 7: Assume realistic foreseeable risks

Indicate how you will handle such risks should they occur!

Risk	How to handle the risk
Thunderstorm breaks all maize stalks in the field.	I will subscribe to a weather index-based insurance that ensures automatic compensation for incurred losses.
Maize plants can be attacked by stem borer.	I will do weekly scouting for stem borers and spray a chemical when 10% of the plants show feeding damage.
Market price can drop resulting in lower profits.	I will remain alert to the changes in the market, and decide when to sell, and how much at a time. I will also subscribe to receiving the ESOKO price information on my mobile phone.

Remember, all measures to minimise risk cost money. This adds to the variable costs.



Main Lessons

1. **A good agricultural entrepreneur is one who plans all production operations ahead of each season to ensure that all inputs needed for production can be procured in time.**
2. **The plan of necessary field operations is best done in a group of farmers who advise each other on the best possible technology. This plan can also be shown to the extension agent for advice.**
3. **A good agricultural entrepreneur devises, even before he/she starts producing, a market strategy and decides how, where and when to sell.**
4. **A good agricultural entrepreneur always knows the expected profit and the past profit. This enables him/her to compare expected to real profit.**
5. **No loan at favourable conditions without good production plans and calculation of expected profit.**
6. **A cash flow plan helps to know which months the farmer has more expenses than income. He/she should produce such a plan when requesting for credit.**

Module 5: Money-In, Money-Out: Am I in Good Business?

We will now see how to determine if an enterprise is good or bad. Simply, an enterprise is good if the "money-in" is more than the "money-out" after the entrepreneur has completed his/her account of expenses and income. The "excess" money is called a gross margin from which we get our profit.

For example:

Musa spent 1766 GHC to cultivate his 1 ha of maize enterprise. He sold his maize and received an income of 3600 GHC.

1. What name would you call the 1766 GHC Musa spent?
2. What name would you call the 3600 GHC Musa received from his sales?
3. Did Musa make a profit of a loss?

We will calculate the "money-in" and "money-out" from 3 different products, maize, citrus and cassava produced under current local agronomic practices. We will then determine if each enterprise is making profit or loss. Again, we will find out which enterprise is making the most profit compared to the rest.

Steps:

1. Multiply the quantity with the price in each line
2. Sum the money spent ("money-out") on inputs and labour
3. Multiply the yield by the price of sale ("money-in")
4. Subtract the sum of "money-out" from the "money-in"
5. Determine if there is a gain or a loss

Remember the following terms

"Money-out": The amount of money spent on goods (inputs) and/or services (labour). Money-out is also called "variable cost".

Example 1:

Amina spends 16 GHC to buy a crate of 30 eggs. She also spends 3 GHC to buy cooking oil to fry the eggs. For fire wood she spends 1 GHC.
16 GHC for eggs: Money-out
3 GHC for cooking oil: Money-out
1 GHC for fire wood: Money-out

Total variable cost: SUM of all expenses ("money-out") for inputs and labour.

Example 2:

Total variable cost to Amina: **16+3+1 = 20 GHC for eggs, cooking oil and fire wood**

"Money-in": The income from the sale of goods.

Example 3:

Amina fried the eggs for sale. She started frying her eggs at 4 o'clock in the afternoon and by 8 o'clock in the evening she had sold all her 30 eggs. She sold one fried egg for 0.80 GHC or 80 Ghana Pesewas.

Gross Revenue: SUM of all money-in when the money-out has not been subtracted.

Example 4:

Amina sold 30 eggs. Therefore Gross Revenue is: 30 multiply by 0.80 GHC = **24 GHC**. Remember the "money-out" has not been subtracted yet!

Gross Margin: "Money-in" MINUS "money-out". The gross margin determines whether the enterprise is making a profit or a loss.

Example 5:

24 GHC minus 20 GHC = **4 GHC**

Fixed costs: Is a Gross Margin of **4 GHC** enough to cover the fixed costs and bring some money home? Remember, fixed costs are the costs of tools, equipment, buildings, licenses, etc.

Example 6:

Amina had invested 100 GHC into tools, equipment and licenses. Over a period of 100 days, she needs to put 1 GHC aside every evening to pay for these fix costs. She can therefore only bring 3 GHC home. This is barely enough for 4 hours of hard work and the risks included in the business.

EXERCISE 5-1

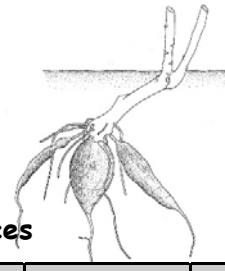
Gross Margin for 1 ha of <u>maize</u>, local variety without the application of fertilizer

	Unit	Quantity	Price [GHC]	Total [GHC]
Money-out: Inputs				
Seed	Kg	22	2.50	
Fertilizer: NPK	Bag	0	89.00	
Urea	Bag	0	84.00	
Non selective insecticide	Litre	3	24.00	
Sack	Sack	25	4.00	
Input Cost [A] GHC				
Money-out: Labour				
Land preparation	MD	18	10.00	
Planting	MD	13	10.00	
Weeding	MD	23	10.00	
Fertilizer application	MD	0	8.00	
Harvesting	MD	8	8.00	
Storing/insecticide use	MD	6	8.00	
Threshing	MD	6	8.00	
Bagging	MD	4	8.00	
Labour need & cost [B] GHC	**MD**	**78**		
Total Money-out [A + B] GHC				
Money-in				
Sale of maize	Kg	900	1.20	
Money-in [C] GHC				
Gross Margin: [C] minus [A + B] GHC				

EXERCISE 5-2

Gross Margin for 1 ha of citrus, using current traditional practices

	Unit	Quantity	Price [GHC]	Total [GHC]
Money-out: Inputs				
Poultry manure / Empty fruit bunches	bag	0	8.00	
Fungicides	Kg	3	22.00	
Non selective insecticide	Litre	3	15.00	
Foliar fertilizer	Litre	0	33.60	
Fruit fly traps	Pieces	0	10	
Input Cost [A] GHC				
Money-out: Labour				
Manure/EFB application	MD	0	12.00	
Spraying insecticides	MD	7	12.00	
Spraying fungicides	MD	6	12.00	
Weeding	MD	12	12.00	
Maintenance pruning	MD	0	12.00	
Farm sanitation	MD	0	12.00	
Harvesting	MD	40	36.00	
Carriage	MD	25	36.00	
Labour need & cost [B] GHC	**MD**	**90**		
Total Money-out [A + B] GHC				
Money-in				
Sale of oranges	Kg	30,000	0.30	
Money-in [C] GHC				
Gross Margin: [C] minus [A + B] GHC				



EXERCISE 5-3

Gross Margin for 1 ha of cassava, using current traditional practices

	Unit	Quantity	Price [GHC]	
Money-out: Inputs				
Insecticides	Litres	0	32.00	
Fertilizer	Bags	0	89.00	
Cuttings	Bundles	40	5.00	
Fire wood for gari making	Bundles	5	6.00	
Input Cost [A] GHC				
Money-out: Labour				
Land clearing	MD	20	10.00	
Ploughing/ridging	MD	14	8.00	
Planting / Replanting	MD	14	8.00	
Fertilizer application	MD	4	8.00	
Weeding (2x)	MD	33	10.00	
Harvesting	MD	18	10.00	
Carriage	MD	5	12.00	
Gari processing	MD	10	12.00	
Labour need & cost [B] GHC	**MD**	**118**		
Total Money-out [A + B] GHC				
Money-in from a yield of	kg	7,000		
Sale of fresh tubers	Kg	3,500	0.55	
Sale of gari	Kg	980	1.80	
Money-in [C] GHC				
Gross Margin: [C] minus [A + B] GHC				

Solution to EXERCISE 5-1

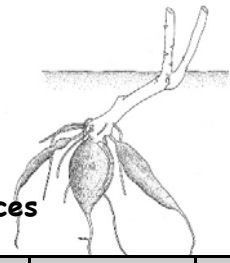
Gross Margin for 1 ha of <u>maize</u>, local variety without the application of fertilizer

