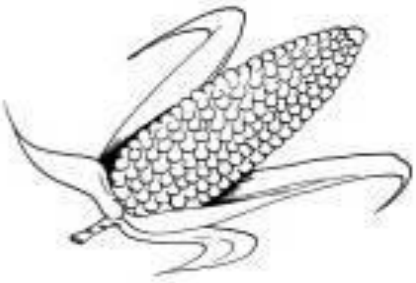
MINISTRY OF FOOD & AGRICULTURE
REPUBLIC OF GHANA

Sustainable Agricultural Supply Chain Initiative

ComCashew

Farmer Business School



Training Workbook for Cashew, Maize and Groundnut production systems

Ghana

Edition 1

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Farmer Business School

Training Workbook for Cashew, Maize and Groundnut production systems

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ISBN …….

Foreword

The Farmer Business School (FBS) approach was developed for cocoa production systems in 2010 by GIZ/Sustainable Cocoa Business and local partners from Ghana, Nigeria, Côte d'Ivoire, Cameroun and Togo. Over 480,000 cocoa producers have been trained by local partners in these 5 countries with the support of the Federal Ministry of Economic Cooperation and Development of Germany (BMZ) and other donors such as Bill & Melinda Gates Foundation, World Cocoa Foundation, NIRSAL and the European Union. Since 2012, other GIZ programs, as well as public and private partners, have adapted FBS to other food and export commodities. The total outreach in Africa exceeds 1,400,000 smallholders in 22 African countries.

The Competitive Cashew initiative (ComCashew), which is part of the umbrella program Agricultural Value Chains for Sustainable Development (A4SD) is funded in its third phase by the German Federal Ministry for Economic Cooperation and Development (BMZ). Jointly with private and public actors, ComCashew constitutes a new era of a multi-stakeholder partnership aiming to achieve a sustainable poverty reduction in the project countries – Benin, Burkina Faso, Côte d'Ivoire, Ghana, Mozambique and Sierra Leone – by enhancing the competitiveness of African cashew smallholders, processors and other actors in the value chain.

The objective of ComCashew focuses on four key areas:

- Production: Improve productivity and increase quantity and quality of production.
- Processing: Improve efficiency, quantity and quality of processing.
- Supply Chain Linkages: Build sustainable market linkages at national, regional and international levels.
- Sector Organisation: Establish an enabling environment: Advocate policies that favour the cashew sector.

Achievements of ComCashew:

- Over 620,000 farmers trained (~15% women) since 2009.
- >530,000 full-time job equivalents created in production (~75% of total jobs) and processing and trade (~25% of total jobs), in cooperation with >170 private & public partner

The Agri-Business Facility for Africa (GIZ/ABF) has supported the development of this current Training Notebook for the context of Ghana.

FBS-Trainers undergo a special qualification program with practical classroom and learning sessions with farmers to deliver the training, in line with the principles of adult and discovery learning and the quality standards of FBS.

Request your Certificate with serial number and signature of your trainer at the end of the training

Content

Farmer Business School: What is it about?

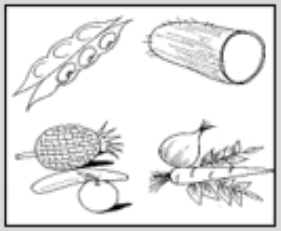
What are the advantages?

The skills learned at the Farmer Business School will allow the farmers to become Better entrepreneurs who:

- Take advantage of improved technologies and market opportunities to increase
- income.
- Plan and adapt their production to assure food security and quality for the family.
- Target decisions and investments in planting, replanting or regeneration of cashew.
- Lead professional negotiations with buyers, input suppliers, credit institutions and
- land owners.
- Manage financial means and credit.

M1 Is farming a business?

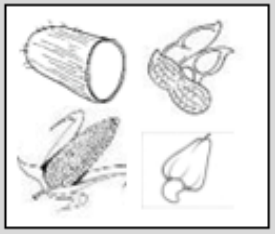
M2 Know the units to know your assets?



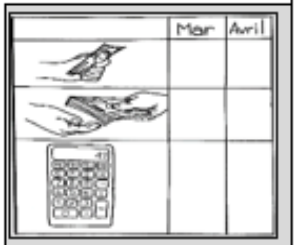
M3 Manage your farm for enough food

M4 Money-Out/Money-In-Know whether you do good business

M5 Decisions for more income

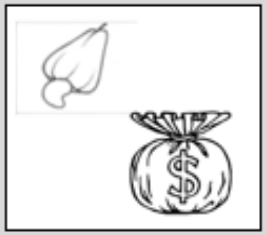


M6 Opportunities to diversify your farm enterprises



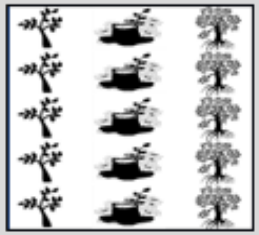
M7 Manage your money throughout the year

M8 How to get good financial services



M9 Make more money with quality cashew

M10 Benefits from membership in farmer organizations



M11 Investing in replanting of cashew

M12 Becoming an entrepreneur in Practice

Module 1 Is farming a business?

What examples of businesses do you know?

Examples of businesses	*Start and end of activities*	*MONEY OUT*	*MONEY IN*
Construction business 	One can start when one has a contract with a client One construction site follows the next.	One needs **capital** for the machines, the materials and the employees.	Gives income when the construction is completed.
Trading 	One can start and stop commerce at any time.	One needs **capital** to buy merchandise and to pay employees.	Gives income all year long.
Processing of agricultural products Groundnut and Shea butter 	One can start the processing at any time if one has the equipment and primary materials. One stops the processing when the primary material is no longer available.	One needs **capital** to buy raw material and equipment.	Gives income all year long as long as you have raw material.
Agriculture My farm is my business 	One needs to start agricultural work at the beginning of the season. One cannot stop fieldwork before harvest (or the use of the seedlings).	One needs **capital** for tools, equipment, inputs and paid workers. Money is spent every day (« and is not even calculated »).	Gives income after harvest, during sales.

What do you need to produce (collect examples)?

Inputs	Tools and equipment	Labour	Money	Land
Seeds Insecticide Fungicide Mineral fertilizer	Machete, hoe Sprayer Drying bay	Household/family workforce Paid workers	Own money Credit	Owned Land Rented land Share-cropping

The market for agricultural produce	The market for inputs and equipment
• The location of the market. • Who wants to buy the product? • The quality of the product that is demanded by the market. • The price of the product compared to other markets.	• The locations of sale. • Who sells the inputs and equipment? • The quality of the inputs and equipment. • The selling price of the inputs and equipment.

What does one need to know about the market if one wants to do good business?

Main Lesson

The agricultural entrepreneur plans and organises themself to have inputs, tools, labour and money necessary for production ready at the right time.

How do the prices of agricultural products change?

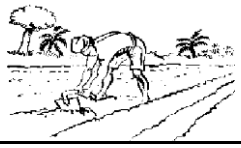
The prices of agricultural products may change according to the season of the year.	The prices of agricultural products change between years.
• In times of abundance, prices are at their lowest. • In times of scarcity (during the dry season for example) prices are at their highest.	• The price of a product that is needed by more and more people will rise from one year to the next. • The price of a product that is produced in greater abundance will fall from one year to the next.

Main Lesson

To do successful business, the agricultural entrepreneur informs themself on the prices (of inputs and produce) at different markets. This allows them to plan production and to make decisions on the purchase of inputs and the sale of produce.

Module 1 Agricultural Calendar to plan the production of maize.

The times of work…	
during the main season are shown by a square	■
during the off-season are shown by a circle	●

The tasks of the entrepreneur		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	Prepare the field												
	Plough the field												
	Purchase seeds												
	Sow												
	Fertilizer												
	Weeding												
	Apply insecticide												
	Harvest and Store												

Main Lesson

For a good yield, the agricultural entrepreneur plans to do the necessary work in the field and apply inputs at the right time.

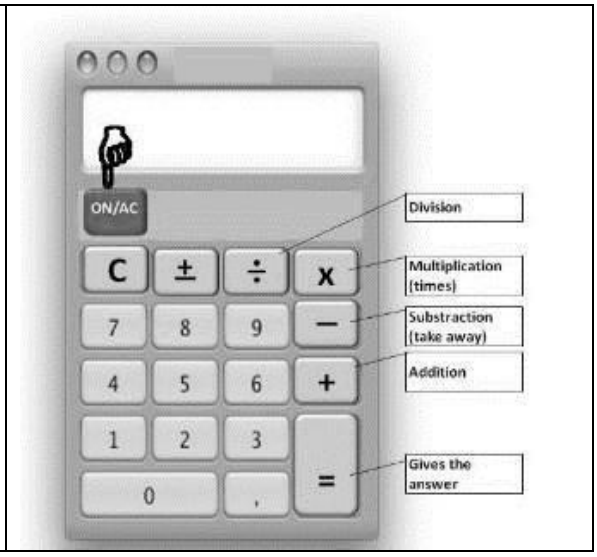
How to use a calculator

What is a Calculator?
A calculator is a tool you can use to do addition, subtraction, multiplication and division

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

To clear a wrong number
Press C/CE

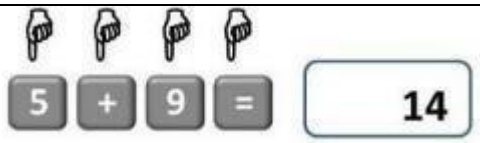
To start a new calculation
Press the **ON/AC** to clear



Addition (plus)

Example:
5 + 9 = 14

Type



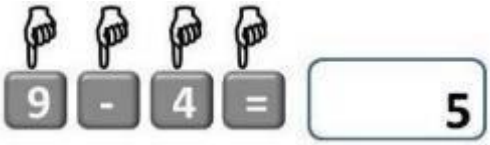
Example:
10 + 20 = 30

Type

Subtraction (take away)

Example:
9 – 4 = 5

Type

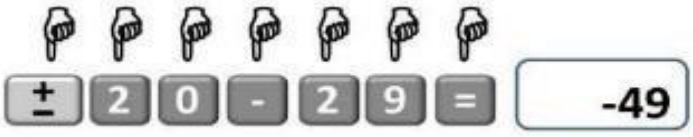


Example:
100 – 20 = 80

Type

Example:
-20 – 29 = - 49

Type



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

Multiplication (times)

Example:
25 x 12 = 300

Type

Example:
22 x 27 = 594

Type

Division (divide)

Example:
26 / 2 = 13

Type

Example:
123 / 3 = 41

Type

Here are some examples. Try to get the same result.

Addition (plus)	
100 + 250 =	350
124 + 24 + 52 =	200
1035 + 465 + 120 =	1620

Subtraction (take away)	
33 - 13 =	20
175 - 35 =	140
1243 - 12 =	1231

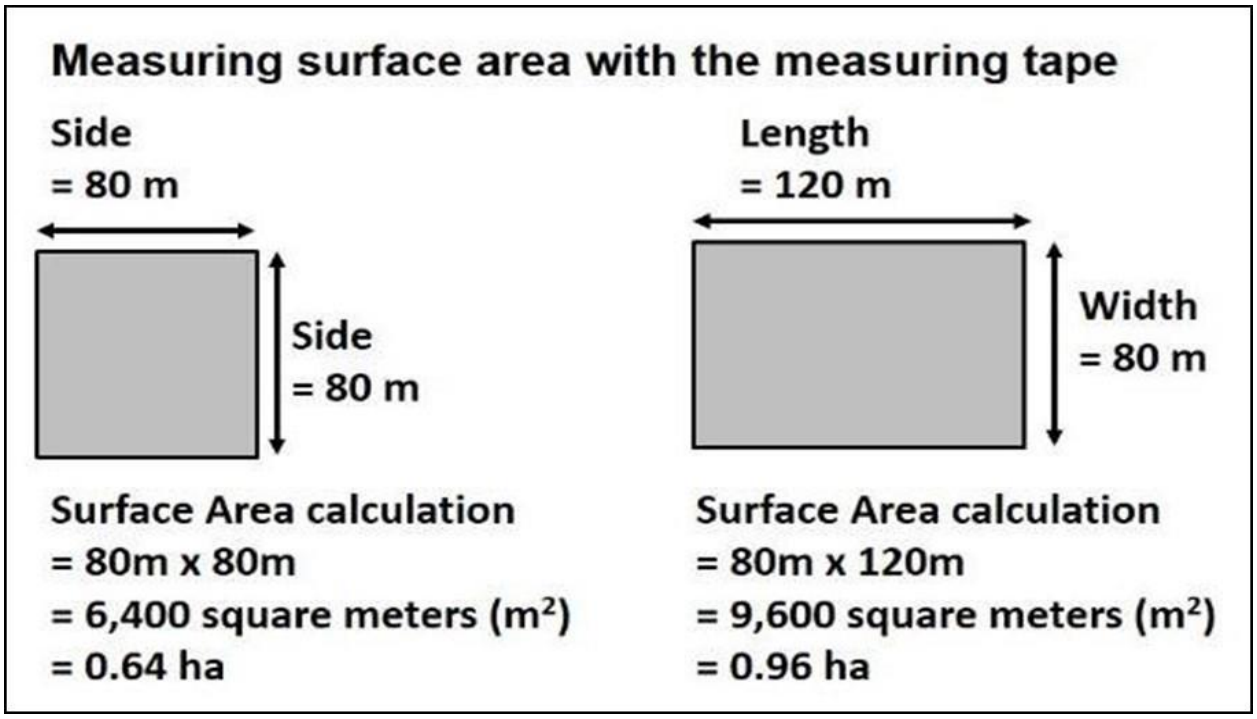
Multiplication (times)	
33 x 3 =	99
75 x 5 =	375
12 x 12 =	144