	Unit	Quantity	Price [GHC]	Total [GHC]
Money-out: Inputs				
Seed	Kg	22	2.50	55.00
Fertilizer: NPK	Bag	0	89.00	0.00
Urea	Bag	0	84.00	0.00
Non-selective insecticide	Litre	3	24.00	72.00
Sack	Sack	25	4.00	100.00
Input Cost [A] GHC				227.00
Money-out: Labour				
Land preparation	MD	18	10.00	180.00
Planting	MD	13	10.00	130.00
Weeding	MD	23	10.00	230.00
Fertilizer application	MD	0	8.00	0.00
Harvesting	MD	8	8.00	64.00
Storing/insecticide use	MD	6	8.00	48.00
Threshing	MD	6	8.00	48.00
Bagging	MD	4	8.00	32.00
Labour need & cost [B] GHC	**MD**	**78**		732.00
Total Money-out [A + B] GHC				**959.00**
Money-in				
Sale of maize	Kg	900	1.20	1,080.00
Money-in [C] GHC				**1,080.00**
Gross Margin: [C] minus [A + B] GHC				**121.00**

Solution to EXERCISE 5-2

Gross Margin for 1 ha of citrus, using current traditional practices

	Unit	Quantity	Price [GHC]	Total [GHC]
Money-out: Inputs				
Poultry manure / Empty fruit bunches	bag	0	8.00	0.00
Fungicides	Kg	3	22.00	66.00
Non-selective insecticide	Litre	3	15.00	45.00
Foliar fertilizer	Litre	0	33.60	0.00
Fruit fly traps	Pieces	0	10	0.00
Input Cost [A] GHC				**111.00**
Money-out: Labour				
Manure/EFB application	MD	0	12.00	0.00
Spraying insecticides	MD	7	12.00	84.00
Spraying fungicides	MD	6	12.00	72.00
Weeding	MD	12	12.00	144.00
Maintenance pruning	MD	0	12.00	0.00
Farm sanitation	MD	0	12.00	0.00
Harvesting	MD	40	36.00	1440.00
Carriage	MD	25	36.00	900.00
Labour need & cost [B] GHC	**MD**	**90**		**2,640.00**
Total Money-out [A + B] GHC				**2,751.00**
Money-in				
Sale of oranges	Kg	30,000	0.30	9,000.00
Money-in [C] GHC				9,000.00
Gross Margin: [C] minus [A + B] GHC				**6,249.00**



Solution to EXERCISE 5-3

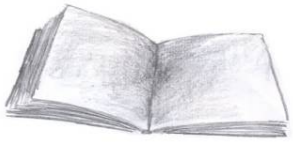
Gross Margin for 1 ha of cassava, using current traditional practices

	Unit	Quantity	Price [GHC]	Total [GHC]
Money-out: Inputs				
Insecticides	Litres	0	32.00	0.00
Fertilizer	Bags	0	90.00	0.00
Cuttings	Bundles	40	5.00	200.00
Fire wood for gari making	Bundles	5	6.00	30.00
Input Cost [A] GHC				**230.00**
Money-out: Labour				
Land clearing	MD	20	10.00	200.00
Ploughing/ridging	MD	14	8.00	112.00
Planting / Replanting	MD	14	8.00	112.00
Fertilizer application	MD	4	8.00	32.00
Weeding (2x)	MD	33	10.00	330.00
Harvesting	MD	18	10.00	180.00
Carriage	MD	5	12.00	60.00
Gari processing	MD	10	12.00	120.00
Labour need & cost [B] GHC	**MD**	**118**		**1,146.00**
Total Money-out [A + B] GHC				**1,376.00**
Money-in from a yield of	kg	7,000		
Sale of fresh tubers	kg	3,500	0.55	1,925.00
Sale of gari	kg	980	1.80	1,764.00
Money-in [C] GHC (losses)	kg			**3,689.00**
Gross Margin: [C] minus [A + B] GHC				**2,313.00**

Comparing Results

EXERCISE 5-4: Calculate and fill in the blank boxes and compare the results. Indicate what is good and a bad enterprise and give reasons.

	Unit	1 ha of maize	1 ha of citrus	1 ha of cassava
Yield	Kg/ha	900	30,000	7,000
Money In	GHC/ha		9,000.00	3,689.00
Money Out	GHC/ha	959.00	2,751.00	
Profit or Loss?	GHC/ha	121.00		2,343.00



Main Lessons

1. **The good entrepreneur knows which of his/her enterprises is doing well by calculating how much is spent on that enterprise per season (Money-out) and how much is received as income from that enterprise for that season (Money-in).**
2. **From the money-in, the entrepreneur subtracts the money-out. The result tells him/her if he/she made profit or loss.**
3. **The agricultural entrepreneur makes a profit, if the "money-in" is greater than the "money-out". In that case he/she does a good business.**
4. **The agricultural entrepreneur makes a loss, if the "money-out" is greater than the "money-in". In that case he/she does a bad business. By using the calculator, a loss is recognized with the minus dash (—) in front of the number. For instance, 4 - 7= -3.**
5. **A good entrepreneur making a loss will either abandon that enterprise or use a better technique to improve production in order to make a profit.**
6. **To be sure that all work yield into a profit, the agricultural entrepreneur calculates "money-in" and "money out" before starting to produce.**

Module 6: Decisions for Better Business

In this section we will see how the farm enterprises can be improved. How do I know whether the farm enterprise is ha improved? It has improved if

- Unit costs go own, and/or
- Labour productivity goes up, and/or
- Capital productivity goes up

Unit cost:

This is the money spent to produce 1 unit of output. To calculate the unit cost the total "money-out" (total variable cost) is divided by the total yield.

$$\text{Unit cost} = \frac{\text{Variable cost (GHC)}}{\text{Yield (Kg)}}$$

The unit cost helps the entrepreneur to determine how much it costs him/her to produce every unit of produce. The lower the unit cost, the easier to find a customer and the better to compete with other producers on the market.

Labour Productivity:

This is a measure of how much a person has made after having worked for one day.

$$\text{Labour productivity} = \frac{\text{Gross revenue (GHC)} - \text{Input costs (GHC)}}{\text{Total labour needs (MD)}}$$

Especially when family labour is scarce in the village because the youth has left to earn more money elsewhere, it is important that the labour productivity of the farm enterprise is high. Therefore, the more income 1 man-day gives, the more productive is the use of that labour – and the smaller the incentive to leave the village in search of better paid work.

Capital Productivity:

This is a measure of what profit has been made with every GHC invested in the enterprise.

$$\text{Capital productivity} = \frac{\text{Gross margin (GHC)}}{\text{Variable cost (GHC)}}$$

Especially where money is scarce, loans expensive and remittances lacking, it is important that the little money available produces good returns. The higher the capital productivity the better the limited savings – which the entrepreneur has – are invested.

Example of unit cost

- Amina spends 16 GHC to buy a crate of eggs which contains 30 eggs. She bought a bottle of cooking oil at 3 GHC and fuel for 1 GHC.
- Therefore Unit Cost = 16 + 3 + 1 divided by 30 fried eggs = 0.66 GHC. For 1 fried egg that Amina sells, she spent **0.66 GHC** to fry it.
- Amina wants to increase profits. However, she will not be able to increase the price as her price is already the market price. She has to reduce the unit cost!

Example of labour productivity

- Remember Amina made a gross revenue of = 24 GHC
- Her total cost (inputs cost) are = 20 GHC
- Amina needs ½ man-day to fry and sell 30 eggs = 0.5
- Therefore, labour productivity = [24 minus 20] divided by ½ =**8 GHC.**
- If Amina worked the whole day (which is 8 hours) she would earn 8 GHC! As any employment would probably pay her more than 8 GHC per day, she needs to increase her labour productivity (by selling more than just eggs in half a day). Otherwise she should leave the egg frying business and take up some employment.

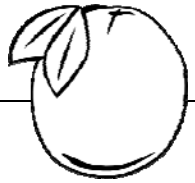
Example of capital productivity

- Amina had a gross margin of = 4 GHC
- She spent 20 GHC as her total variable cost
- Therefore, her capital productivity is 4/20 = 0.2
- This means that if Amina puts 1 GHC into her egg frying business she will get a profit (or return) of **0.20 GHC**.
- This is not very high. If she had to pay 25% interest on the capital used to buy eggs, oil and fuel, then she would pay 0.25 GHC interest and not earn anything at all.

Now let us help Musa to improve his maize, citrus and cassava enterprises.

EXERCISE 6-1

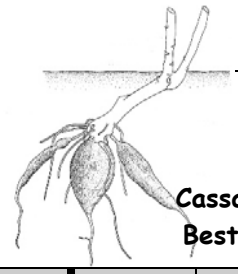
		Maize (1 ha): Current practices			Maize (1 ha): Best practices		
Activity	**Unit**	**Q'ty**	**Price [GHC]**	**Total [GHC]**	**Q'ty**	**Price [GHC]**	**Total [GHC]**
Money-out: Inputs							
Seed	Kg	22	2.50	55.00	22	2.50	
Fertilizer: NPK	Bag	0	89.00	0.00	5	89.00	
Urea	Bag	0	84.00	0.00	2.5	84.00	
Insecticide	Litre	3	24.00	72.00	3	24.00	
Sack	Sack	25	4.00	100.00	25	4.00	
Input Cost				227.00			
Money-out: Labour							
Land preparation	MD	18	10.00	180.00	18	10.00	
Planting	MD	13	10.00	130.00	13	10.00	
Weeding	MD	23	10.00	230.00	23	10.00	
Fertilizer application	MD	0	8.00	0.00	10	8.00	
Harvesting	MD	8	8.00	64.00	12	8.00	
Storing/insecticide use	MD	6	8.00	48.00	8	8.00	
Threshing	MD	6	8.00	48.00	8	8.00	
Bagging	MD	4	8.00	32.00	5	8.00	
Labour	**MD**	**78**		732.00	**97**		
Money-out	***GHC***			959.00			
Money-in	***GHC***						
Sale of maize	Kg	900	1.20	1080.00	3000	1.20	
Money-in	*GHC*			1080.00			
Gross Margin	*GHC*			**121.00**			



EXERCISE 6-2

Activity	Unit	Citrus (1 ha, 275 trees): Current practices Q'ty	Price [GHC]	Total [GHC]	Citrus (1 ha, 275 trees): Best practices Q'ty	Price [GHC]	Total [GHC]
Money-out: Inputs							
Poultry manure/EFB	Bag	0	8.00	0.00	65	8.00	
Fungicide	Kg	3	22.00	66.00	3	22.00	
Insecticide/protein bait	Litre	3	15.00	45.00	5	15.00	
Foliar fertilizer	Litre	0	33.60	0.00	2.5	33.60	
Fruit-fly traps	Pieces	0	10.00	0.00	12	10.00	
Input Cost				111.00			
Money-out: Labour							
Manure/EFB application	MD	0	12.00	0.00	4	12.00	
Spraying insecticide	MD	7	12.00	84.00	10	12.00	
Spraying fungicide	MD	6	12.00	72.00	6	12.00	
Weeding	MD	12	12.00	144.00	25	12.00	
Maintenance pruning	MD	0	12.00	0.00	24	12.00	
Farm sanitation	MD	0	12.00	0.00	6	12.00	
Harvesting	MD	40	36.00	1440.00	55	36.00	
Carriage	MD	25	36.00	900.00	41	36.00	
Labour	**MD**	**90**		2,640.00	**171**		
Money-out	**GHC**			2,751.00			
Money-in	**GHC**						
Sale of citrus	Kg	30,000	0.30	9,000.00	60,000	0.35	
Money-in	GHC			9,000.00			
Gross Margin	GHC			**6,249.00**			

EXERCISE 6-3



Cassava (1 ha): Current practices | **Cassava (1 ha): Best practices**

Activity	Unit	Q'ty	Price [GHC]	Total [GHC]	Q'ty	Price [GHC]	Total [GHC]
Money-out: Inputs							
Insecticides	Litre	0	32.00	0.00	0	32.00	
Fertilizer	Bag	0	90.00	0.00	5	90.00	
Cuttings	Bundle	40	5.00	200.00	40	5.00	
Firewood	Bundle	5	6.00	30.00	10	6.00	
Input Cost				230.00			
Money-out: Labour							
Land clearing	MD	20	10.00	200.00	42	10.00	
Ploughing/ridging	MD	14	8.00	112.00	32	8.00	
Planting/replanting	MD	14	8.00	112.00	54	8.00	
Fertilizer application	MD	4	8.00	32.00	20	8.00	
Weeding x2	MD	33	10.00	330.00	72	10.00	
Harvesting	MD	18	10.00	180.00	36	10.00	
Carriage	MD	5	12.00	60.00	12	12.00	
Gari processing	MD	10	12.00	120.00	76	12.00	
Labour	**MD**	**118**		1,146.00			
Money-out	**GHC**			1,376.00			
Money-in from yield	kg	7,000			24,000		
Sale of fresh tubers	kg	3,500	0.55	1,925.00	9,600	0.55	
Processed gari	kg	980	1.80	1,764.00	8,640	1.80	
Money-in	GHC			3,689.00			
Gross Margin	GHC			**2,313.00**			

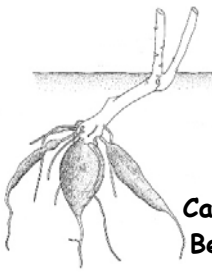
Solution to EXERCISE 6-1

		Maize (1 ha): Current practices			Maize (1 ha): Best practices		
Activity	**Unit**	**Q'ty**	**Price [GHC]**	**Total [GHC]**	**Q'ty**	**Price [GHC]**	**Total [GHC]**
Money-out: Inputs							
Seed	Kg	22	2.50	55.00	22	2.50	55.00
Fertilizer: NPK	Bag	0	89.00	0.00	5	89.00	445.00
Urea	Bag	0	84.00	0.00	2.5	84.00	210.00
Insecticide	Litre	3	24.00	72.00	3	24.00	72.00
Sack	Sack	25	4.00	100.00	25	4.00	100.00
Input Cost				227.00			882.00
Money-out: Labour							
Land preparation	MD	18	10.00	180.00	18	10.00	180.00
Planting	MD	13	10.00	130.00	13	10.00	130.00
Weeding	MD	23	10.00	230.00	23	10.00	230.00
Fertilizer application	MD	0	8.00	0.00	10	8.00	80.00
Harvesting	MD	8	8.00	64.00	12	8.00	96.00
Storing/insecticide use	MD	6	8.00	48.00	8	8.00	64.00
Threshing	MD	6	8.00	48.00	8	8.00	64.00
Bagging	MD	4	8.00	32.00	5	8.00	40.00
Labour	**MD**	**78**		732.00	**97**		884.00
Money-out	***GHC***			959.00			1766.00
Money-in	***GHC***						
Sale of maize	Kg	900	1.20	1080.00	3000	1.20	3600.00
Money-in	GHC			1080.00			3600.00
Gross Margin	GHC			**121.00**			**1834.00**

Solution to EXERCISE 6-2

		Citrus (1 ha, 275 trees): Current practices			Citrus (1 ha, 275 trees): Best practices		
Activity	**Unit**	**Q'ty**	**Price [GHC]**	**Total [GHC]**	**Q'ty**	**Price [GHC]**	**Total [GHC]**
Money-out: Inputs							
Poultry manure/EFB	Bag	0	8.00	0.00	65	8.00	520.00
Fungicide	Kg	3	22.00	66.00	3	22.00	66.00
Insecticide/protein bait	Litre	3	15.00	45.00	5	15.00	75.00
Foliar fertilizer	Litre	0	33.60	0.00	2.5	33.60	84.00
Fruit-fly traps	Pieces	0	10.00	0.00	12	10.00	120.00
Input Cost				111.00			865.00
Money-out: Labour							
Manure/EFB application	MD	0	12.00	0.00	4	12.00	48.00
Spraying insecticide	MD	7	12.00	84.00	10	12.00	120.00
Spraying fungicide	MD	6	12.00	72.00	6	12.00	72.00
Weeding	MD	12	12.00	144.00	25	12.00	300.00
Maintenance pruning	MD	0	12.00	0.00	24	12.00	288.00
Farm sanitation	MD	0	12.00	0.00	6	12.00	72.00
Harvesting	MD	40	36.00	1440.00	55	36.00	1980.00
Carriage	MD	25	36.00	900.00	41	36.00	1476.00
Labour	**MD**	**90**		2640.00	**171**		4356.00
Money-out	**GHC**			2751.00			5211.00
Money-in	**GHC**						
Sale of citrus	Kg	30,000	0.30	9,000.00	60,000	0.35	21,000.00
Money-in	GHC			9,000.00			21,000.00
Gross Margin	GHC			**6,249.00**			**15,789.00**