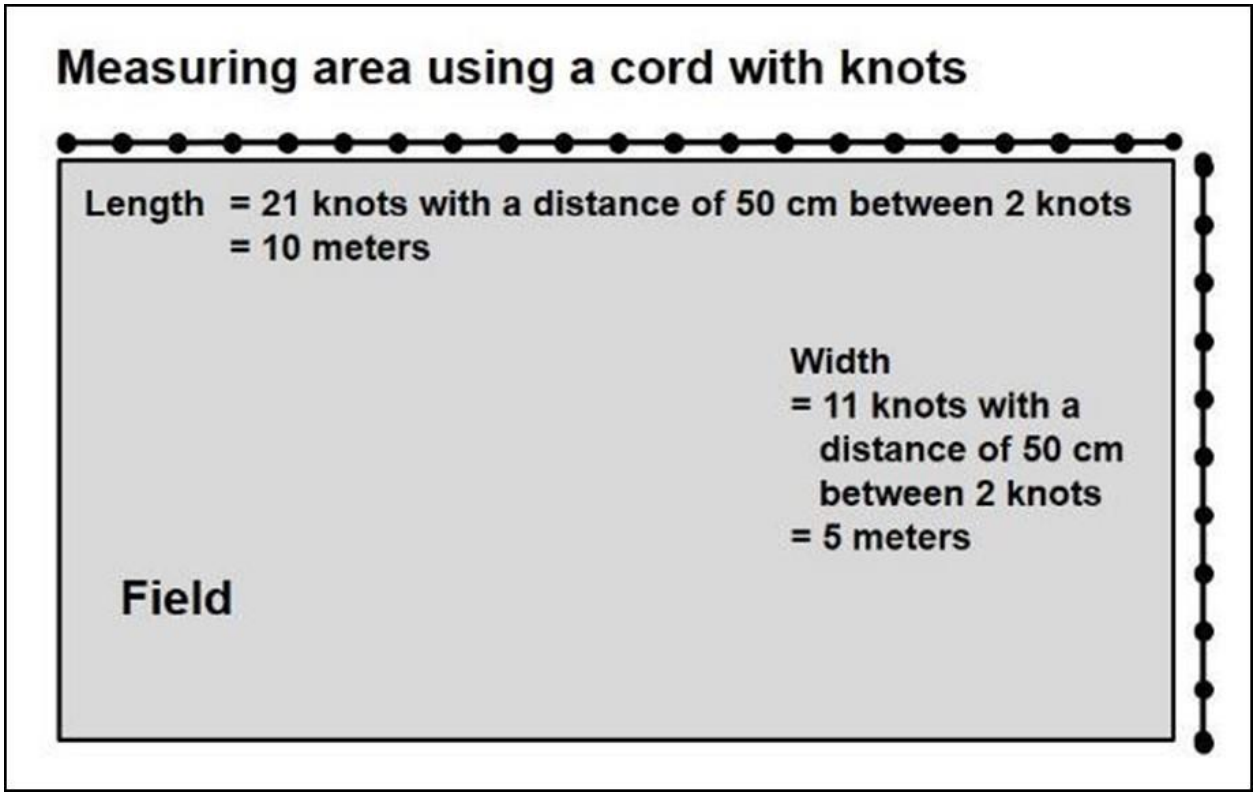
Division (divide)	
200 / 4 =	50
350 / 7 =	50
1100 / 8 =	137.5

Measure and calculate the surface of a field

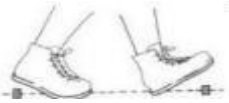
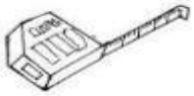
The size or surface area of a field is measured in meters squared or hectares.

1 hectare (ha) is 10,000 meters squared (m^2).





Let's measure a plot with different methods. The group whose size estimate is closest to the area as measured by the measuring tape wins.

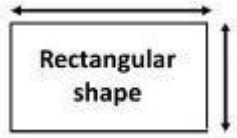
	Method	Length	Width	Surface Size	Difference	Rank
Group 1	 Estimation by steps Short Person					
	 Estimation by steps Tall Person					
	 Measuring tape					
Group 2	 Estimation by steps Short Person					
	 Estimation by steps Tall Person					
	 Cord with knots					

The most accurate way of measuring the size of a field is by using a GPS. It is not usually available to farmers, but some institutions do have it and only limited to extension staff.

Main Lessons

1. Measuring the size of a field by using walking-steps is not always accurate.
2. The agricultural entrepreneur who:
   - Underestimates field size risks using too little fertilizer and too few seeds. This can lead to reduced yields.
   - Overestimates field size risks using too much fertilizer and may plant too close together. This can lead to reduced yields and unnecessary spending.
3. Accurate knowledge of the size of the farm is important to plan production, correctly apply inputs, and to correctly space plants and seeds.
4. The agricultural entrepreneur measures their field with a measuring tape, a cord with knots or a measure band.
5. A field in the shape of a rectangle or square is easy to measure. On such a field, it is easier to sow or plant in lines, respecting the correct spacing distances.
6. If the plot to be measured has an irregular shape, the agricultural entrepreneur could ask for the service of a technician equipped with a GPS.

Standard Measures and Units

Distance	**Kilometre (km): 1 km is 1,000 meters (m):**
Length or width of a field 	**Meter (m): 1 m is 100 centimetres (cm).**
Surface Area 	**Meter squared (m^2)** **Hectare (ha): 1 ha is 10,000 m^2** **1 Acre: 4,000 m^2** **1 Hectare: 2.5 acres**
Yield per Unit Area 	**Yield per hectare: Yield per 2.5 acres** **e.g. 400 kg/ha dried cashew nuts: 160kg/acre**
Volume 	**Litres (L)**
 **Weight**	**Grams (g)** **Kilograms (kg): 1 kg is 1,000 g** **Ton (T): 1 Ton is 1,000 kg**
 **Time**	**Minutes (min)** **Hour (h)= 1 hour has 60 minutes** **Day (D) = 1 day has 24 hours**
Agricultural work 	**Man-days (MD): The work of an adult in one day.** Example: Work on one hectare requires 10 Man-days. (10 MD / ha). The work can be done by 1 person in 10 days or by 10 people in 1 day. **It is important to specify the number of hours in a workday.**

Main Lessons

Units and measures are important for the agricultural entrepreneur. They are necessary to:

- Know precisely your assets eg: land, labour.
- Correctly plan production and the quantities of inputs that need to be purchased in time
- Apply correct amounts of Agro-inputs.
- Know the quantity harvested.
- Evaluate correctly losses or profits.
- Better sell the products.

Measures and units are essential to do good business in agriculture.

Module 3 Manage your Farm for Enough Food

Making money with agriculture is good, but the farm must also provide enough good food for your family. For this reason, we want to tackle this issue.

	**Energy and physical strength to work and to grow**		**Building your body and mental force**
 **Sorghum**	 **Yam**	 **Beans**	 **Groundnut**
 **Cocoyam**	 **Sweet potato**	 **Poultry**	 **Meat**
 **Millet**	 **Maize**	 **Eggs**	 **Fish**
	**Protective food and clean water**		
Oils give us energy and make the meals tasty	**Fruits give us energy (sugar) and health**	**Vegetables give us health and make meals tasty**	**Clean drinking water gives us health**
			

Source: adapted from FAO 2004. Family Nutrition Guide

Main lesson

The agricultural entrepreneur knows that each type of food is necessary for good and balanced nutrition of their family.

Food products and their content in energy, protein and fat

Food		Energy Grams per kg	Fat Grams per kg	Protein Grams per kg	
	Rice	**3,610**	**10**	**65**	
	Maize	**3,530**	**38**	**93**	
	Sorghum	**3,450**	**32**	**107**	
	Millet	**3,110**	**48**	**118**	
	Cassava	**1,490**	**2**	**12**	
	Yam	**1,180**	**2**	**15**	
	Sweet potato	**1,050**	**3**	**17**	
	Groundnut	**5,670**	**450**	**258**	
	Beans	**3,330**	**8**	**226**	
	Fish (dried)	**2,550**	**470**	**74**	
	Meat	**1,610**	**79**	**195**	
	Eggs	**1,580**	**112**	**120**	
	Fruits (oranges)	**450**	**2**	**9**	
	Vegetables (carrots)	**305**	**0**	**7**	
	Leaves (cassava)	**230**	**3**	**30**	

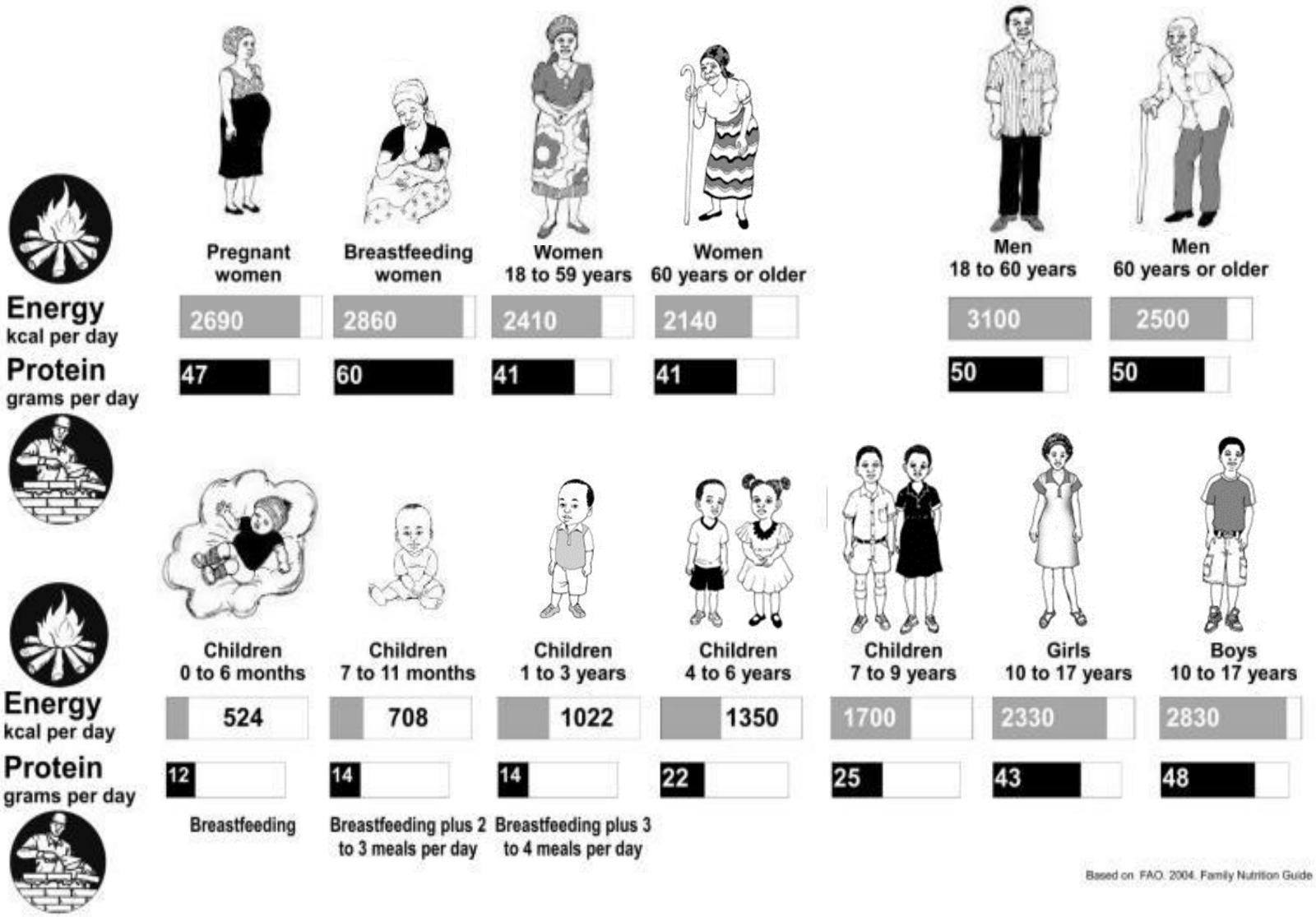
adapted from FAO 2004. Family Nutrition Guide; http://www.nutritiondata.com/facts/fats-and-oils/575/2

Explanation: The kilocalorie (Kcal or 1000 calories) is a measure of the energy of a food item. The number of kilocalories of one kg of a given food shows you whether the food is high or low in energy.

Main lesson

The agricultural entrepreneur knows that different types of food ensure good nutrition for their family.

How much energy and protein do we need per day?



Main Lessons

The agricultural entrepreneur knows that the members of his family have different food needs.

Very good food for pregnant and breastfeeding women ensures good health and growth of new-born children.

From the 7th month onward, children need good quality meals (without spices!) and breastfeeding for good health and growth.

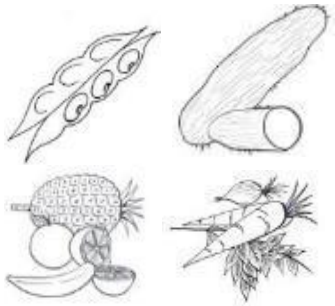
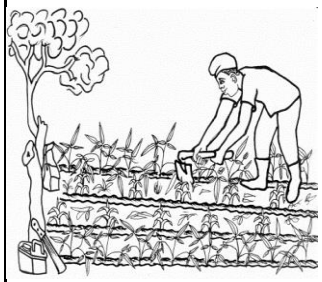
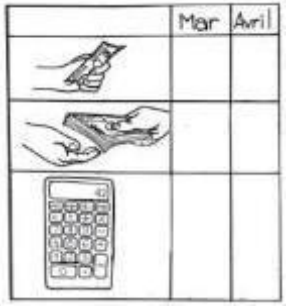
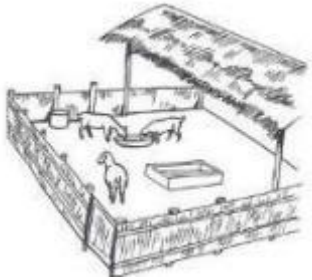
Children of a certain age need almost as much food as adult persons.

Nutritional calendar: How do you cover the food needs of your family?

- Mark a square ☐ if you sell the product
- Mark a triangle △ in the months you need to buy the product
- Mark a circle ❍ if the product is eaten
- Indicate by a line _____ how long the product is available from your own production
- What are the months of high prices and the months of low prices for a food item?