Solution to EXERCISE 6-3



Cassava (1 ha): Current practices | **Cassava (1 ha): Best practices**

Activity	Unit	Q'ty	Price [GHC]	Total [GHC]	Q'ty	Price [GHC]	Total [GHC]
Money-out: Inputs							
Insecticides	Litre	0	32.00	0.00	0	32.00	0.00
Fertilizer	Bag	0	90.00	0.00	5	90.00	450.00
Cuttings	Bundle	40	5.00	200.00	40	5.00	200.00
Firewood	Bundle	5	6.00	30.00	10	6.00	60.00
Input Cost				230.00			710.00
Money-out: Labour							
Land clearing	MD	20	10.00	200.00	42	10.00	420.00
Ploughing/ridging	MD	14	8.00	112.00	32	8.00	256.00
Planting/replanting	MD	14	8.00	112.00	54	8.00	432.00
Fertilizer application	MD	4	8.00	32.00	20	8.00	160.00
Weeding x2	MD	33	10.00	330.00	72	10.00	720.00
Harvesting	MD	18	10.00	180.00	36	10.00	360.00
Carriage	MD	5	12.00	60.00	12	12.00	144.00
Gari processing	MD	10	12.00	120.00	76	12.00	912.00
Labour	**MD**	**118**		1,146.00	**344**		3,404.00
Money-out	**GHC**			1,376.00			4,114.00
Money-in from yield	Kg	7,000			24,000		
Sale of fresh tubers	Kg	3,500	0.55	1,925.00	9,600	0.55	5,280.00
Processed gari	Kg	980	1.80	1,764.00	8,640	1.80	15,552.00
Money-in	GHC			3,689.00			20,832.00
Gross Margin	GHC			**2,313.00**			**16,718.00**

Finding opportunities to increase revenue and to reduce cost

After all the calculations, what are the opportunities to make better business? Determine the best opportunities by using gross margin, labour productivity and capital productivity.

EXERCISE 6-4: Rank the different enterprises based on each of these factors: Gross margin, labour productivity and capital productivity. Compare CURRENT and IMPROVED practices: How do gross margin, labour productivity and capital productivity change? How does the unit cost change?

Gross margin (GHC per ha) (Money-in MINUS Money-out):

ENTERPRISE	GHC per ha	RANK
Maize – Current practices	121.00	
Maize – Improved practices	1,834.00	
Citrus – Current practices	6,249.00	
Citrus – Improved practices	16,718.00	
Cassava – Current practices	2,313.00	
Cassava– Improved practices	16,718.00	

Labour productivity (GHC per day)
(Gross revenue MINUS Input cost, and the result of this DIVIDED BY labour needs):

ENTERPRISE	GHC per MD	RANK
Maize – Current practices	10.94	
Maize – Improved practices	28.02	
Citrus – Current practices	98.77	
Citrus – Improved practices	117.75	
Cassava – Current practices	29.31	
Cassava– Improved practices	58.49	

Capital productivity (GHC per invested GHC) (Gross margin/Variable costs):

ENTERPRISE	GHC per 1 GHC	RANK
Maize – Current practices	0.13	
Maize – Improved practices	1.04	
Citrus – Current practices	2.27	
Citrus – Improved practices	3.03	
Cassava – Current practices	1.68	
Cassava– Improved practices	4.06	

Unit cost (Variable costs/Yield)

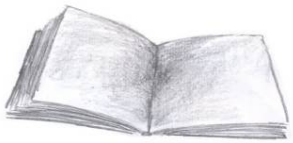
ENTERPRISE Current practices	GHC/Kg	> or <	ENTERPRISE Improved practices	GHC/Kg
Maize	1.07		Maize	0.59
Citrus	0.09		Citrus	0.09
Cassava	0.20		Cassava	0.17

EXERCISE 6-5: Fill in the gross margin per ha and the labour and capital productivities using information from Exercise 6-4.

Improved enterprises	Maize	Citrus	Cassava
Gross margin (GHC per ha) Money-in MINUS Money-out			
Labour Productivity (GHC per day) (Gross revenue - Input cost)/Labour needs			
Capital Productivity (GHC) Gross margin/Variable costs			

Now compare the different enterprises!

1. Which enterprise would you select if land is extremely expensive in your village?
2. How can generally the gross margin per hectare be improved?
3. Which enterprise would you select if labour is very scarce in your village?
4. How can generally labour productivity be improved?
5. Which enterprise makes best use of scarce capital?
6. How can generally capital productivity be improved?
7. Would an entrepreneur who is engaged in a business comprising these 3 enterprises consider his/her business as profitable?



Main Lessons

1. **The good agricultural entrepreneur knows that an enterprise is only profitable when the income received (money-in) is far greater than the total cost of production (money-out).**
2. **Comparing profits of different crops and production techniques helps to make decisions on using the land to maximize revenue.**
3. **Improved production techniques usually also increase labour productivity of an enterprise because they increase yield and lower the amount manual labour.**
4. **The unit cost of a crop indicates if it can compete on the international market with the same crop produced elsewhere. In the case of food crops, the unit cost indicates if it is better to buy the crop on the market – rather than to produce it.**

Module 7: How to Get Good Financial Services

The farm business owner has several ways of making money available for his/her farm business and for his/her household. The two common methods are through **savings** and mobilizing **credit**. Before accessing a loan, you should always first do some savings from the money that you receive as profit from businesses.

Savings

Why is it important to create savings?

List 6 methods by which you can save some of your income

What are the advantages and disadvantages of the methods you have just listed? Example:

	Bring money to a rural bank
Advantages	• The money is safe at the bank. • The bank pays interests on my savings. • Having savings at the bank facilitates a loan from the bank. • Savings at the bank reduces the risk of spending money impulsively because it is not immediately available.
Disadvantages	• The money is not immediately available.

Mobilizing finance

Another way of making money available for farm business and household consumption is to mobilize finance through credit. Credit is money borrowed from various sources such as banks, moneylenders, family and friends. This must be repaid over a certain pre-defined time periods, most often with interest or sharing of profit.

Micro-credit

Micro-credit has become very popular in many communities across the country offering loan services and saving schemes for farmers and other business men and women.

Micro-credit means small loans for people who need money for small projects that generate income or for urgent family needs such as health problems and education. It is meant to help improve people's quality of life by lending them a small amount of money for a short period of time. Remember, for a micro-credit:

1. The amount of money you can borrow is not much.
2. You need to pay it back in a short period of time, usually within six month.
3. The interest rate is very high (3 to 8% per month which is 36 to 96% per year)

Are there micro-credit institutions in your community? Name them!

What to enquire before you borrow money

1. Interest rate?
2. Hidden costs? Bank charges? Does the bank retain of some of the loan?
3. Loan disbursement: According to investment schedule? Or all at once?
4. Loan repayment: Monthly rates? One repayment? Repayment period? Grace period?
5. Guarantee requirements and costs of these guarantees: Guarantors? Farm land or any fixed assets as collateral?
6. Business plan needed to show to the bank? Past records of the enterprise needed?
7. Processing time of the application?

Interest Rate

Interest is the cost of borrowing money. Suppose you want to borrow 200 GHC for one month ("principle") either from a micro-credit company or from a money lender – the interest will be calculated as follows:

	Principal (GHC)	Interest rate per month	Amount of interest (GHC)	Total amount to be repaid (GHC)
Borrowed from money lender	200	10%	20	220
Borrowed from credit co-operative	200	5%	10	210
Borrowed from micro-finance company	200	8%	16	216

Loan Repayment Period

The agricultural entrepreneur should schedule repayment depending on when he/she gets income from sales of his/her products.

There are two options for a repayment schedule:

Option A: Paying back an instalment every week/month. Advantage: You pay back regularly little by little and you can avoid risk. Disadvantage: You need to have a regular source of income to cover the payment. Your principle does not reduce fast, because your first instalments are made up to a large extent of interest payment and only little of principle repayment.

Option B: Paying back the entire amount of loan at the end of the borrowing period. Advantage: Good for farmers who have income only at harvest or when selling animals. Disadvantage: Farmers default on their loan if the harvest fails.

Grace Period

This is the period between getting the loan and when the farmer has to start repaying it. Lenders need to understand that some enterprises may need a longer period of investment before realizing profits. You should negotiate a grace period that is most appropriate for your enterprise.

After you have borrowed the money, remember

1. Make the best use of the borrowed money keeping cost down.
2. Keep a record of your spending and income (farm and household).
3. Whenever you have difficulty paying your instalment, you should immediately inform the money lender.
4. Keep a record of your loan repayments.

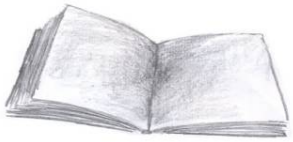
Exercise: Understanding the amount of interest paid

Suppose you borrowed money under the following conditions:

Principal: 2,000 GHC
Repayment scheme: Paying back in equal instalment every month for 12 months
Interest rate: 4% per month
Constant monthly repayment rate: 213 GHC

How much is the total interest paid?

_____ GHC



Main Lessons

1. **The good agricultural entrepreneur plans his/her cash flow (expenditures and money entries) all along the year to avoid shortages of money and unforeseen loans that are expensive.**
2. **To meet the needs of money in deficit months, the good agricultural entrepreneur makes savings with the surplus money from product sales. It takes discipline to do so.**
3. **Saving money with a rural bank or a micro-finance institution which is close by has the advantage that money is safe. Another advantage is that one is obliged to plan for expenses before withdrawing money.**
4. **There are different types of loans. Choose the type of credit that offers a convenient interest rate and repayments period. Always be sure of the terms and conditions attached to a loan offer before making a decision.**
5. **Determine how much you are going to borrow according to how easily you can pay it back. The Cash Flow Plan (Module 4) and the Gross Margin Calculation (Module 5) are the appropriate tools to determine the usefulness of borrowing money.**
6. **Once the loan is received, the good agricultural entrepreneur sticks to the objective of the investment. Otherwise, the agricultural entrepreneur is likely to have repayment problems.**

Module 8: Business and Household Expenses

In Module 4 we were already introduced to the Cash Flow Table. A Cash Flow Table records all the expenditure in one column and the income in another column for each single month. Plan your cash flow in each month for your household as well as each enterprise to ensure that enough cash is always available to the family and the business.

Now let us draw a household table for the Household of Mr. Ali who cultivated maize, citrus and cassava **using local practices** (see Exercises 6-1 to 6-3).

1. Mr. Ali bought his inputs for maize in March, for citrus in September and for cassava in April.
2. He sold half of his maize in September. The other half he used to feed his family.
3. He sold 2/3 of his citrus to the factory (in January) and 1/3 to market women in December.
4. He is usually not selling fresh cassava tubers as he has a large family. His wife sells processed gari, usually in March, April and May.
5. He acquired a loan of 3,000 GHC in July at 4% interest per month payable in 5 months from August at a constant monthly repayment rate of 674 GHC.
6. On food he spends per month: Rice (80 GHC), cooking oil (60 GHC), fish (50 GHC), vegetables (50 GHC), milk (30 GHC), palm oil (30 GHC), tin tomatoes (20 GHC), sugar (10 GHC), and others (50 GHC). Total: 400 GHC.
7. Other household expenses include:

Other household expense	**Months**	**Amount [GHC]**
School fees	January, May, September	80, 120 and 180 GHC
Health bills	Every month	30 GHC
Water and electricity	Every month	25 GHC
Phone credit	Every month	25 GHC
Events (funeral, church, etc.)	April, August, December	100, 200, 300 GHC
Loan repayment	August to December	674 GHC per month
Others	Every month	50 GHC

Using this information draw a Cash Flow Table for **Ali's Household** by filling in the shaded boxes in the table on the next page.

EXERCISE: Cash Flow Calculation for Ali's Household

	Jan	Feb	Mar	April	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Money-in													
Maize													
Citrus													
Cassava													
Loan disbursement													
Total Money-in													
Money-out													
Inputs													
Maize													
Citrus													
Cassava													
Total Inputs													
Labour													
Maize				180	130	115	115	112	80				
Citrus	1560							72	156	72		780	
Cassava		360	200	224	32	165	165						
Total Labour													
Household													
Food													
School fees													
Health													
Bills and phone													
Events													
Others													
Loan repayment													
Total Household													
Monthly Balance													
Net Cash Flow													

SOLUTION: Cash Flow Calculation for Ali's Household

	Jan	Feb	Mar	April	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Money-in													
Maize									540				**540**
Citrus	6000											3000	**9000**
Cassava			588	588	588								**1764**
Loan disbursement							3000						**3000**
Total Money-in	**6000**	**0**	**588**	**588**	**588**	**0**	**3000**	**0**	**540**	**0**	**0**	**3000**	**14304**
Money-out													
Inputs													
Maize			227										**227**
Citrus									111				**111**
Cassava		30		200									**230**
Total Inputs	**0**	**30**	**227**	**200**	**0**	**0**	**0**	**0**	**111**	**0**	**0**	**0**	**568**
Labour													
Maize				180	130	115	115	112	80				**732**
Citrus	1560							72	156	72		780	**2640**
Cassava		360	200	224	32	165	165						**1146**
Total Labour	**1560**	**360**	**200**	**404**	**162**	**280**	**280**	**184**	**236**	**72**	**0**	**780**	**4518**
Household													
Food	400	400	400	400	400	400	400	400	400	400	400	400	**4800**
School fees	80				120				180				**380**
Health	30	30	30	30	30	30	30	30	30	30	30	30	**360**
Bills and phone	50	50	50	50	50	50	50	50	50	50	50	50	**600**
Events				100				200				300	**600**
Others	50	50	50	50	50	50	50	50	50	50	50	50	**600**
Loan repayment								674	674	674	674	674	**3370**
Total Household	**610**	**530**	**530**	**630**	**650**	**530**	**530**	**1404**	**1384**	**1204**	**1204**	**1504**	**10710**
Monthly Balance	**3830**	**-920**	**-369**	**-646**	**-224**	**-810**	**2190**	**-1588**	**-1191**	**-1276**	**-1204**	**716**	**-1492**
Net Cash Flow	**3830**	**2910**	**2541**	**1895**	**1671**	**861**	**3051**	**1463**	**272**	**-1004**	**-2208**	**-1492**	

What do you notice from the cash flow table for Ali's Household?

1. Mr. Ali needs to spend more money than he earns.
2. Although Mr. Ali takes out a loan in July, he has difficulties paying back the loan from September: The net cash Flow between October and December is negative.
3. At the end of the year, he is highly indebted.

We will now visit Mr. Mensah's Household to see how he fared in his cash flow calculation.

Mr. Mensah cultivated maize, citrus and cassava according to **improved practices** (see Exercises 6-1 to 6-3).

1. Mr. Mensah buys his inputs for maize in March, for citrus in September and for cassava in April.
2. He sells most of his maize (2500 kg) in June when the maize price is expected high. The balance (500 kg) he uses to feed his family.
3. He sells his citrus to the factory in January (6000 GHC), in June (3000 GHC), in July (3000 GHC) and December (9000 GHC).
4. He is not selling fresh cassava tubers as he has a large family. His wife sells processed gari, usually in March, April and May.
5. With the warehouse receipt he qualifies for a loan which he invests into a cassava grater. He receives a loan of 3000 GHC in January at 4% interest per month payable in 3 monthly rates from April at a constant monthly repayment rate of 1169 GHC.
6. Food and the other household expenses are the same as for Household One.

Using this information draw a Cash Flow Table for **Mr. Mensah's Household** by filling in the shaded boxes in the table on the next page.

EXERCISE: Cash Flow Calculation for Mensah's Household

	Jan	Feb	Mar	April	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Money-in													
Maize													
Citrus													
Cassava													
Loan disbursement													
Total Money-in													
Money-out													
Inputs													
Maize													
Citrus													
Cassava													
Total Inputs													
Labour													
Maize				180	170	115	155	160	104				**884**
Citrus	2304	288					48	150	192	150	72	1152	**4356**
Cassava		1416	420	688	160	360	360						**3404**
Total Labour	**2304**	**1704**	**420**	**868**	**330**	**475**	**563**	**310**	**296**	**150**	**72**	**1152**	**8644**
Household													
Food													
School fees													
Health													
Bills and phone													
Events & Others													
Cassava grater													
Loan repayment													
Total Household													
Monthly Balance													
Net Cash Flow													