Products		Sell	Eat	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	Cashew														
	Fresh cassava														
	Cocoyam														
	Sweet Potato														
	Yam														

Products		Sell	Eat	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	Millet														
	Sorghum														
	Maize														
	Beans														
	Groundnut														
	Goat														
	Fish														
	Fruits														
	Vegetables														

Improving yields			Diversify cropping	Associate crops
Improved varieties 	**Fertilizer Application** 	**Mulching to conserve water** 		
Reduce losses in storage 	**Manage money to buy food** 	**Raise animals** 	**Prepare food well** 	**Clean water and hygiene** 

Source: adapted from FAO 2004.Family Nutrition Guide

Other possibilities

- ➔ Produce crops that ripen early or are resistant to drought.
- ➔ Harvest water for small irrigation.
- ➔ Some families might have the opportunity to establish fish ponds.

Module 4 Money-Out, Money-In: Know whether you do good business

Here we will see how to determine if business was good or bad. We will calculate the "money in" and "money out" from different produce

Exercise 1: Maize

Steps:

- Multiply the quantity with the price in each line.
- Sum the money spent ("Money-out") on inputs and labour
- Multiply the yield by the price of sale ("Money-In")
- Subtract the sum of "Money-Out" from the "Money-In"
- Determine if there was a profit or a loss

1 ha of Maize local variety without fertilizer Production 800 kg	**Unit**	**Quantity**	**Price (GH ¢)**	**Total (GH ¢)**
1. Money-Out				
Inputs				
Seeds (Not Certified Seed)	kg	23 x	2 =	
Fertilizer: NPK 20:10:10	50-kg bag	0 x	120 =	
Fertilizer: Urea	50-kg bag	0 x	110 =	
Pesticide (E-Master)	Litre	0 x	45 =	
Cost of Sacks/bags	Number	8 x	2 =	
Total costs of inputs				
Labour				
Land Clearing	MD	15 x	20 =	
Ploughing	MD	10 x	20 =	
Lining and Pegging	MD	0 x	20 =	
Sowing	MD	2 x	20 =	
1st Weeding	MD	10 x	20 =	
2nd Weeding	MD	0 x	20 =	
Fertilizer Application (NPK& Urea)	MD	0 x	20 =	
Pesticide Application	MD	0 x	20 =	
Harvest	MD	8 x	20 =	
Dehusking, Threshing and bagging	MD	5 x	20 =	
Transport	MD	3 x	20 =	
Total labour needs and costs	MD		GH ¢	
Total Money-Out			GH ¢	
2. Money-In				
Production x Price of Sale	kg x GH ¢	800 x	1.2 =	
3. Profit or loss? Money in – Money out				

Exercise 2: Cashew

Steps:

- Multiply the quantity with the price in each line.
- Sum the money spent ("Money-out") on inputs and labour
- Multiply the yield by the price of sale ("Money-In")
- Subtract the sum of "Money-Out" from the "Money-In"
- Determine if there was a profit or a loss

1ha Cashew No pruning; no fertilizer; Production: 300 kg cashew	**Unit**	**Quantity**	**Price (GH ¢)**	**Total (GH ¢)**
1. Money-Out				
Inputs				
Fertilizer (NPK)	kg	0 x	2.4 =	
Insecticide Neem extract	Litre	0 x	35 =	
Cost of Sacks/bags	Number	4 x	4 =	
Organic Manure	kg	4 x	3 =	
Weeding Service	MD	0 x	20 =	
Pruning Service	MD	0 x	20 =	
Spraying Service	MD	0 x	20 =	
Quality Control Service	KOR test	0 x	20 =	
Transportation Service (bagging, loading, transport)	50-kg bag	4 x	7 =	
Total costs of inputs				
Labour				
Ploughing	MD	0 x	20 =	
Fire belts	MD	0 x	20 =	
1st and 2nd Weeding	MD	10 x	20 =	
Pruning (sanitation) (1x)	MD	0 x	20 =	
Pruning (maintenance) (every 4 years)	MD	2 x	20 =	
Insecticide Spraying (incl. water fetching) (3x)	MD	0 x	20 =	
Harvesting (including separating nuts from apples), Drying and Sorting of raw nuts	MD	10 x	20 =	
Total labour needs and costs	MD		GH ¢	
Total Money-Out			GH ¢	
2. Money-In				
Production x Price of Sale	kg x GH ¢	300 x	4.8 =	
3. Profit or loss? Money in – Money out				

Exercise 3: Groundnut

Steps:
- Multiply the quantity with the price in each line.
- Sum the money spent ("Money-out") on inputs and labour
- Multiply the yield by the price of sale ("Money-In")
- Subtract the sum of "Money-Out" from the "Money-In"
- Determine if there was a profit or a loss

1 ha of groundnut local variety; unshelled; no fertilizer Production: 1000 kg	**Unit**	**Quantity**	**Price (GH ¢)**	**Total (GH ¢)**
1. Money-Out				
Inputs				
Groundnut Seeds	kg	25 x	5 =	
Ploughing Services	ha	0 x	225 =	
Cost of Sacks/bags	Number	17 x	2 =	
Foliar Fertilizer (NPK)	Litre	0 x	20 =	
Inoculant	50-kg bag	0 x	20 =	
Fungicide (Trichoderma)	Litre	0 x	55 =	
Insecticide (Delmathrine, Pyrethrum)	Litre	0 x	30 =	
Insecticide Stylet Oil (Parrafin Oil)	Litre	0 x	12 =	
Total costs of inputs				
Labour				
Land Clearing	MD	12 x	20 =	
Ploughing	MD	10 x	20 =	
Ridging	MD	0 x	20 =	
Planting	MD	5 x	20 =	
1st Weeding	MD	7 x	20 =	
2nd Weeding	MD	0 x	20 =	
Apply Fungicide	MD	2 x	20 =	
Apply Pesticide	MD	0 x	20 =	
Apply Fertilizer (2x)	MD	10 x	20 =	
Harvesting (Uprooting&plugging)	MD	10 x	20 =	
Drying	MD	2 x	20 =	
Cleaning/Sorting/Grading	MD	0 x	20 =	
Bagging, Loading and Transport	MD	7 x	20 =	
Total labour needs and costs	MD		GH ¢	
Total Money-Out			GH ¢	
2. Money-In				
Production x Price of Sale	kg x GH ¢	1,000 x	1.8 =	
3. Profit or loss? Money in – Money out				

Solution 1: Maize

Steps:

- Multiply the quantity with the price in each line.
- Sum the money spent ("Money-out") on inputs and labour
- Multiply the yield by the price of sale ("Money-In")
- Subtract the sum of "Money-Out" from the "Money-In"
- Determine if there was a profit or a loss

1 ha of Maize local variety without fertilizer Production 800 kg	**Unit**	**Quantity**	**Price (GH ¢)**	**Total (GH ¢)**
1. Money-Out				
Inputs				
Seeds (Not Certified Seed)	kg	23	2	46
Fertilizer: NPK 20:10:10	50-kg bag	0	120	0
Fertilizer: Urea	50-kg bag	0	110	0
Pesticide (E-Master)	Litre	0	45	0
Cost of Sacks/bags	Number	8	2	16
Total costs of inputs				**62**
Labour				
Land Clearing	MD	15	20	300
Ploughing	MD	10	20	200
Lining and Pegging	MD	0	20	0
Sowing	MD	2	20	40
1st Weeding	MD	10	20	200
2nd Weeding	MD	0	20	0
Fertilizer Application (NPK& Urea)	MD	0	20	0
Pesticide Application	MD	0	20	0
Harvest	MD	8	20	160
Dehusking, Threshing and bagging	MD	5	20	100
Transport	MD	3	20	60
Total labour needs and costs	MD	53	GH ¢	**1,060**
Total Money-Out			GH ¢	**1,122**
2. Money-In				
Production x Price of Sale	kg x GH ¢	800	1.2	960
3. Profit or loss? Money in – Money out				**-162**

Solution 2: Cashew

Steps:
- Multiply the quantity with the price in each line.
- Sum the money spent ("Money-out") on inputs and labour.
- Multiply the yield by the price of sale ("Money-In").
- Subtract the sum of "Money-Out" from the "Money-In".
- Determine if there was a profit or a loss.

1ha Cashew No pruning; no fertilizer; Production: 300 kg cashew	**Unit**	**Quantity**	**Price (GH ¢)**	**Total (GH ¢)**
1. Money-Out				
Inputs				
Fertilizer (NPK)	kg	0 x	2.4 =	0
Insecticide Neem extract	Litre	0 x	35 =	0
Cost of Sacks/bags	Number	4 x	4 =	16
Organic Manure	kg	4 x	3 =	12
Weeding Service	MD	0 x	20 =	0
Pruning Service	MD	0 x	20 =	0
Spraying Service	MD	0 x	20 =	0
Quality Control Service	KOR test	0 x	20 =	0
Transportation Service (bagging, loading, transport)	50-kg bag	4 x	7 =	28
Total costs of inputs				**56**
Labour				
Ploughing	MD	0 x	20 =	0
Fire belts	MD	0 x	20 =	0
1st and 2nd Weeding	MD	10 x	20 =	200
Pruning (sanitation) (1x)	MD	0 x	20 =	0
Pruning (maintenance) (every 4 years)	MD	2 x	20 =	40
Insecticide Spraying (incl. water fetching) (3x)	MD	0 x	20 =	0
Harvesting (including separating nuts from apples), Drying and Sorting of raw nuts	MD	10 x	20 =	200
Total labour needs and costs	MD	22	GH ¢	**440**
Total Money-Out			GH ¢	**496**
2. Money-In				
Production x Price of Sale	kg x GH ¢	300 x	4.8 =	1,440
3. Profit or loss? Money in – Money				**944**

Solution 3: Groundnut

Steps:
- Multiply the quantity with the price in each line.
- Sum the money spent ("Money-out") on inputs and labour.
- Multiply the yield by the price of sale ("Money-In").
- Subtract the sum of "Money-Out" from the "Money-In".
- Determine if there was a profit or a loss.

1 ha of groundnut local variety; unshelled; no fertilizer Production: 1000 kg	**Unit**	**Quantity**	**Price (GH ¢)**	**Total (GH ¢)**
1. Money-Out				
Inputs				
Groundnut Seeds	kg	25 x	5 =	125
Ploughing Services	ha	0 x	225 =	0
Cost of Sacks/bags	Number	17 x	2 =	34
Foliar Fertilizer (NPK)	Litre	0 x	20 =	0
Inoculant	50-kg bag	0 x	20 =	0
Fungicide (Trichoderma)	Litre	0 x	55 =	0
Insecticide (Delmathrine, Pyrethrum)	Litre	0 x	30 =	0
Insecticide Stylet Oil (Parrafin Oil)	Litre	0 x	12 =	0
Total costs of inputs				**159**
Labour				
Land Clearing	MD	12 x	20 =	240
Ploughing	MD	10 x	20 =	200
Ridging	MD	0 x	20 =	0
Planting	MD	5 x	20 =	100
1st Weeding	MD	7 x	20 =	140
2nd Weeding	MD	0 x	20 =	0
Apply Fungicide	MD	2 x	20 =	40
Apply Pesticide	MD	0 x	20 =	0
Apply Fertilizer (2x)	MD	10 x	20 =	200
Harvesting (Uprooting&plugging)	MD	10 x	20 =	200
Drying	MD	2 x	20 =	40
Cleaning/Sorting/Grading	MD	0 x	20 =	0
Bagging, Loading and Transport	MD	7 x	20 =	140
Total labour needs and costs	MD	65	GH ¢	**1,300**
Total Money-Out			GH ¢	**1,459**
2. Money-In				
Production x Price of Sale	kg x GH ¢	1,000 x	1.8 =	1,800
3. Profit or loss? Money in – Money out				**341**

Comparing Results

Please state what is good and what is bad business and indicate reasons

	Unit			
Production	kg/ ha	800	300	1,000
1. Money-Out	GH¢/ha	1,122	496	1,459
2. Money-In	GH¢/ha	960	1,440	1,800
3. Profit or loss? Money-In MINUS MoneyOut	GH¢/ha	-162	944	341
Indicate the rank → The best result gets number 1				

Main Lessons

1. To know if you are doing successful business with a crop, you need to know the "Money-In" and "Money-Out" with precision.
2. The agricultural entrepreneur records the inputs and labour used in a field, and calculates the "Money-In" and "Money-Out"
3. From the Money-In, the entrepreneur subtracts the Money-Out. The result tells if they made profit or loss.
4. The agricultural entrepreneur makes a **profit** if the "Money-In" is greater than the "Money-Out." In that case they do **good business**.
5. The agricultural entrepreneur makes a **loss** if the "Money-Out" is greater than the "Money-In." In that case they do **bad business**.
6. You recognize a loss with the minus dash in front of the number: **-**
7. a good agricultural entrepreneur shall abandon this crop or use a better technique to make a profit.
   To make sure that they make a profit, the agricultural entrepreneur calculates « Money In » and « Money Out » **before production**.

Module 5 Decisions for more income

How to do good business?

Here we will see the possible improvements and how to make good decisions. We will use our results and do the same calculations for improved techniques.