SOLUTION: Cash Flow Calculation for Mensah's Household

	Jan	Feb	Mar	April	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Money-in													
Maize						3000							**3000**
Citrus	6000					3000	3000					9000	**21000**
Cassava			5184	5184	5184								**15552**
Loan disbursement	3000												**3000**
Total Money-in	**9000**	**0**	**5184**	**5184**	**5184**	**3000**	**3000**	**0**	**0**	**0**	**0**	**9000**	**39552**
Money-out													
Inputs													
Maize			882										**882**
Citrus									865				**865**
Cassava		60		650									**710**
Total Inputs	**0**	**60**	**882**	**650**	**0**	**0**	**0**	**0**	**865**	**0**	**0**	**0**	**2457**
Labour													
Maize				180	170	115	155	160	104				**884**
Citrus	2304	288					48	150	192	150	72	1152	**4356**
Cassava		1416	420	688	160	360	360						**3404**
Total Labour	**2304**	**1704**	**420**	**868**	**330**	**475**	**563**	**310**	**296**	**150**	**72**	**1152**	**8644**
Household													
Food	400	400	400	400	400	400	400	400	400	400	400	400	**4800**
School fees	80				120				180				**380**
Health	30	30	30	30	30	30	30	30	30	30	30	30	**360**
Bills and phone	50	50	50	50	50	50	50	50	50	50	50	50	**600**
Events & Others	50	50	50	150	50	50	50	250	50	50	50	350	**1200**
Cassava grater	3000												**3000**
Loan repayment				1169	1169	1169							**3507**
Total Household	**3610**	**530**	**530**	**1799**	**1819**	**1699**	**530**	**730**	**710**	**530**	**530**	**830**	**13847**
Monthly Balance	**3086**	**-2294**	**3352**	**1867**	**3035**	**826**	**1907**	**-1040**	**-1871**	**-680**	**-602**	**7018**	**14604**
Net Cash Flow	**3086**	**792**	**4144**	**6011**	**9046**	**9872**	**11779**	**10739**	**8868**	**8188**	**7586**	**14604**	

Now we have seen the monthly cash flow for Mr. Mensah. Do you notice any difference between the cash flows of Mr. Ali and Mr. Mensah? Let us compare the Net Cash Flows for both households:

1. All in all, Mr. Mensah earned more than he spent.
2. He didn't need a loan for his input, labour and household expenses.
3. Instead, he took an investment loan to be able to better process cassava. He asked the bank for a grace period of two months so that he could repay the loan from April to June when he had enough income.
4. At the end of the year, his Net Cash Flow is positive and he can save some money for next year's operations.

Your cash flow must always be positive. A negative cash flow is not acceptable. If the cash flow is negative, there is no money available to pay for inputs and labour. Usually you can take out a loan to get a positive cash flow throughout the year.

Exercise: In the "Current situation" below, the cash flow is negative.

Current situation

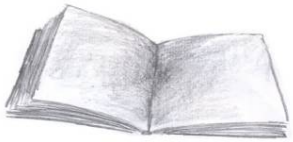
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Loan disbursement	2000											
Loan repayment		500	500	500	500	500						
Monthly Balance	**1397**	**-660**	**-1085**	**-619**	**406**	**585**	**-610**	**1260**	**2110**	**-647**	**1340**	**-260**
Net Cash Flow	**1397**	**737**	**-348**	**-967**	**-561**	**24**	**-586**	**674**	**2784**	**2136**	**3476**	**3216**

Negotiate for a loan with a 3 months grace period in which only interest is paid, but no loan repayment! From February to April 100 GHC interest payment is due each month; and from May to September loan repayment rates are 500 GHC each month. Fill in the shaded boxes. ► How does the cash flow look like now? ► What are the total cost of the loan?

With a 3 months grace period

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Loan disbursement	2000											
Loan repayment		100			500							
Monthly Balance	**1397**	**-260**	**-685**	**-219**	**406**	**585**	**-1110**	**760**	**1610**	**-647**	**1340**	**-260**
Net Cash Flow	**1397**	**1137**										

► Is there still a month with a negative cash flow (i.e. no money in the cash box to pay for farm inputs and family needs)? ► For how much has the cost of the loan increased?



Main Lessons

1. **The good agricultural entrepreneur plans his/her expenditures (including the household expenses) as well as the money entries well in advance to avoid shortages of money and unforeseen loans that are expensive.**
2. **To meet the needs of money in deficit months, the good agricultural entrepreneur makes savings with the surplus money from product sales. It takes discipline to do so.**
3. **When negotiating for a loan, make sure that the conditions are such that the loan helps you to have money in your cash box every month. The cash box must never be empty. Adjust loan disbursement rates, grace period and loan repayment rates to your cash flow needs.**
4. **Using improved agricultural practices will result in higher incomes than sticking to unimproved local practices. A good agricultural entrepreneur uses all techniques that give higher income and maximum profits.**

Module 9: Farm Business Risk and Marketing

Farm business risk

Risk is defined as any factor that may cause losses to the farm business. Farmers may have little control over such risks. However, in a good business plan, the entrepreneur will show that he/she either takes measures to reduce the risk – or that the enterprise is still profitable even if the risk situation occurs.

During the planning, the good agricultural entrepreneur needs to determine what the impact of risks could be on revenues.

Examples of risks

	Risks	Examples
1.	Production risk	Lack of rains may reduce the maize yield from 900 kg/acre to 600 kg/acre.
2.	Marketing risk	The market price of citrus may fall from 0.35 GHC per kg to 0.30 GHC per kg.
3.	Financial risk	Inability to pay off a previous loan may render a farmer incapable of accessing micro-credit to buy inputs.
4.	Institutional risk	The extension officer who always assisted the farmer did not get paid and stopped working.
5.	Human risk	Mensah got a good job so that he has no time to take proper care of his farm. In his absence his workers steal and perform poorly.

Risk management strategies

Risk reducing strategies include:

- Use of risk-reducing inputs such as protective copper sprays against diseases
- Diversification of production: Food crops, industrial crops, livestock, tree crops
- Spread of sales over a longer time and selling to different merchants
- Seeking of information on longer-term market trends
- Subscribing to an index-based insurance against extreme weather conditions

Remember, all measures to minimise risk cost money. Sometimes the costs of minimising risks are making the production too expensive!

How does weather insurance work?

The Ghana Agricultural Insurance Programme (GAIP) uses weather stations installed in various locations across the country to collect rainfall data. The collected data is continuously measured against a baseline rainfall data for that area. Therefore, if the rainfall pattern falls below this baseline, a drought is triggered by the GAIP system and the affected farmers are paid money automatically to cover for their losses associated with the drought.

Your benefits:

1. Available for maize, millet, sorghum, soya
2. Get compensation when your farm is affected by drought or low rainfall
3. No follow-up on claims necessary by you, because of automatic payouts

How does a farmer get insured?

1. Call your local Agent before the beginning of the season:
   0201468010 or 0207069499
2. Pay insurance premium to the agent
3. Enjoy insurance for the whole season
4. Get a payout in case of severe drought

Marketing of farm produce

What are the elements of marketing?

1. **The customer:** Marketing begins with the customer, not the product. It is important to know what the customer wants before you produce.
2. **The market:** The farmer needs to have an idea where to sell the product to. This will determine the costs of marketing.
3. **Promotion:** The farmer should let the buyer know that he/she has the needed products sufficiently available, in good quality, at a fair price and at reliable delivery terms.
4. **Trust**: Good marketing occurs when the customers trust the farmer. The customers should feel they are not being cheated and they are getting value for their money.

Market price determination

Supply and Demand

In Ghana sellers and buyers are allowed to freely negotiate and agree on the prices of products on the market. This is referred to as free or open market. In a free market, prices for inputs and products are determined by supply and demand.

1. **Supply** is what producers are willing to sell at the market price.
2. **Demand** is how much consumers are prepared to buy at the market price.

When the quantity **demanded** by buyers goes down, the price does down, too.
When, however, the quantity **supplied** by producers goes down, the price increases.

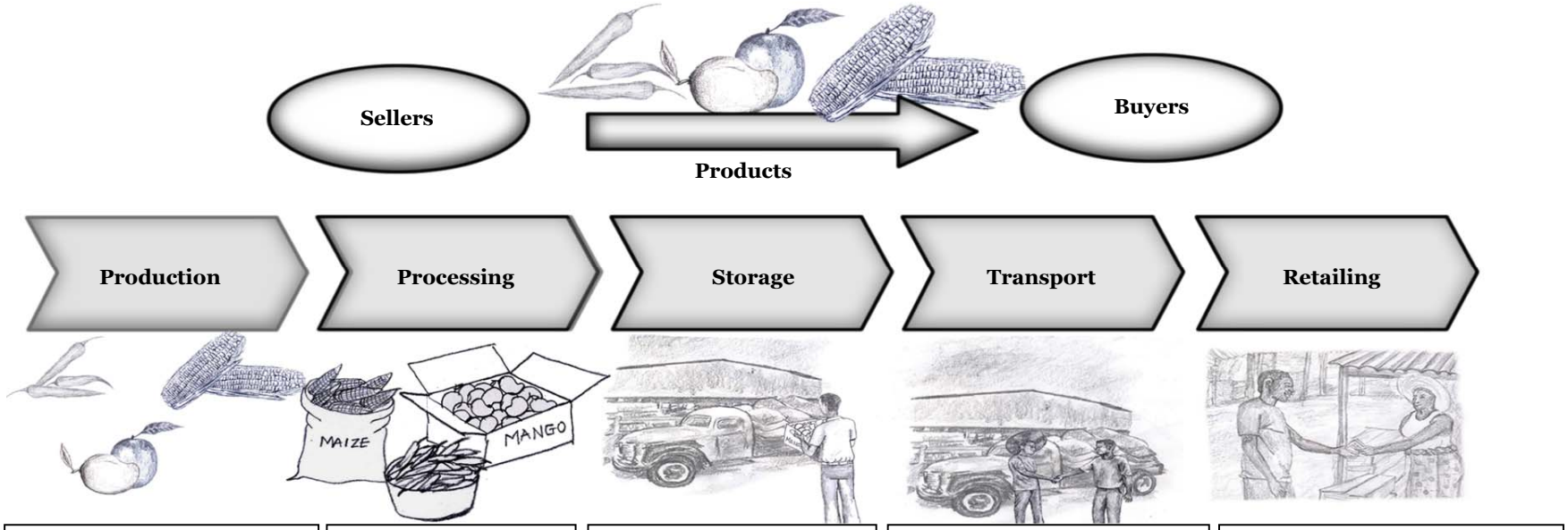
Factors that affect demand for agricultural products include:

1. The current market price of the product
2. The culture of the consumers
3. The increase of population in a country
4. The increase in wealth in the country
5. The nature of the product (staple food or luxury product)
6. Prices of competing (imported) products
7. Range of alternative products available

Factors that affect supply of agricultural products include:

1. The past market price of the product
2. The price of inputs and labour
3. Credit opportunities for the farmer
4. The productivity of the farmer
5. The climate and weather conditions
6. Storage opportunities
7. Risk reduction opportunities

Different stages in marketing farm products

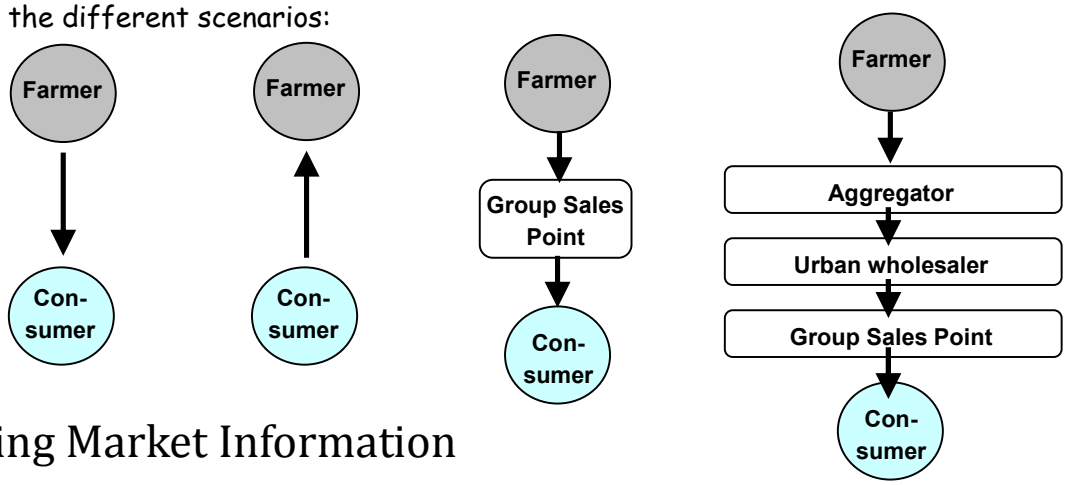


The farmer produces what the market needs. He follows the specifications of the buyer, e.g. crop protection measures; water content (maize); sugar content and ripeness (fruits)	Sorting, grading, cleaning, drying, packaging is first-step processing. Processing can go as far as: Making flour (maize) or juice (fruits)	Entrepreneurs at this stage assume important functions, such as financing the product; loading and unloading trucks; further cleaning and drying; repacking; weighing; etc.	Transporting is an important function in the marketing chain. Transporters pay for getting the product to the market in a safe and timely manner to meet the orders placed by customers.	The retailer assumes a number of important marketing functions: Pre-financing; advertising and presentation of the product; product distribution; communicating the consumers' demand back along the chain.

Often farmers compare the prices paid to them by traders with the prices consumers pay for the same product. They tend to feel cheated. However, all entrepreneurs along the value chain assume important functions. And farmers need to decide whether they can really take on these functions and the costs associated with them. Think about: ▶ Pre-financing of the product ▶ Investments into processing equipment ▶ Payment for transport ▶ Cost-effective storage ▶ Giving a guarantee to the customer for timely delivery of the ordered quantities ▶ Effective distribution ▶ Payment for licenses and certification

Marketing Channels

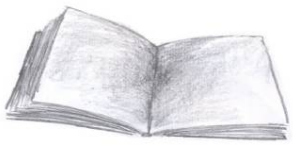
What are the channels which your product goes through from the farm to the plate? Discuss the different scenarios:



Seeking Market Information

Many farmers are unable to tell the current prices of the very products they are producing. However, market information helps farmers to reduce the risks associated with marketing. Market information helps to

1. Decide where to market
2. Decide whether or not to store
3. Decide what to grow in the following season
4. Decide whether to grow "out-of-season" produce



Main Lessons

1. **A good agricultural entrepreneur understands that risk and uncertainties are associated with every step in production and marketing. He/she adequately plans ways of minimizing their occurrence.**
2. **The most useful tool a farmer can have to help in risk management is good information. Keeping records of previous production is a useful tool in informing the farmer of risk possibilities and their chances of occurring.**
3. **Marketing is as important as production itself. A good agricultural entrepreneur appreciates all the stages involved in the marketing process and understands the needs of the different actors engaged in marketing.**
4. **In a free market, demand & supply are the main factors that determine the price of a product. A clever farmer does not overreact to an exceptionally good price (and grow much more the following year), because since nearly all other will farmers do so, the price of the product will sharply drop the following year.**
5. **A good entrepreneur carefully calculates his/her marketing costs in order to focus on what he/she is best in and to be able to maximize profits.**

Module 10: The Entrepreneur and FBOs

What are Farmer Based Organizations?

A farmer based organization (FBO) can be described as a group of farmers:

1. Who come together own their own free will
2. Who work together to achieve shared objectives
3. Who find it difficult to achieve these objectives individually.

A good FBO uses the services of extension agents to learn about new technologies

FBOs may facilitate access to services such as:

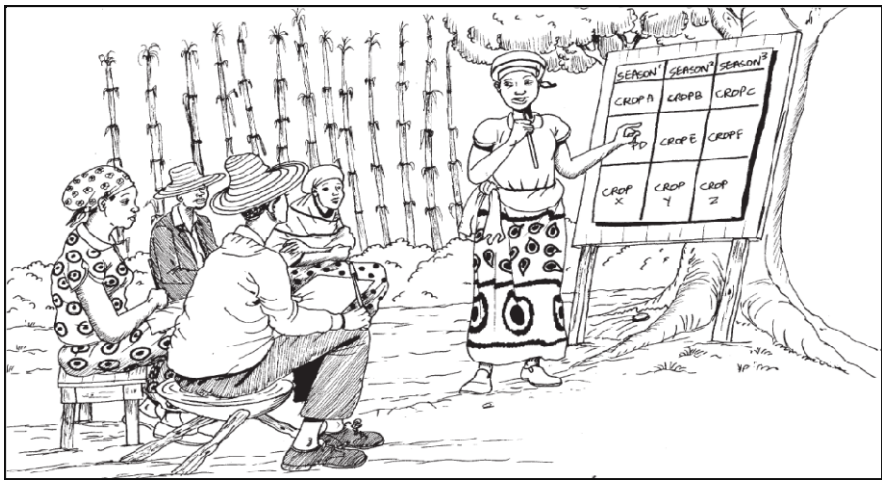
1. **Training** (e.g. a Farmer Business Schools can be organized for members)
2. **Extension** (e.g. an extension worker meets the entire group to assist them to do farm business planning & train them in the field on using improved technologies)
3. **Finance** (e.g. members can access a loan from the FBO via a micro-credit system)
4. **Certification** (e.g. the entire FBO gets certified for GlobalGAP, organic or Fair Trade which lowers the individual certification costs)
5. **Information** (e.g. FBO can subscribe to market and price information and provide it to its members)
6. **Farm maintenance** (e.g. members can access spraying, pruning, weeding services by service gangs that are called in – or even organised – by the FBO)
7. **Marketing** (e.g. the FBO leadership negotiates prices and terms of delivery with a processing factory or a buyer on behalf of the members)