Module 5/ Exercise 1		**Maize local variety without Fertilizer (1 ha)**			**Maize improved variety with Fertilizer (1 ha)**		
	**Unit**	Quantity	Price (GH¢)	Total (GH¢)	Quantity	Price (GH¢)	Total (GH¢)
1. Money-Out							
Inputs							
Seeds (Not Certified Seed)	kg	23 x	2 =	46	0 x	2 =	
Seeds (Certified Seed)	kg	0 x	5 =	0	23 x	5 =	
Fertilizer: NPK 20:10:10	50-kg bag	0 x	120 =	0	4 x	120 =	
Fertilizer: Urea	50-kg bag	0 x	110 =	0	2 x	110 =	
Pesticide (E-Master)	Litre	0 x	45 =	0	2.5 x	45 =	
Cost of Sacks/bags	Number	8 x	2 =	16	35 x	2 =	
Cost of Inputs				**62**			
Labour							
Land Clearing	MD	15 x	20 =	300	15 x	20 =	
Ploughing	MD	10 x	20 =	200	10 x	20 =	
Lining and pegging	MD	0 x	20 =	0	4 x	20 =	
Sowing	MD	2 x	20 =	40	2 x	20 =	
1st Weeding	MD	10 x	20 =	200	10 x	20 =	
2nd Weeding	MD	0 x	20 =	0	5 x	20 =	
Fertilizer Application (NPK& Urea)	MD	0 x	20 =	0	3 x	20 =	
Pesticide Application	MD	0 x	20 =	0	2 x	20 =	
Harvest	MD	8 x	20 =	160	12 x	20 =	
Dehusking, Threshing and bagging	MD	5 x	20 =	100	10 x	20 =	
Transport	MD	3 x	20 =	60	5 x	20 =	
Labour needs and costs	MD	**53**		**1,060**			
Total Money-Out	GH¢	**1,122**					
2. Money-In							
Production **x** Price of Sale	kg x GH ¢	800 x	1.2 =	**960**	3.500 x	1.3 =	
3. Profit or Loss?			**-162**				
4. Unit Cost Money out / Production			**1.40**				

Module 5/ Exercise 2		Cashew without Fertilizer and pruning (1 ha)			Cashew with Pruning and Fertilizer (1 ha)		
	Unit	Quantity	Price (GH¢)	Total (GH¢)	Quantity	Price (GH¢)	Total (GH¢)
1. Money-Out							
Inputs							
Fertilizer (NPK)	kg	0 x	2.4 =	0	20 x	2.4 =	
Insecticide (Neem extract)	Litre	0 x	35 =	0	3 x	35 =	
Cost of Sacks/bags	Number	4 x	4 =	16	19 x	4 =	
Organic Manure	kg	4 x	3 =	12	1,000 x	0.6 =	
Weeding service	MD	0 x	20 =	0	20 x	20 =	
Pruning service	MD	0 x	20 =	0	5 x	20 =	
Spraying service	MD	0 x	20 =	0	3 x	20 =	
Quality control service	KOR test	0 x	20 =	0	1 x	100 =	
Transportation service (bagging, loading, transport)	50-kg bag	4 x	7 =	28	12 x	7 =	
Cost of Inputs				**56**			
Labour							
Ploughing	MD	0 x	20 =	0	5 x	20 =	
Fire belts	MD	0 x	20 =	0	8 x	20 =	
1st and 2nd Weeding	MD	10 x	20 =	200	0 x	20 =	
Pruning (sanitation) (1x)	MD	0 x	20 =	0	0 x	20 =	
Pruning (maintenance) (every 4 years)	MD	2 x	20 =	40	5 x	20 =	
Insecticide spraying (incl. water fetching) (3x)	MD	0 x	20 =	0	0 x	20 =	
Harvesting (including removing nuts from apples), drying and sorting of raw nuts	MD	10 x	20 =	200	25 x	20 =	
Total labour needs and costs	**MD**	**22**		**440**			
Total Money-Out	GH¢			**496**			
2. Money-In							
Production **x** Price of Sale	kg x GH ¢	300 x	4.8 =	**1,440**	1,500 x	5.0 =	
3. Profit or Loss?				**944**			
4. Unit Cost Money out / Production				**1.65**			

Module 5/ Exercise 3		Groundnut local variety without Fertilizer (1 ha)			Groundnut improved variety with Fertilizer (1 ha)		
	Unit	Quantity	Price (GH ¢)	Total (GH¢)	Quantity	Price (GH ¢)	Total (GH¢)
1. Money-Out							
Inputs							
Groundnut Seeds	kg	25 x	5 =	125	0 x	2 =	
Improved Groundnut Seeds	kg	0 x	2 =	0	25 x	6 =	
Ploughing Services	ha	0 x	225 =	0	1 x	225 =	
Bags/Sacks	Number	17 x	2 =	34	42 x	2 =	
Foliar Fertilizer (NPK)	Litre	0 x	20 =	0	7.5 x	20 =	
Inoculant	50-kg bag	0 x	20 =	0	3 x	20 =	
Fungicide (Trichoderma)	Litre	0 x	55 =	0	1 x	55 =	
Insecticide (Delmathrine, Pyrethrum)	Litre	0 x	30 =	0	2 x	30 =	
Insecticide Stylet Oil (Parrafin Oil)	Litre	0 x	12 =	0	4 x	12 =	
Cost of Inputs				**159**			
Labour							
Land Clearing	MD	12 x	20 =	240	0 x	20 =	
Ploughing	MD	10 x	20 =	200	0 x	20 =	
Ridging	MD	0 x	20 =	0	8 x	20 =	
Planting	MD	5 x	20 =	100	8 x	20 =	
1st Weeding	MD	7 x	20 =	140	12 x	20 =	
2nd Weeding	MD	0 x	20 =	0	6 x	20 =	
Apply fungicide	MD	2 x	20 =	40	1 x	20 =	
Apply pesticide	MD	0 x	20 =	0	3 x	20 =	
Apply fertilizer (2X)	MD	10 x	20 =	200	2 x	20 =	
Harvesting	MD	10 x	20 =	200	20 x	20 =	
Drying	MD	2 x	20 =	40	5 x	20 =	
Cleaning/Sorting/Grading	MD	0 x	20 =	0	3 x	20 =	
Bagging, Loading and transport	MD	7 x	20 =	140	11 x	20 =	
Total labour needs and costs	**MD**	**65**		**1,300**			
Total Money-Out	GH¢			**1,459**			
2. Money-In							
Production **x** Price of Sale	kg x GH ¢	1,000 x	1.8 =	**1,800**	2,500 x	1.9 =	
3. Profit or Loss?				**341**			
4. Unit Cost Money out / Production				**1.46**			

Module 5/ Solution 1		Maize local variety without Fertilizer (1 ha)			Maize improved variety with Fertilizer (1 ha)		
	**Unit**	Quantity	Price (GH¢)	Total (GH¢)	Quantity	Price (GH¢)	Total (GH¢)
1. Money-Out							
Inputs							
Seeds (Not Certified Seed)	kg	23 x	2 =	46	0 x	2 =	0
Seeds (Certified Seed)	kg	0 x	5 =	0	23 x	5 =	115
Fertilizer: NPK 20:10:10	50-kg bag	0 x	120 =	0	4 x	120 =	480
Fertilizer: Urea	50-kg bag	0 x	110 =	0	2 x	110 =	220
Pesticide (E-Master)	Litre	0 x	45 =	0	2.5 x	45 =	112.5
Cost of Sacks/bags	Number	8 x	2 =	16	35 x	2 =	70
Cost of Inputs				**62**			**997.5**
Labour							
Land Clearing	MD	15 x	20 =	300	15 x	20 =	300
Ploughing	MD	10 x	20 =	200	10 x	20 =	200
Lining and pegging	MD	0 x	20 =	0	4 x	20 =	80
Sowing	MD	2 x	20 =	40	2 x	20 =	40
1st Weeding	MD	10 x	20 =	200	10 x	20 =	200
2nd Weeding	MD	0 x	20 =	0	5 x	20 =	100
Fertilizer Application (NPK& Urea)	MD	0 x	20 =	0	3 x	20 =	60
Pesticide Application	MD	0 x	20 =	0	2 x	20 =	40
Harvest	MD	8 x	20 =	160	12 x	20 =	240
Dehusking, Threshing and bagging	MD	5 x	20 =	100	10 x	20 =	200
Transport	MD	3 x	20 =	60	5 x	20 =	100
Labour needs and costs	MD	**53**		**1,060**	**78**		**1,560**
Total Money-Out	GH¢	**1,122**			**2,557.5**		
2. Money-In							
Production **x** Price of Sale	kg x GH ¢	800 x	1.2 =	**960**	3,500 x	1.3 =	**4,550**
3. Profit or Loss?			**-162**				**1,992.5**
4. Unit Cost Money out / Production			**1.40**				**0.73**

Module 5/ Solution 2		Cashew without Fertilizer and pruning (1 ha)			Cashew with Pruning and Fertilizer (1 ha)		
	Unit	Quantity	Price (GH¢)	Total (GH¢)	Quantity	Price (GH¢)	Total (GH¢)
1. Money-Out							
Inputs							
Fertilizer (NPK)	kg	0	2.4	0	20	2.4	48
Insecticide (Neem extract)	Litre	0	35	0	3	35	105
Cost of Sacks/bags	Number	4	4	16	19	4	76
Organic Manure	kg	4	3	12	1,000	0.6	600
Weeding service	MD	0	20	0	20	20	400
Pruning service	MD	0	20	0	5	20	100
Spraying service	MD	0	20	0	3	20	60
Quality control service	KOR test	0	20	0	1	100	100
Transportation service (bagging, loading, transport)	50-kg bag	4	7	28	12	7	84
Cost of Inputs				**56**			**1,573**
Labour							
Ploughing	MD	0	20	0	5	20	100
Fire belts	MD	0	20	0	8	20	160
1st and 2nd Weeding	MD	10	20	200	0	20	0
Pruning (sanitation) (1x)	MD	0	20	0	0	20	0
Pruning (maintenance) (every 4 years)	MD	2	20	40	5	20	100
Insecticide spraying (incl. water fetching) (3x)	MD	0	20	0	0	20	0
Harvesting (including removing nuts from apples), drying and sorting of raw nuts	MD	10	20	200	25	20	500
Total labour needs and costs	**MD**	**22**		**440**	**43**		**860**
Total Money-Out	GH¢			**496**			**2,433**
2. Money-In							
Production **x** Price of Sale	kg x GH ¢	300	4.8	**1,440**	1,500	5.0	**7,500**
3. Profit or Loss?				**944**			**5,067**
4. Unit Cost Money out / Production				**1.65**			**1.62**

Module 5/ Solution 3		**Groundnut local variety without Fertilizer (1 ha)**			**Groundnut improved variety with Fertilizer (1 ha)**		
	Unit	Quantity	Price (GH ¢)	Total (GH¢)	Quantity	Price (GH ¢)	Total (GH¢)
1. Money-Out							
Inputs							
Groundnut Seeds	kg	25 x	5 =	125	0 x	2 =	0
Improved Groundnut Seeds	kg	0 x	2 =	0	25 x	6 =	150
Ploughing Services	ha	0 x	225 =	0	1 x	225 =	225
Bags/Sacks	Number	17 x	2 =	34	42 x	2 =	84
Foliar Fertilizer (NPK)	Litre	0 x	20 =	0	7.5 x	20 =	150
Inoculant	50-kg bag	0 x	20 =	0	3 x	20 =	60
Fungicide (Trichoderma)	Litre	0 x	55 =	0	1 x	55 =	55
Insecticide (Delmathrine, Pyrethrum)	Litre	0 x	30 =	0	2 x	30 =	60
Insecticide Stylet Oil (Parrafin Oil)	Litre	0 x	12 =	0	4 x	12 =	48
Cost of Inputs				**159**			**832**
Labour							
Land Clearing	MD	12 x	20 =	240	0 x	20 =	0
Ploughing	MD	10 x	20 =	200	0 x	20 =	0
Ridging	MD	0 x	20 =	0	8 x	20 =	160
Planting	MD	5 x	20 =	100	8 x	20 =	160
1st Weeding	MD	7 x	20 =	140	12 x	20 =	240
2nd Weeding	MD	0 x	20 =	0	6 x	20 =	120
Apply fungicide	MD	2 x	20 =	40	1 x	20 =	20
Apply pesticide	MD	0 x	20 =	0	3 x	20 =	60
Apply fertilizer (2X)	MD	10 x	20 =	200	2 x	20 =	40
Harvesting	MD	10 x	20 =	200	20 x	20 =	400
Drying	MD	2 x	20 =	40	5 x	20 =	100
Cleaning/Sorting/Grading	MD	0 x	20 =	0	3 x	20 =	60
Bagging, Loading and transport	MD	7 x	20 =	140	11 x	20 =	220
Total labour needs and costs	**MD**	**65**		**1,300**	**79**		**1,580**
Total Money-Out	GH¢			**1,459**			**2,412**
2. Money-In							
Production **x** Price of Sale	kg x GH ¢	1,000 x	1.8 =	**1,800**	2,500 x	1.9 =	**4,750**
3. Profit or Loss?				**341**			**2,338**
4. Unit Cost Money out / Production				**1.46**			**0.96**

Explanation of Fixed Costs

Certain costs are called 'fixed costs'. These are costs for equipment and tools that the farmer owns and are used on various crops or over various years, such as sprayers or irrigation pumps. Fixed Costs do not vary with the size of the field.

Main Lessons

1. The Difference between Money-in and Money-out indicates whether we are making a loss or profit from the use of the land.

2. 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.

3. A good agricultural entrepreneur calculates well ahead of the season to decide what they will produce and which techniques to use.

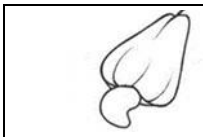
4. During the production season, a good agricultural entrepreneur registers money spent on farm operations and inputs.

5. After the harvest, a good agricultural entrepreneur evaluates their profit and identifies what changes are needed to improve the planning and profit for the next production season.

Module 6 Opportunity to Diversify your Farm Enterprise

After all the calculations, we will determine the opportunities to increase revenues. By looking at the numbers on this page, we will learn how to make investment decisions. We will determine the best opportunities by using Gross Margin.

- Rank crops based on Profit or Loss
- What crops and techniques will you choose?
- Make a choice based on this ranking

							
		Cashew		**Groundnut unshelled**		**Maize**	
		Current	**Improved**	**Current**	**Improved**	**Current**	**Improved**
Area	**ha**	**1**	**1**	**1**	**1**	**1**	**1**
1. Money-Out = input costs + Labour costs	**GHC**	496	2,433	1,459	2,412	1,122	2,558
2. Money-In =Production X price of sale	**GHC**	1,440	7,500	1,800	4,750	960	4,550
3. Profit or Loss ? Without risk = Money-In MINUS Money-Out	**GHC**	**944**	**5,067**	**341**	**2,338**	**-162**	**1,993**
Rank							
3. Profit or Loss? <u>With</u> risk Money-In MINUS Money-Out	**GHC**			**341**	**2,338**	**-162**	**1,993**
Rank							

What is risk in agriculture?

The agricultural entrepreneur does not like risks because they are difficult to predict.

However, one can determine during planning what the impact of risks could be on revenues.

We use an example to learn this

Market Risks	**Production Risks**
The market price of cashew may fall from 5.0 Gh¢ per kg to 4.32 Gh¢ per kg	**A lack of rains** may reduce the cashew yields**:** • The yield of the local variety is only 210 kg/ha instead of 300 kg/ha • The yield of the improved variety is only 1,050 kg/ ha instead of 1,500 kg/ha

Let us determine the impact of these risks on business with a small calculation.

NB: The Money-Out does not change, because the money has already been spent.

Production & Marketing Risk

	Unit	 **Cashew** Current	 **Cashew** Improved
Surface Area	Ha	1	1
1. Money-Out	Gh¢	**496**	**2,433**
2. Money-In			
Yield (lower)	Kg/ha	210	1,050
Price (lower)	Gh¢/kg	4.32	4.32
Yield ☒ Price of Sale	Gh¢/ha	**907**	**4,536**
3. Profit or Loss? Money-In **MINUS** Money-Out ☺ or ☹	Gh¢/ha		

Are the two risks acceptable?

What can you do to avoid the risk?

Register the result in the preceding table (page 30) to compare the results with the situation without risk.

Risk management Strategies

Some risks can be managed. Examples of risk-reducing strategies are:

Production risk-reducing strategies

- Usually, not all crops are affected in the same way by a decreased yield. Diversification of production into different crops and varieties can help even when rains are unreliable.
- Purchasing inputs from trustworthy sources.
- Keeping some savings for the case that you need to replant or execute any prompt activity to curtail a critical situation.
- Applying GAPs and conservation agriculture to make optimum use of available rainfall.

Marketing risk-reducing strategies

- Spreading the sale of your produce over a longer period when it can be expected that price will improve again.
- Selling through contract farming against a guaranteed price and with a guarantee that everything produced will be bought.

Selling to different merchants, looking for the best prices using available market information systems.

Main Lessons

1. Comparing profits of different crops and production techniques helps to make decisions on using the land to maximize revenue. This comparison is important to all agricultural entrepreneurs.
2. Production decisions are based on these comparisons.
3. A good agricultural entrepreneur knows that fluctuation in prices constitutes a risk on revenue. Risks are a concern for both traditional and improved varieties and techniques.
4. To evaluate the impacts of this Market Risk, the entrepreneur calculates the Money-In with a much lower price ("pessimistic") than the current price (or last season's price). If the "pessimistic" profit can still satisfy the income objectives, then the risk is acceptable.
5. A good agricultural entrepreneur does not only base their decision to grow a crop on the profits showing on Money-In and Money-Out calculations but also takes into consideration other factors such as:

    -Availability of market for the product

    -Pre-financing opportunities

    -Supply of packaging materials

    -Availability of cost of transport to the market

    -Mode of payment and payment period by the consumer

    -Availability of inputs
6. A good agricultural entrepreneur, as much as possible, avoids risk, e.g. Will make sure to buy seeds and agro-chemical inputs from genuine sources, will create fire breaks around the farm and use water conservation methods to reduce the effects of droughts.

Module 7 Manage your Money Throughout the Year

Bad money management	➲ How does one know if the money is managed badly? ➲ What are the causes? ➲ How to manage money well during the year?

One must Plan! The person who fails to plan, plans to fail!

First step: Foresee household expenditure

Now we look at Money-Out of the household. We take as an example, the expenditure of a household of 6 persons (2 children not yet in school, 2 children in primary school). They also make GH¢50 every month from a provision shop being managed by the wife. How much money is needed for the household in one year? Can we foresee these expenditures? When is the money needed?

Money Needs	**Can be foreseen**	**Period**	**Money-Out**	
			GHC per month	GHC per year
Matches 	Yes	Each month	2	24
Salt 	Yes	Each month	3	36
Soap 	Yes	Each month	6	72
Kerosene 	Yes	Each month	8	96
Purchase food 	Yes	Each month	150	1,800
Mobile phone recharge 	Yes	Each month	10	120
Sub-total	Yes	Each month		
School fees (100 GHS per child, 3 times a year) 	Yes	January, September, May	200	600
Clothing 	Yes	December	260	260
Happy events	Yes	Once a year (December)	400	400
Total expenditure for household per year that can be foreseen				**3,408**

Second Step: Fill financial calendar on

•Let us put these numbers into a financial calendar. On the next page, you will see the numbers calculated in Module 5.
•How much money is left at the end of each month?
•How much money is left at the end of the year?

Third Step:

Fill out the second financial calendar. The expenditures for Inputs and Labour are those from the Exercise Sheets in Module 5 – using improved practices.

Module 7 Financial Calendar based on a farm using CURRENT practices (GH¢) – Exercise

Money-Out		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Cashew	**1.0 ha**													
	Inputs and Services				28				12				16	
	Labour Costs								240				200	
Groundnut unshelled	**1.0 ha**													
	Inputs and Services				125							34		
	Labour Costs			440		100	140		240	140	240			
Maize	**1.0 ha**													
	Inputs and Services						46						16	
	Labour Costs				500	40	200			160	100		60	
Household monthly		179	179	179	179	179	179	179	179	179	179	179	179	
School fees and materials		200				200				200				
Happy Events													400	
Clothing													260	
Total per month														

Money-In	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cashew				1,440									
Groundnut (unshelled)												1,800	
Maize												960	
Total per month													

Result	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Monthly balance													
Cumulative balance													

Module 7 Financial Calendar based on a farm using CURRENT practices (GH¢) – Solution

Money-Out		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Cashew	**1.0 ha**													
	Inputs and Services				28				12				16	56
	Labour Costs								240				200	440
Groundnut unshelled	**1.0 ha**													
	Inputs and Services				125							34		159
	Labour Costs			440		100	140		240	140	240			1300
Maize	**1.0 ha**													
	Inputs and Services						46						16	62
	Labour Costs				500	40	200			160	100		60	1,060
Household monthly		179	179	179	179	179	179	179	179	179	179	179	179	2,148
School fees and materials		200				200				200				600
Happy Events													400	400
Clothing													260	260
Total per month		**379**	**179**	**619**	**832**	**519**	**565**	**179**	**671**	**679**	**519**	**213**	**1,131**	**6,485**

Money-In	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cashew				1,440									1,440
Groundnut (unshelled)												1,800	1,800
Maize												960	960
Total per month				**1,440**								**2,760**	**4,200**

Result	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Monthly balance	**-379**	**-179**	**-619**	**608**	**-519**	**-565**	**-179**	**-671**	**-679**	**-519**	**-213**	**1,629**	
Cumulative balance	**-379**	**-558**	**-1,177**	**-569**	**-1,088**	**-1,653**	**-1,832**	**-2,503**	**-3,182**	**-3,701**	**-3,914**	**-2,285**	

Module 7 Financial Calendar based on a farm using IMPROVED practices (GH¢) – Exercise

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Cashew	**1.0 ha**													
	Inputs and Services				184	105	1,148		60				76	1,573
	Labour Costs						200						660	860
Groundnut (unshelled)	**1.0 ha**													
	Inputs and Services			375		373						84		832
	Labour Costs				320	260	220		500	60			220	1,580
Maize	**1.0 ha**													
	Inputs and Services				115			812.5					70	997.5
	Labour Costs				500	80	240	100	100	240			300	1,560
Household		179	179	179	179	179	179	179	179	179	179	179	179	2,148
School fees and materials		200				200				200				600
Happy Events													400	400
Clothing													260	260
Total per month														

Money-In	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cashew										2,000	2,000	3,500	7,500
Groundnut (unshelled)												4,750	4,750
Maize												4,550	4,550
Total per month													

Money-In	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Monthly balance													
Cumulative balance													

Module 7 Financial Calendar based on a farm using IMPROVED practices (GH¢) – Solution

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Cashew	**1.0 ha**													
	Inputs and Services	0	0	0	184	105	1,148	0	60	0	0	0	76	1,573
	Labour Costs	0	0	0	0	0	200	0	0	0	0	0	660	860
Groundnut (unshelled)	**1.0 ha**													
	Inputs and Services	0	0	375	0	373	0	0	0	0	0	84	0	832
	Labour Costs	0	0	0	320	260	220	0	500	60	0	0	220	1,580
Maize	**1.0 ha**													
	Inputs and Services	0	0	0	115	0	0	812.5	0	0	0	0	70	997.5
	Labour Costs	0	0	0	500	80	240	100	100	240	0	0	300	1,560
Household		179	179	179	179	179	179	179	179	179	179	179	179	2,148
School fees and materials		200				200				200				600
Happy Events													400	400
Clothing													260	260
Total per month		**379**	**179**	**554**	**1,298**	**1,197**	**1,987**	**1,091.5**	**839**	**679**	**179**	**263**	**2,165**	**10,810.5**

Money-In	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cashew	0	0	0	0	0	0	0	0	0	2,000	2,000	3,500	7,500
Groundnut (unshelled)	0	0	0	0	0	0	0	0	0	0	0	4,750	4,750
Maize	0	0	0	0	0	0	0	0	0	0	0	4,550	4,550
Total per month	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,000**	**2,000**	**12,800**	**16,800**

Money-In	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Monthly balance	**-379**	**-179**	**-554**	**-1,298**	**-1,197**	**-1,987**	**-1,091.5**	**-839**	**-679**	**1,821**	**1,737**	**10,635**	
Cumulative balance	**-379**	**-558**	**-1,112**	**-2,410**	**-3,607**	**-5,594**	**-6,685.5**	**-7,524.5**	**-8,203.5**	**-6,382.5**	**-4,645.5**	**5,989.5**	

Main Lessons

1. In the agricultural enterprise, expenditures (Money-Out) for the farm and the household are made each month, but the revenue (Money-In) comes only during the months of harvest or sale of produce.

2. Therefore, there are months of the year where Money-Out is greater than Money-In. These months are called "deficit months."

3. For this reason, a good agricultural entrepreneur makes a financial calendar. They plan with the spouse(s) the expenditures for production and household needs.

4. To be able to cover the expenditures in deficit months, a good agricultural entrepreneur saves money from sales of produce ("surplus months").

5. Good Agricultural Practice and quality inputs can contribute to improving the revenues of the agricultural entrepreneur.

6. The money needed in certain months for inputs can be calculated using the right quantity for the measured farm.

7. This information helps to plan with the Financial Calendar, to make savings in a targeted way or to solicit credit for production.

Discussion of the Results

Note: In this example, all product from the farm is sold! We have not yet deducted what the family eats.

Fourth Step:

Which situation is preferable? **What changes are necessary?**			With **current** production techniques	With **improved** production techniques
	Can be foreseen?	Period-month	per year (GHC)	per year (GHC)
Money-Out for household	yes	each month	2,148	2,148
Money-Out for socialization, clothing, happy events	yes	different months	1,260	1,260
Money-Out for Production (inputs and labour)	yes	different months	3,077	7,402.5
Total money-out			**6,485**	**10,810.5**
Money-In from production	yes, but can change	different months	**4,200**	**16,800**
Money available for savings, other expenditure Money-In from Production and other sources minus Money-Out for Household and inputs			**-2,285**	**5,989.5**
Difference between the two situations (GHC)				

Note: In this example, all product from the farm is sold! We have not yet deducted what the family eats!

Attention

Every working day of adult family members increases the available money by about 20 GHC.

➲ Discuss the differences and which situation is preferable.

➲ What changes are needed?

Module 8 How to get Good Financial Services

Savings

Saving is when money is put aside by an individual or household for future use. Saving can also be done in the form of investments, animals or land, which can be sold when cash is needed. It is also a way of building assets.

Why is it important to create savings?

- With savings, you can invest in your enterprise and make greater revenue. For example, buying fertilizer or improved seeds.
- If you save in a bank account, your money is safe.
- With the interests on savings that you receive, you protect your money against inflation (inflation is when the cost of living increases).
- Savings in an account are often necessary to obtain a loan.

How can you create savings? What are the advantages and disadvantages?

	Hide money at Home	Bring money to a rural bank
Advantages ☺	1. Money is immediately available.	1. The money is safe at the bank. 2. The bank pays interests on your savings. 3. Having savings at the bank facilitates a loan from the bank. 4. Saving at the bank reduces the risk of spending money impulsively because it is not immediately available.
Disadvantages ☹	1. Money is not safe and can be stolen. 2. Money can be destroyed (by fire, for example). 3. The money does not produce interest. 4. There is an increased risk of making impulsive expenditure.	1. The money is not immediately available.

Paying money into your bank account	Removing money from your bank account
• Go to the bank or village financial institution.	• Think about why you need money, and how much. • Go to the bank or the village financial institution.
• Fill out the deposit form.	• Fill out the money withdrawal form.
• Your deposit is registered in your savings booklet.	• Your withdrawal amount is registered in your savings booklet.

Bank deposits

Commercial Banks, Rural Banks, Development Banks and Savings and Loans Companies collect money from people who have it to spare or who are saving it from their income. They keep the money safe in your account.

If you want to put your money in the bank, you can choose one of the following accounts:

1. **A Current Account** is an account for business people like you. Money put in this account can be taken out without telling the bank to prepare for your coming to take out money. You use a cheque to take out money or to pay a bill. The bank pays no interest on this account, rather charges a commission for the services it has given you.

2. **Savings Account.** You open a savings account to save money, to keep it safe or to get a loan. You can take money only when you are present at the bank. The bank pays interest on the money in this account either every three months, every six months or every year. As the owner of a savings account, you receive a passbook from the bank into which money put in and money taken out is recorded.

3. **The Fixed Deposit Account** helps you to keep money safe and to earn more interest. You can only take out your money at a time you have agreed with the bank, for example, in six months. The interest that is paid on the amount in this account depends on how long the money will be in the account. If for any reason, you want to take out the money before the time you have agreed with the bank, the bank charges you a fee. This type of account could be used by a farmer business person planning to put more money into the replanting of cashew.

When opening a bank account, the agricultural entrepreneur investigates what the direct and the indirect costs associated with a bank account might be:

Direct cost	Indirect cost
• Monthly account holding fees • Counter withdrawal fees • Costs for an ATM card • Costs of ATM withdrawal • Account opening and closing fees	• Know your Customer requirements • Travel time and cost to reach the nearest bank branch, agent, or ATM

There are many financial institutions which offer different services with different fee structures. A good agricultural entrepreneur informs themself about the possible options available.