FBOs play an important role in the farmer's business where they reduce the costs of services and inputs by acting together, for example through:

1. Shared participation in trainings
2. Group certification to reduce the costs for the individual member
3. Joint negotiation of a more favourable price for inputs due to the bulk of the order
4. Joint communication with the buyer to reduce the individual costs of searching for market and to negotiate more favourable prices
5. Joint transport to reduce the unit cost

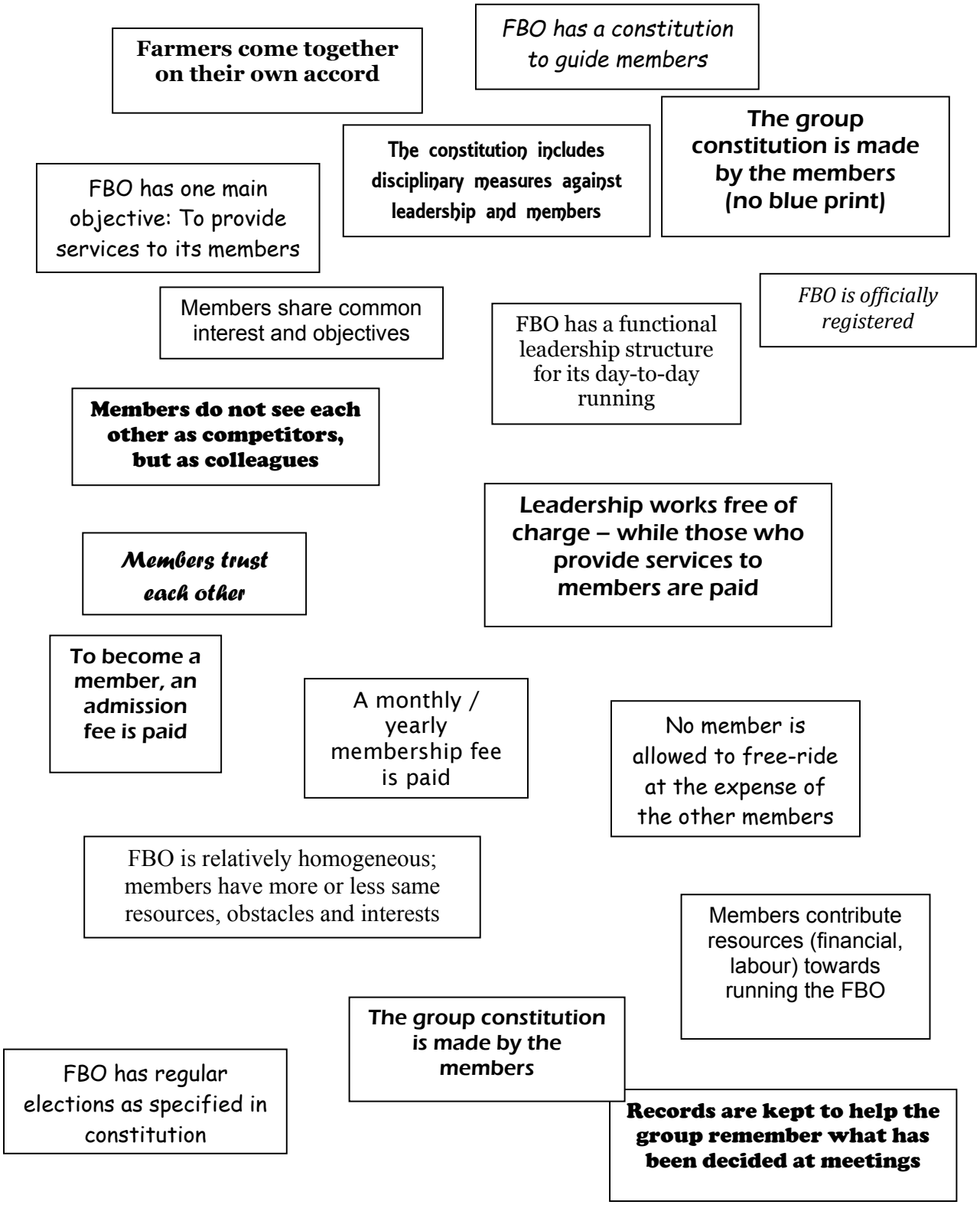
If FBOs are so important, then why do they often fail? 15 possible reasons:

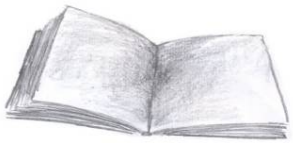
1. Failure to identify the group's strength, weaknesses, opportunities and threats (SWOT)
2. Lack of clearly defined objectives
3. Lack of clearly formulated and costed services for members, no good business plan
4. Low economic benefits to members, who could also achieve their goals individually
5. No constitution or a constitution that is not known to the members
6. Poor management and leadership
7. Elections not held, especially to vote poor leadership out of office
8. Lack of commitment from members
9. Lack of resources, no regular contributions
10. Free-riding of some members at the expense of the entire group
11. Poor communication inside the FBO
12. Poorly maintained records and no follow-up on action points
13. Long meetings at times when the agricultural entrepreneur should be on his farm
14. Group is too big and hence the travel costs of joining group meetings are high
15. Membership not homogenous enough (e.g. small and large farmers with different interests in one FBO)



In a good FBO everybody contributes actively.

Exercise: Brainstorm and note down on cards: What are most important pillars of an FBO without which it could not operate well?





Main Lessons

1. **Agricultural entrepreneurs (men and women) form groups or associations to do things they are not able to do alone.**
2. **Groups or associations of agricultural entrepreneurs have a common business objective. To achieve their common goal, the members learn together and from each other.**
3. **For service providers, it is easier and cheaper to work with farmer groups or associations than with individuals. A group of agricultural entrepreneurs can therefore more easily seek financial services or information on production techniques from extension.**
4. **Also for buyers of agricultural products, it is easier and cheaper to work with farmer groups or associations than with individuals.**
5. **Good leaders of farmer associations play their role to improve the business of all members.**
6. **However, free-riding by some member at the expense of the whole group must be prevented. Also in an FBO – there is no free lunch!**
7. **Regular contributions to the FBO by its members help the association to better carry out its functions to benefit its members.**

CONGRATULATIONS!!!

You have completed all the 10 Modules.

Begin to put them into practice!!

… and REMEMBER: Farming is a Business!!!

Ideas for the way forward

1. What can you do to continue learning about farm business management after graduating from the FBS programme?
2. What will you do to become a good agricultural entrepreneur in practice?
3. Can you apply what you have learned to other enterprises? How?
4. How can you transfer the learning to other farmers in your area?
5. Can you become FBS facilitator? What would you need to learn to be effective facilitator?

Finally, please rate yourself on the following **Entrepreneurial competencies**		Rating		
				
	Like being your own boss?			
	Self-confidence?			
	A "never, never, never quit" attitude?			
	Willing to devote a very large time to your business?			
	Willing to risk money to invest into a new enterprise?			
	Prudent enough to gather all available information before?			
	Able to systematically analyse farm performance?			
	Aware that without improved practices profits will remain low?			
	Able to learn from failures?			
	Thinking strategically, working on long-term investments?			
	Meticulous enough to prepare good business records?			
	Not afraid of numbers and familiar with the calculator?			
	Able to plan your activities for the year ahead?			
	Honest and man/woman of integrity?			
	Not compromising on the well-being of your family?			
	Being a man/woman of values?			
	Reputation of repaying loans in time without being reminded?			
	Able to build a trust relation with your customers?			
	Able to motivate your workers and build loyalty?			
	Able to form alliances with other farmers and processors?			
	Ready to share your lessons learnt with other farmers?			
	Ready to invest yourself into a FBO or an association?			
	Able to inspire and energise other farmers?			
	Interested in talking to costumers &research the market?			
	Able to talk to your off-takers at eye-level?			
	Able to negotiate loans that suit your cash flow situation?			