Loans

What are credit/loan and interest?

- A loan/credit is money you borrow from a person or a bank, promising to pay it back. This is a service you get, and you pay interest on the borrowed money. Money can be borrowed for a very short time (1 month to 12 months).
- Interest is the money you earn on your investment with the bank or insurance.
- Money can be borrowed for a short time (1 to 2 years).
- Money can also be borrowed for a long time (3 years onwards).
- Interest can be charged every week or every two weeks, every month or every year on the money you borrowed.

Reasons why people borrow:

- To invest
- To respond to an emergency
- To consume

What are the responsibilities when borrowing?

- How did you feel when you lent something – anything – to someone that was not returned to you? What did you do?
- How did you feel when you failed to return something that you borrowed? What happened?
- When someone borrows something, what are their responsibilities as the borrower?
- What can happen if the borrower fails to meet their responsibilities as a borrower?

What is the difference between using your own money and using borrowed money?

Using own money	Using borrowed money
• Fewer obligations and responsibilities • No interest to pay	• A loan comes with obligations for the borrower, including repayment with interest and, in some cases, group membership. • More access to more financial capital • A loan costs money

The most common sources of loans are summarized below:

Microfinance institution	Informal lender	Loans from friends and family
		
Bank		

What to know before borrowing:

- Why do you want to get a loan (purpose)?
- The sources of income and/or savings you need to reimburse the loan.
- When you will get the loan?
- The amount of your reimbursement, including principal amount (initial loan amount), interest and fees;
    - Usually, interest is charged monthly as a percentage on the principal loan amount in the informal sector. Banks usually use annual interest. Make sure that you really understand what the interest rate is, not only in a percentage but also the amount of money;
    - Loan processing fees as a percentage of the loan principal.
    - Mandatory credit life insurance.
- That from the investment made of the loan money, you will be able to repay the loan and also make a profit.
- Understand the repayment schedule and the grace period before the first repayment is due.

When you apply for a loan, the bank or microfinance institution will demand several things from you before they consider giving you a loan. Some requirements could be:

- A valid ID card;
- Proof of residence (e.g. utility bill);
- Some form of collateral or compulsory savings.

Depending from whom you borrow, the service fee and interest you will have to pay will vary.

Let us have a closer look at how a bank provides a loan. After applying for the loan, a bank will give you a letter telling you it has agreed to give you the money you have asked for. The bank also shows when you must pay back the total amount of money.

The agricultural entrepreneur (the borrower) and the bank know the payments of the loan, including service fee, interest and repayment of the principal, and when all the payments are to be made. This makes planning simple for all.

Example

Kwame is a farmer in Twalawa. He needs GH¢ 700 to buy fertilizer for his maize crop (1 hectare or 2.5 acres). He decides to go to the bank to borrow this money.

The bank agrees to give Kwame the money but tell him, he has to pay back 750 GH¢ in 5 months.

The 700 GH¢ Kwame borrowed is the credit. The 50 GH¢ Kwame will have to add to the money he borrowed is the interest.

The 5 months is how long it will take Kwame to pay back the money.

There are two common **types of loans:**

1. **Business Loan.** This loan is given to business people like farmers to make their business (farming) better or to increase the size of their business (farm increasing from 1 ha to 2 ha).

   These are examples of farm business loans:

Input Loan	This is a short time loan that can be used to buy improved planting material, fertilizer, insecticides or herbicides.
Expansion Loan	This loan helps farmers to increase their farming business by increasing the cropping area.
Other investment loans	For planting or replanting of cashew or other tree crops, you might need a loan for at least 3 years (see Module 11 Investment calendar)

2. **Personal Loans.** These loans **are not for business.** It is rather used to buy things that are needed for the home like a fridge or to pay school fees.

A good agricultural entrepreneur takes a loan only when they are sure to be able to repay on time. For this reason, they plan the investments and expenditures required.

Once a good agricultural entrepreneur has taken a loan, they stick to the objective of the investment. Otherwise, the agricultural entrepreneur is likely to have repayment problems.

Ways by which money can be borrowed

- The agricultural entrepreneur can borrow money as a single person (individual loan). In this case, the bank always asks for things like a building, a car or land to be put down as collateral, before giving out the money. In case they are not able to pay back the loan, the bank can take possession of the collateral. If they pay the loan and the service fee back in time, the bank will be happy to serve them again in the future.
- The agricultural entrepreneur can borrow money as a member of a group (Co-operative). The group can be a registered Farmer Organisation. If they pay back the loan and the service fee in time, the other group members will be happy to keep them in the group. If they do not pay back

in time, the bank may require other members of the group to pay on their behalf or make it more complicated for other members of the group to borrow money from the bank.

A good agricultural entrepreneur pays back loans plus the interest in the agreed time.

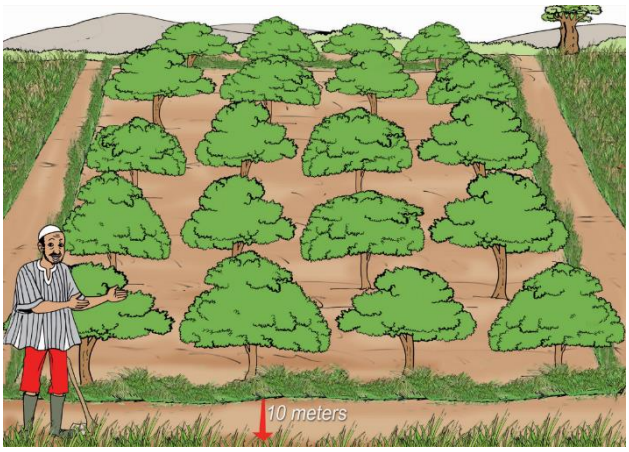
This way they can build a good relationship with the lender and make sure that next time they will get another loan at the same or even better condition!

Main Lessons

1. A good agricultural entrepreneur plans their expenditures and money entries throughout the year to avoid money shortages and unforeseen loans that are expensive.
2. To meet the needs of money in deficit months, a 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 microfinance 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. Different types of savings offer various benefits. Rural banks and microfinance institutions provide information and advice to inform their customers.
5. There are different types of loans. Choose the type of loan that offers a convenient interest rate and delay for reimbursement.
6. A good agricultural entrepreneur inquires about the possibilities and conditions for savings and loans before making a decision.
7. A good agricultural entrepreneur takes a loan only when they are sure to be able to repay on time. For this reason, they plan the investments and expenditures required. The Gross Margin and the Financial Calendar are the appropriate tools for such planning.
8. Once a loan is received, a good agricultural entrepreneur sticks to the objective of the investment. Otherwise, the agricultural entrepreneur is likely to have repayment problems.

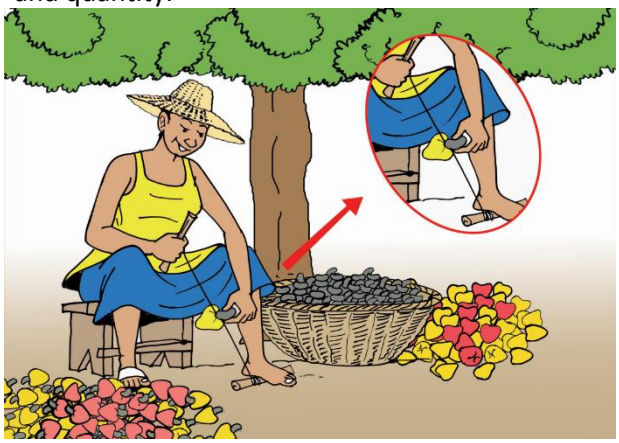
Module 9 Make more Money with Quality Cashew

The following pictures show cashew harvest and post-harvest practices that ensure quality cashew.



1)
Weed and protect your cashew farm against bush-fires before the harvesting season, to facilitate nut collection and to ensure the nuts are of high quality and quantity.

2)
Collect all ripe cashew fruits that have fallen to the ground every two or three days for quality nut production.

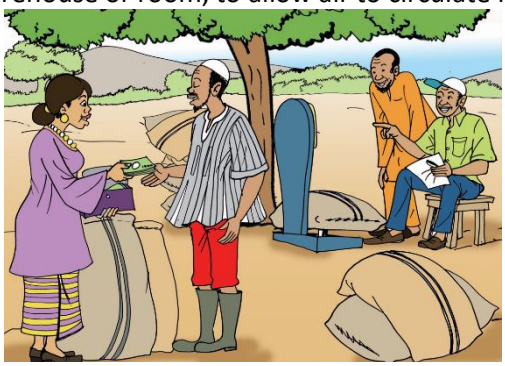


3)
Neatly remove the apple completely from the nut by turning the apple and nut in opposite directions, or by wrapping nylon cord around where the nut is joined to the apple.

4)
Remove and discard immature, diseased, shrivelled and damaged nuts, along with any foreign matter, between the nut collection and drying.

5)
Dry collected nuts on concrete floors, drying mats or tarpaulins under shade for 3-4 days, and turn frequently during the drying period to ensure uniform drying.

7)
Store cashew nut bags on wooden pallets in a dry, well-ventilated warehouse or room. Leave a clearance of at least 1.5m between the packed jute sacks and the roof as well as the walls of the warehouse or room, to allow air to circulate freely.



9)
Sell nuts within the same year of harvest to prevent loss in quality, by participating in bulk sale organized by the Village Cashew Farmers' Cooperative.

6)
After drying, put dried nuts in jute sacks, NOT in plastic or fertilizer sacks or containers like boxes, buckets, etc. as these do not allow adequate ventilation of the nuts.

8)
When possible, carry out KOR tests which will allow for better understanding of nuts quality. This puts the farmer in a better bargaining position. Buyers normally prefer nuts of 48-54 lbs.

Different qualities and types of cashew

Outturn (KOR)

*KOR = Useful Kernel Total Weight (g)*80/454*

Module 9: Calculating the Profit or Loss from Post-Harvest Processing of Cashew - Exercise

What is the profit of well-dried and good quality cashew?

1,020 kg of fresh raw cashew nuts gives 1,010 kg of raw cashew nuts if **not properly dried and sorted**. These nuts are of poor quality and the buyer will push for a discount.

1,020 kg of fresh raw cashew nuts give 1,000 kg of raw cashew nuts if **well dried and sorted**. No discount is made for these nuts because their quality is good.

	1. Bad drying and sorting				**2. Good drying and sorting**			
	Unit	**Quantity**	**Price GHC**	**Total GHC**	**Unit**	**Quantity**	**Price GHC**	**Total GHC**
Fresh raw cashew nuts	kg	1,020			kg	1,020		
Labour for drying	MD	9	20	**180**	MD	12	20	240
Time of drying	Day	1			Day	3		
Weight of raw cashew nuts after drying	kg	1,010			kg	1,005		
Labour for sorting	MD	**0**	20	**0**	MD	1	20	20
Weight of raw cashew nuts after sorting	kg	1,010			kg	1,000		
Quantity and value of the raw nuts based on drying and sorting	kg	1,010	5	**5,050**	kg	1,000	6	**6,000**
Money-In	GHC	1,010	5	**5,050**	GHC	1,000	6	**6,000**
Cost of drying and sorting	GHC			**180**	GHC			**260**
Benefit	GHC			**4,870**	GHC			**5,740**
Difference					GHC			**870**

Module 10 Benefits from membership in farmer organizations

- What is the use of being in a farmer organisation?
- What are the problems and risks of an organization that you know?
- How do you avoid these problems?
- What is your conclusion?

How can one know if a farmer organization works well?

➲ Existence of the group

- Members pay their annual contributions without pressure.
- Members accept the costs (deductions on sales) without complaining.

➲ Operation of the group

- Existence of rules.
- Existence of rules on the control of accounts.
- Regular production and presentation of reports.
- The evolution of group activities (tonnage production, sales volumes of expenditure group purchasing of inputs) is positive.

In the next section, we will look at the advantages of being a member of a farmer organization.

Exercise 1 – Group Purchase of Inputs

Group purchase of inputs can help to negotiate lower prices as larger quantities are bought.

As an example, we assume that inputs can be purchased at a 10% discount through purchasing as a group.

Let us see how much the benefit is for one group member if all required inputs (seed, herbicide, fertilizer, pesticides, bags, etc.) are purchased as a group at a lower price. Services such as land preparation, transport from field to house and market are not to be included.

Calculation of benefit from group purchase of inputs – improved farming techniques

Module 10: Exercise 1: Additional profits from group sales – in the case of improved farm production

		 **Cashew with pruning and fertilizer**		 **Groundnut Improved variety with Fertilizer**		 **Maize improved variety with fertilizer**	
	Unit	Individual Sale	Group Sale	Individual Sale	Group Sale	Individual Sale	Group Sale
Money-In	GHC	**7,500**	**8,250**	**5,000**	**5,100**	**3,500**	**5,005**
Production	Kg	1,500	1,500	2,500	2,500	3,500	3,500
Price (assumed 10% price raise)	Local currency/kg or head	**5**	**5.50**	**2**	**2.04**	**1**	**1.43**
Benefit of Group Sale	**GHC**						

Profit of the group sale	

Module 10: Solution 1: Additional profits from group sales – in the case of improved farm production

		 **Cashew with pruning and fertilizer**		 **Groundnut Improved variety with Fertilizer**		 **Maize improved variety with fertilizer**	
	Unit	Individual Sale	Group Sale	Individual Sale	Group Sale	Individual Sale	Group Sale
Money-In	GHC	**7,500**	**8,250**	**5,000**	**5,100**	**3,500**	**5,005**
Production	Kg	1,500	1,500	2,500	2,500	3,500	3,500
Price (assumed 10% price raise)	Local currency/kg or head	**5**	**5.50**	**2**	**2.04**	**1**	**1.43**
Benefit of Group Sale	**GHC**		**750**		**100**		**1,505**

Profit of the group sale	**2,355**

Module 10 Exercise 2: Profit from group purchase of inputs – in the case of Improved farming techniques

Inputs can be provided less 10% less expensive through grouped purchase. Let's see how much the benefit is for one group member if all required inputs are bought by the group at a lower price.

		 **Cashew with pruning and fertilizer**		 **Groundnut Improved variety with Fertilizer**		 **Maize improved variety with fertilizer**	
	Unit	Individual input purchase	Group input purchase	Individual input purchase	Group input purchase	Individual input purchase	Group input purchase (less 10%
Surface Area	Ha	1	1	1	1	1	1
Cost of Inputs	**GH¢**	**2,673**	**2,406**	**2,412**	**2,171**	**2,558**	**2,302**
Profit of group purchase	**GH¢**						

Profit from group purchase of inputs	

Total benefit of group business	

Module 10 Solution 2: Profit from group purchase of inputs – in the case of Improved farming techniques

Inputs can be provided less 10% less expensive through grouped purchase. Let's see how much the benefit is for one group member if all required inputs are bought by the group at a lower price.

		 **Cashew with pruning and fertilizer**		 **Groundnut Improved variety with Fertilizer**		 **Maize improved variety with fertilizer**	
	Unit	Individual input purchase	Group input purchase	Individual input purchase	Group input purchase	Individual input purchase	Group input purchase (less 10%
Surface Area	Ha	1	1	1	1	1	1
Cost of Inputs	**GH¢**	**2,673**	**2,406**	**2,412**	**2,171**	**2,558**	**2,302**
Profit of group purchase	**GH¢**		**267**		**241**		**256**

Profit from group purchase of inputs	**764**

Total benefit of group business	**3,119**

Main Lessons

1. Agricultural entrepreneurs 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 goal. To achieve their common goal, the members learn together, from each other and support 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 more easily seek financial services or information on production techniques from extension.
4. For input suppliers, it is easier and cheaper to work with farmer groups or associations than with individuals. A group of agricultural entrepreneurs can organize group purchases of agricultural inputs and can receive better prices from the input supplier.
5. For buyers of agricultural products, it is easier and cheaper to work with farmer groups or associations than with individuals. A group of agricultural entrepreneurs can organize group sales of agricultural products like cashew. The group can get better prices from the buyer – if the quality of the product is good.
6. Associations or groups of agricultural entrepreneurs that function well have clear rules that are respected. When the rules are broken by members, sanctions are applied.
7. Good leaders of farmer associations play their role to improve the business of all members.
8. Agricultural entrepreneurs who are members of well-functioning associations or groups do better business.
9. Agricultural Entrepreneurs who are doing better business with the support of their association pay their membership fees willingly.

Module 11 Investing in the Replanting of Cashew

Investing in the rehabilitation of old cashew plantations through Canopy Substitution

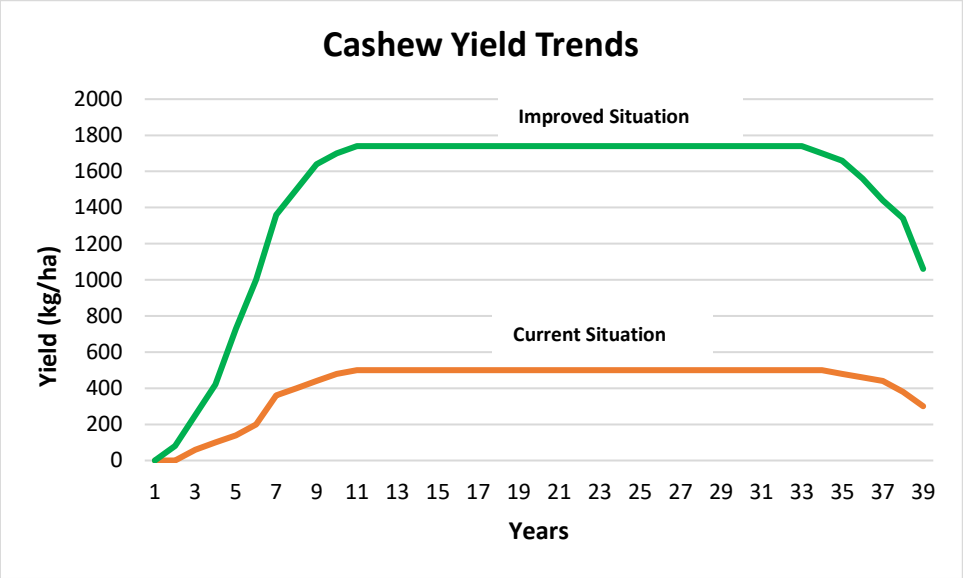
We have seen that you can make money with farming through good planting, improved techniques and calculations that help us make good decisions.

Let us now see the issue of rehabilitation of old cashew plantations through topworking.

First, we will quickly determine the age and yield of our plantation.

How old is your cashew farm?

What is the trend of your production in the last five years?

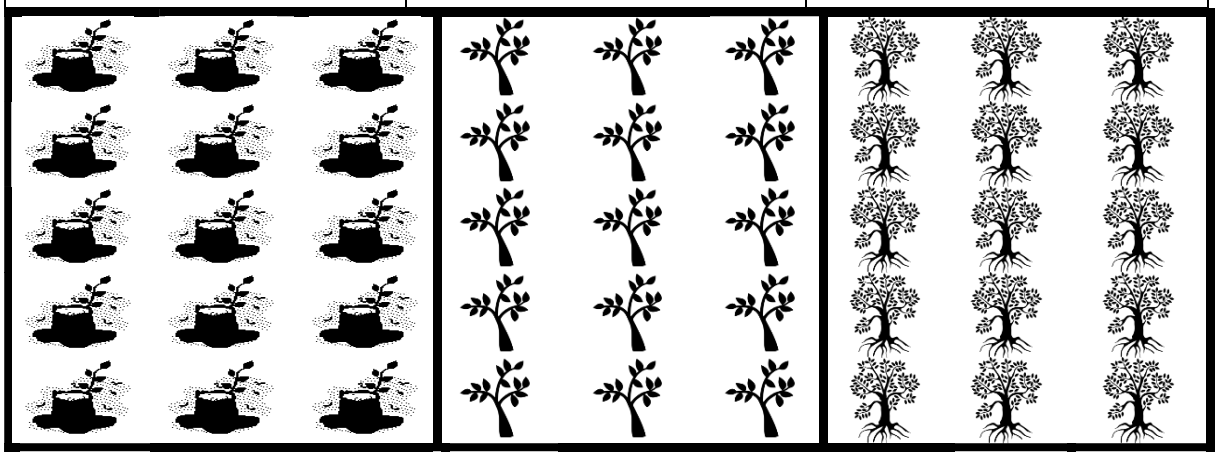


When cashew trees are old (over 25 or 30 years) it is worthwhile to plan the rehabilitation to replace or convert the old, low yielding and inferior-variety origin trees into superior and high yielding trees, resistant to drought, pest and diseases.

What are the possibilities?

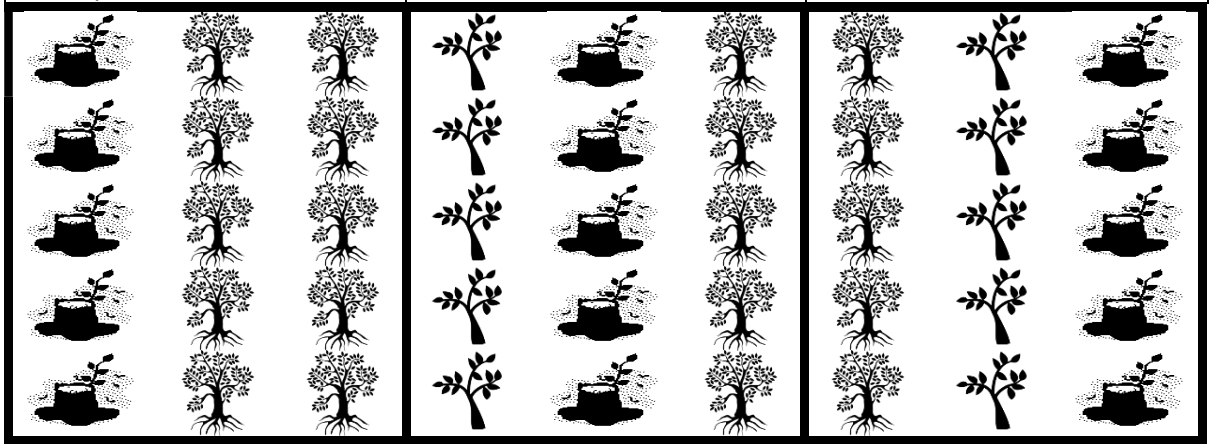
- ✓ **Complete Substitution**
- ✓ **Gradual Substitution**
- ✓ **Selective Substitution**

Complete Substitution		
Characteristics	**Advantages**	**Disadvantages**
• Stumping of all the trees; • Production history is not considered; • Applied on a vast area; • Need windbreaker.	• Uniformity (Productivity and tree size); • High productivity	• High cost; • Loss of production the first year



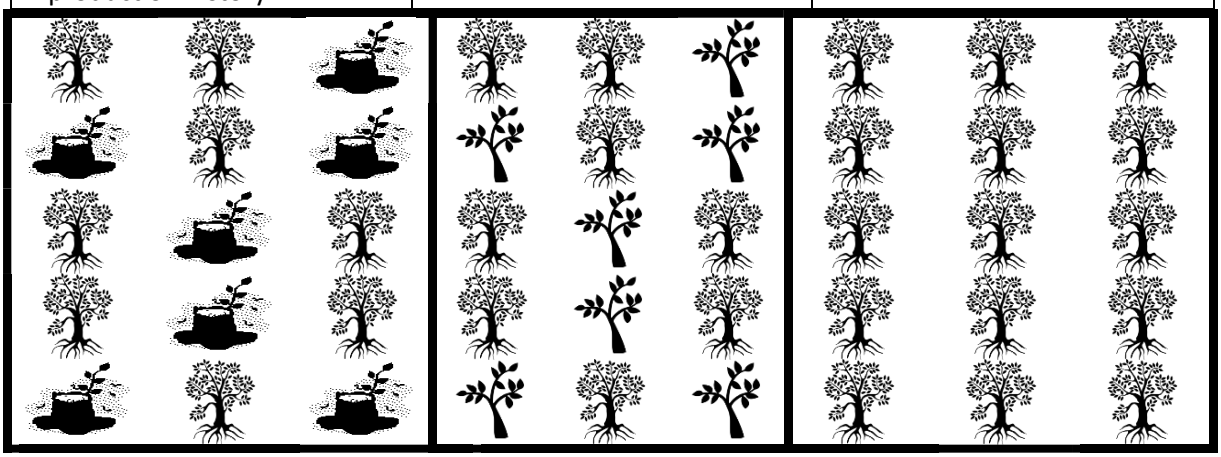
Year 1 Year 2 Year 3

Gradual Substitution		
Characteristics	**Advantages**	**Disadvantages**
• Stumping of 25 or 50% of the trees; • Applied on vast area; • Production history is not considered; • Possibility to shift to complete substitution	• Lower implementation cost • Lower production loss during the first years	• Lack of homogeneity • Maintenance of unproductive trees



Year 1 Year 2 Year 3

Selective Substitution		
Characteristics	**Advantages**	**Disadvantages**
• Stumping of unproductive trees only • Applied on small areas • Need to consider the production history	• Lower implementation cost • Lower production loss during the first years • High productivity	• Lack of homogeneity • Difficult to manage tree density



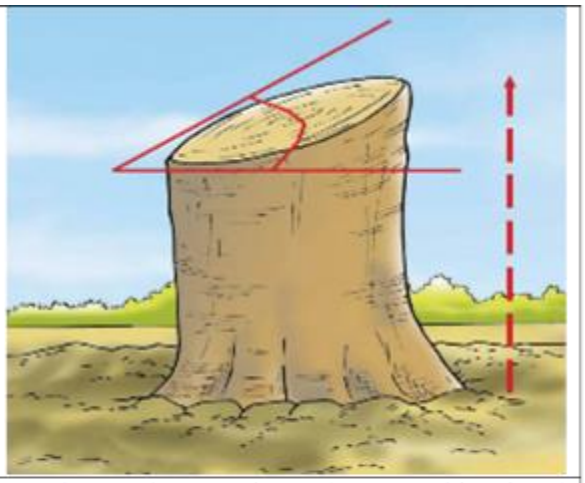
Year 1 Year 2 Year 3

Recommended Planting Distance

Planting Distance	10m x 10m
Number of seedlings per hectare	100
Number of seedlings per acre	40

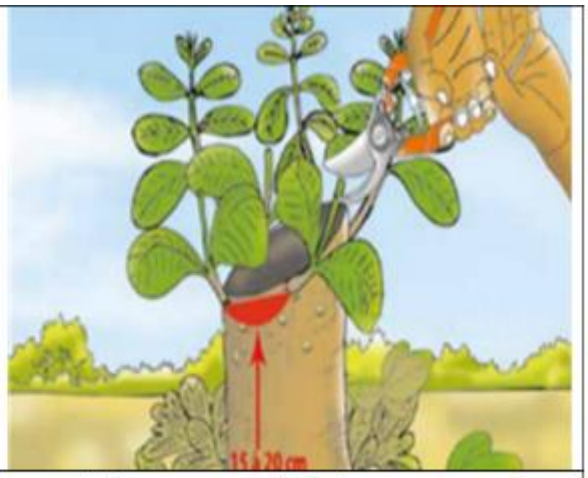
Technical Steps of the Canopy Substitution (Topworking)

Stump selected unproductive trees with a chainsaw, cutting progressively the main branches from top to bottom and then the trunk

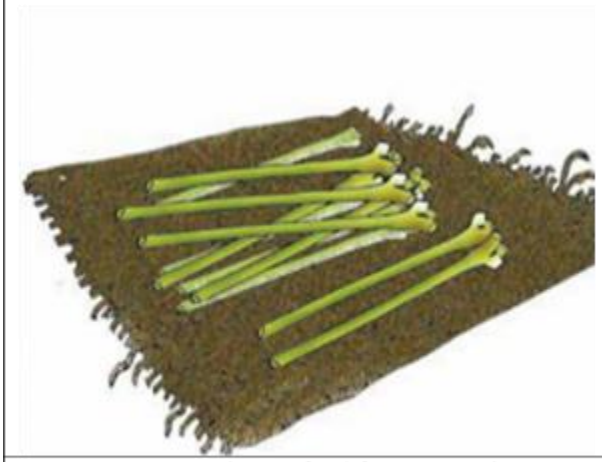
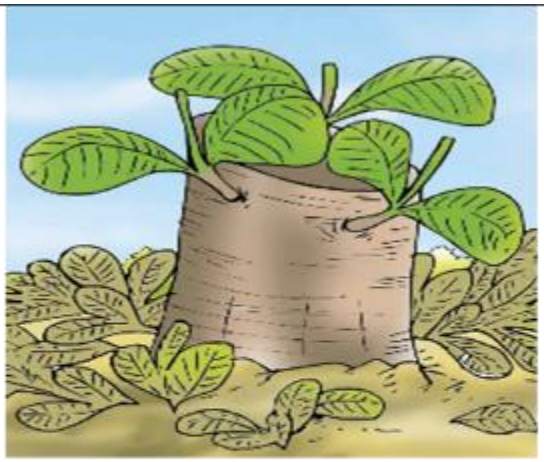
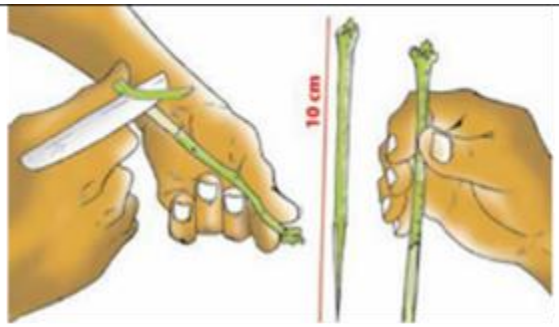
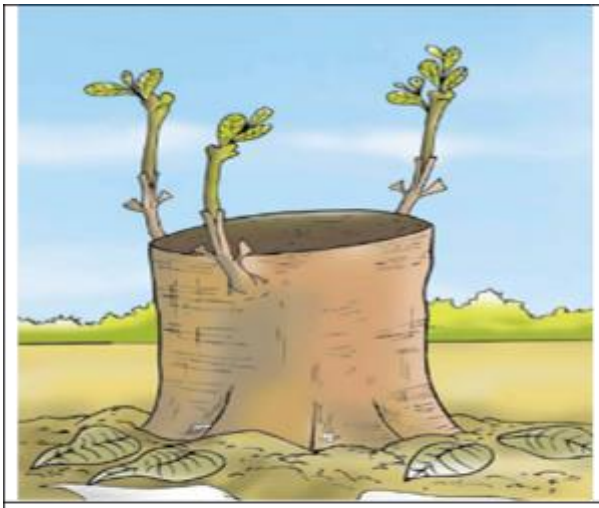
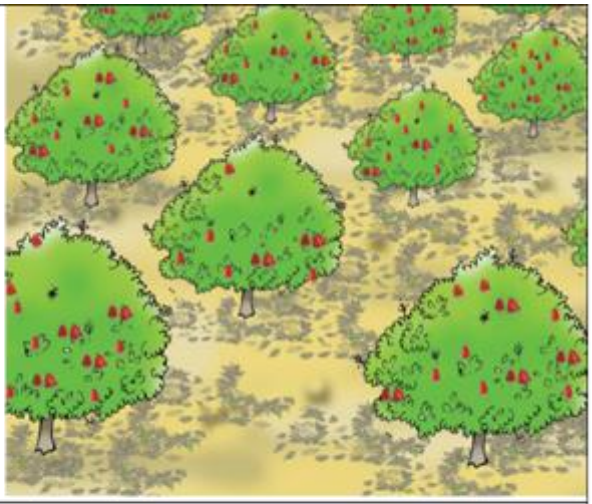


cut the trunk 0.5m above the ground level and at an angle of 30°. This is done to ensure that water does not collect on the cut surface.

Protect the stump against desiccation and pest attack by covering the cut surface with leaves and branches



Inspect the stump regularly to ensure good shoot initiating and remove the shade after 3-4 weeks when shoots are ready

	
Harvest scions to be grafted from a mother tree or from a scion bank with desirable characteristics in the morning or evening	Choose shoots with the same thickness as the scion around the edges of the cut surface for grafting by making a split 3cm to 4 cm deep passing through the middle of the shoot
	
Select the scion of the same thickness and slice bottom part into a wedge or "v" shape 2.5 - 3cm long	Insert the scion into the split made in the shoot and tie it firmly with a grafting or budding tape
	
Monitor the grafted materials once every two days for the first 21 days until the apical bud emerges and then remove the tape progressively	After topworking a tree, it begins to bear fruit after 1 to 2 years because the root system is already well established

Overview annual and cumulative Money-Out and Money-In

Cashew intercropped with groundnut	1.0 ha

Money-Out (GHC)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Inputs and Services	1,014	730	651	479	173	200	226	253	266	266	266	145	145	145	265	265	265	265	265	265
Labour Costs	2,570	1,622	1,469	1,258	1,315	1,452	1,549	1,756	1,724	1,479	1,499	1,579	1,479	1,479	1,499	1,579	1,479	1,479	1,479	1,599
Equipment	200	0	0	200	200	0	200	0	0	200	0	0	200	0	0	0	0	0	0	0
Total Money-Out (GHC)	**3,784**	**2,352**	**2,120**	**1,937**	**1,688**	**1,652**	**1,975**	**2,009**	**1,990**	**1,945**	**1,765**	**1,724**	**1,824**	**1,624**	**1,764**	**1,844**	**1,744**	**1,744**	**1,744**	**1,864**

Money-In (GHC)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Cashew																				
Production (kg)	0	30	75	150	450	750	1,050	1,350	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
Gross-revenue (GHC)	0	150	375	750	2,250	3,750	5,250	6,750	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500
By-Products (Firewood)																				
Production (Bunches)	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gross-revenue (GHC)	1,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Groundnut unshelled																				
Production (kg)	2,250	1,750	1,500	1,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gross-revenue (GHC)	4,163	3,238	2,775	1,850	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Money-In (GHC)	**5,163**	**3,388**	**3,150**	**2,600**	**2,250**	**3,750**	**5,250**	**6,750**	**7,500**	**7,500**	**7,500**	**7,500**	**7,500**	**7,500**	**7,500**	**7,500**	**7,500**	**7,500**	**7,500**	**7,500**

Result	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Annual balance (GHC)	**1,379**	**1,036**	**1,030**	**663**	**562**	**2,098**	**3,275**	**4,741**	**5,510**	**5,555**	**5,735**	**5,776**	**5,676**	**5,876**	**5,736**	**5,656**	**5,756**	**5,756**	**5,756**	**5,636**
Cumulative balance (GHC)	**1,379**	**2,415**	**3,445**	**4,108**	**4,670**	**6,768**	**10,043**	**14,784**	**20,294**	**25,849**	**31,584**	**37,360**	**43,036**	**48,912**	**54,648**	**60,304**	**66,060**	**71,816**	**77,572**	**83,208**

Main lessons

1. A good agricultural entrepreneur knows that the production of cashew plantations starts to reduce when it is older than 35 years and will not bring him enough incomes.
2. A good agricultural entrepreneur plans and organizes to implement the rehabilitation techniques of old cashew plantations to improve yield and farm income.
3. When a good agricultural entrepreneur wants to rehabilitate a cashew plantation, he favours the use of improved planting materials that are high yielding and resistant to drought, pest and diseases
4. For a plantation with a low yield and less than 15 years of age, canopy substitution is the best method for ensuring a sustainable income for the agricultural entrepreneur.

Module 12 Becoming an entrepreneur in Practice

The work templates have been presented to you in this session.

- What have you learned?
- What will you change?
- After this training what will you do to become an agricultural entrepreneur in practice?
- What do you need to succeed and do good business?

Ask for your FBS participation certificate with serial number and signature of your trainer

The FBS workbook has been integrated in this book.

Please use the following pages of the FBS workbook

➔ To plan production
➔ To record labour and inputs for each plot
➔ To calculate Money-Out, Money-In and your profit
➔ To calculate your profit and to plan expenditure and money-in over the year.

Templates for application
Plan and evaluate production

Cropping calendar for plot 1

Size of the Plot (field)	Main Crop	Variety
	Associated mixed crop 1	Associated mixed crop 2

Work Planned	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec

Profit or Loss plot 1

Plot area : _____	**Unit**	**Expected before production**			**Evaluation after harvest**		
		Quantity	Price (GH¢)	Total (GH¢)	Quantity	Price (GH¢)	Total (GH¢)
1. Money-Out							
Inputs							
Total cost of inputs							
Labour (Man-Days)							
	MD						
	MD						
	MD						
	MD						
	MD						
	MD						
	MD						
	MD						
	MD						
	MD						
	MD						
	MD						
Total Labour needs and costs	MD						
Total Money-Out Costs of inputs + Cost of Labour			GH¢				
2. Money-In Production X sales price			GH¢				
3. Profit or Loss? Money-In MINUS Money-Out			GH¢				
4. Unit Cost (GH¢/kg) Money-Out / Production			GH¢/kg				

Tracking Money-Out for plot 1

Date	Reason	Amount « money out »
	Total	

Tracking Money-In for plot 1

Date	Reason	Amount « money in »
	Total	

Plot 2

Cropping calendar for plot 2

Size of the Plot (field)	Main Crop	Variety
	Associated crop 1	Associated crop 2

Work Planned	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec

Profit or Loss plot 2

Plot area : _____	Unit	Expected before production			Evaluation after harvest		
		Quantity	Price (GH¢)	Total (GH¢)	Quantity	Price (GH¢)	Total (GH¢)
1. Money Out							
Inputs							
Total cost of Inputs							
Labour (Man-Days)							
	MD						
	MD						
	MD						
	MD						
	MD						
	MD						
	MD						
	MD						
	MD						
	MD						
	MD						
	MD						
Total Labour needs and costs	MD						
Total Money-Out Costs of inputs + Cost of Labour			GH¢				
2. Money-In Production X sales price			GH¢				
3. Profit or Loss? Money-In MINUS Money-Out			GH¢				
4. Unit Cost (GH¢/kg) Money-Out / Production			GH¢/kg				

Tracking Money-Out for plot 2

Date	Reason	Amount « Money Out »
	Total	

Tracking Money-In for plot 2

Date	Reason	Amount « Money In »
	Total	

Plot 3

Cropping calendar for plot 3

Size of the Plot (field)	Main Crop	Variety
	Associated crop 1	Associated crop 2

Work Planned	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec

Profit or Loss plot 3

Plot area : _____	**Unit**	**Expected before production**			**Evaluation after harvest**		
		Quantity	Price (GH¢)	Total (GH¢)	Quantity	Price (GH¢)	Total (GH¢)
1. Money Out							
Inputs							
Total Cost of Inputs							
Labour (Man-Days)							
	MD						
	MD						
	MD						
	MD						
	MD						
	MD						
	MD						
	MD						
	MD						
	MD						
	MD						
	MD						
Total Labour needs and costs	MD						
Total Money-Out Costs of inputs + Cost of Labour			GH¢				
2. Money-In Production X sales price			GH¢				
3. Profit or Loss? Money-In MINUS Money-Out			GH¢				
4. Unit Cost (GH¢/kg) Money-Out / Production			GH¢/kg				

Tracking Money-In for plot 3

Date	Reason	Amount « Money In »
	Total	

Evaluate the production year

Plot number	Main Crop	Area (Size)	Money-Out	Production	Unit of production	Sales Price per unit	Money-In	Profit or Loss
1								
2								
3								
	Total							

	Plot 1	Plot 2	Plot 3	Plot 4	Plot 5
Main crop					
Am I satisfied with the results of the year?	Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐
What is the most important improvement to make for the next year?					
What purpose does this change have?					
How will I make this change? How much will it cost?					
How much money can I raise?					
Do I need credit?					

Managing money throughout the year

Planning of household expenditure

Financial Needs	**Expenditures (GH¢)**	**When**
Matches		Monthly
Salt		Monthly
Soap		Monthly
Petrol		Monthly
Food		Monthly
Water		Monthly
Sub-total		Monthly
School fees		Once per year
Clothing		Once per year

Financial Needs	**Expenditures (GH¢)**	**When**
Happy Events Christmas		December
Easter		March/April
Reserves for unforeseen expenditures		Monthly

Money-Out

My Financial Calendar for Planning

Crop		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
	Inputs												
	Labour												
	Inputs												
	Labour												
	Inputs												
	Labour												
	Inputs												
	Labour												
	Inputs												
	Labour												
	Inputs												
	Labour												
Equipment and tools													
Household													
School fees													
Happy Events													
Clothing													
Total Money-Out per month													

Money-In

Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Other revenues												
Total Money-In per month												
Monthly balance Money In – Money Out												
Cumulative Balance												

Manage loan and reimbursement

Purpose of loan	
Interest Rate	
Date of loan	
Final Reimbursement date	
Amount received	
Amount to reimburse	
Date	**Amount reimbursed**

The partners

The Directorate of Crop Service (DCS) is partner of GIZ/ComCashew and a technical Directorate of the Ministry of Food and Agriculture under the Ghana Civil Service.

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GIZ is responsible for the content of this publication

ABC of the Agricultural Business Community

A	**A**griculture **A**sset
B	**B**usiness **B**ank
C	**C**redit **C**alculate
D	**D**iversification **D**ebt
E	**E**nterprise **E**quipment
F	**F**arm **F**ood
G	**G**ain **G**ross margin
H	**H**arvest **H**ectare
I	**I**ncome **I**nvestment
J	**J**ob
K	**K**ilogram **K**ilocalorie
L	**L**oss **Labour**
M	**M**anagement **M**arket
N	**N**utrition **N**egotiation
O	**O**rganization **O**wner
P	**P**lan **P**roductivity **P**rofit
Q	**Q**uality **Q**uantity
R	**R**ecord keeping **R**ice
S	**S**avings **S**chool fees
T	**T**on **T**rial
U	**U**nit **U**nion of producers
V	**V**alue **V**ariable cost
W	**W**ork **W**arrantee
X	E**x**port crop E**x**penditure
Y	**Y**ield
Z	**Z**ero **Z**one