Trainer's Notes

Small Farm / Business Analysis

Module Six

Lukautim Ol Rekot Na Buk Bilong Bisnis

Integrated Agriculture Training Program

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Unit 1:
Balance Sheet

The Balance sheet is a very important financial management tool. It is an inventory of Assets and Liabilities.

- **The Assets show the value of the business resources**
- **The Liabilities show what the business owes**
- **The Owner's Equity shows what is owned by the owner and is the difference between the total assets and the total liabilities.**

What is an Asset?

An asset is something that adds value to the business or farm.
Ask for examples
Assets can be grouped and it is common when keeping records to look at
1. Current Assets and
2. Fixed Assets.

Current Assets can be thought of as assets that come and go while Fixed Assets are more permanent parts of the farm or business.
Ask for examples and discuss to generate an understanding.
Sometimes it is not easy to distinguish between these two. Sometimes it is necessary for the law to establish rules to help distinguish these. Eg a piece of machinery that is bolted to the ground may be considered a fixed assets while a similar piece of machinery operating from the back of a truck is not.

Current assets would include things like:
Cash, Money owing to you for goods you have sold) (cash to come – Debtors)
Products you have to use on your farm/business like chemicals, animal feed
Livestock – chickens, pigs, cattle etc
Stock to sell such as the groceries in a grocery store
Plant and Machinery – Vehicles, tractors, slashers, generators, refrigerators, office equipment, shop fittings, farm tools

Fixed Assets would include things like:
Land and things attached to the land.
These may include a house, sheds, shop, or even trees in the case of a cocoa farm

What is a Liability?

Liabilities are the opposite of assets. They are things that the business or farm owe to other people, businesses or institutions. Again these can be short-term liabilities (also called current liabilities) or long-term liabilities depending on when the debts have to be repaid. Things that have to be paid for when purchased or shortly after are short-term liabilities. Debts that are taken over a long period of time (say more than a year) are Long-term liabilities. Long term liabilities are usually the money borrowed from a bank to buy the farm, business, new machinery and so on.

The monthly or yearly repayments of these loans are considered to be short-term liabilities

Now have trainees move into groups to do Exercise 1 which can be found in the Trainees Workbook. Work through the first four examples to ensure understanding. After trainees have completed this exercise, check answers and discuss any problems.

Exercise 1

(a) Work through the following list and decide how you would classify each item. Follow the examples given.

Item	Classification
50 Chickens	Asset, Current, Livestock
Account from Agmart for Fertilizer	Liability, Current
Drying Shed	Asset, Fixed
Bank Loan	Liability, Long Term
Cash in bank	
Dried cocoa ready to be sold	
Farm Tractor	
Account for electricity	
Vanilla sold to buyer but not yet paid for	
House	
Loan from bank for new car	
Sewing needles and thread	
2 pigs	
Slasher	
100 litres Pesticide	
Loan on house from Credit Union	
Bank repayment on car	
Harvested vanilla	
50 5year old cocoa trees	
Account from Cocoa Board for registration	
Account for transport	
2 bags of chicken feed on hand	
Farm tools	

(b) Now write the items under the correct headings:

Asset - Current	Asset – Livestock
Asset –Plant and Machinery	Fixed Assets
Liabilities - Current	Liabilities - Long Term

Exercise 1 - with answers

(a) Work through the following list and decide how you would classify each item. Follow the examples given.

Item	Classification
50 Chickens	Asset, Current, Livestock
Account from Agmart for Fertilizer	Liability, Current
Drying Shed	Asset, Fixed
Bank Loan	Liability, Long Term
Cash in bank	*Asset, Current, Cash*
Dried cocoa ready to be sold	*Asset, Current*
Farm Tractor	*Asset, Current, Plant and Machinery*
Account for electricity	*Liability, short-term*
Vanilla sold to buyer but not yet paid for	*Asset, Current*
House	*Asset, Fixed*
Loan from bank for new car	*Liability, long-term*
Sewing needles and thread	*Assets, Current, Plant and Machinery*
2 pigs	*Asset, Current, Livestock*
Slasher	*Asset, Current, Plant and Machinery*
100 litres Pesticide	*Asset, Current*
Loan on house from Credit Union	*Liability, Long-term*
Bank repayment on car	*Liability, Short-term*
Harvested vanilla	*Asset, Current*
50 5year old cocoa trees	*Asset, Fixed*
Account from Cocoa Board for registration	*Liability, Short-term*
Account for transport	*Liability, Short-term*
2 bags of chicken feed on hand	*Asset, Current*
Farm tools	*Asset, Current, Plant and Machinery*

(b) Now write the items under the correct headings:

Asset - Current *Cash in bank* *Money owning for chickens* *Cocoa on hand* *Chemicals on hand* *Feed on hand*	Asset – Livestock *Chickens*
Asset –Plant and Machinery *Vehicle* *Tractor* *Slasher* *Generator* *Tools*	Fixed Assets *Land with trees* *House* *Chicken Shed* *Drying Shed*
Liabilities - Current *Account for transport* *Account for chemicals* *Account for replacement trees* *Loan Repayments*	Liabilities - Long Term *Bank Loan*

What is Owner's Equity?

The owner's equity is the difference between total assets and total liabilities. It tells how much of the farm/business is owned as opposed to owing to a bank or lending institution.

If you buy a business with a 10% deposit and borrow the remainder from a bank, then you are considered to be the owner of the business but you only own 10% and the bank or lending authority has 90%. On the other hand if you pay cash for your business and don't borrow any money, you are the owner and own 100% and we say the owner's equity is 100%. Compare this to only 10% in the first example.

Obviously many successful business people have started with only a small owner's equity that they have built up over the years. It can be difficult for the owner if the owner's equity is small. There is a bigger risk that if bad times come (bad weather or low prices for the farmer or competition for the trade store), the owner will not be able to meet the debts and might end up losing the farm or store. But we will talk more about this later.

To calculate the owner's equity you subtract the total liabilities from the total assets. The assets, liabilities and owner's equity appear in the Balance Sheet.

The Main Uses of the Balance Sheet include allowing you to:

- Estimate the present value of the farm/business for sale purposes
- Calculate the return on capital. To do this you will need the net profit from the Profit and Loss statement. (We will be doing this later)
- Calculate the return on equity. This will allow you to compare this enterprise with other investments.
- Identify changes that have occurred in the business over time
- Give information to other stakeholders e.g. banks, shareholders, taxation department, local government etc
- Analyse and find useful information about the viability of the business (see Unit 3)

Presentation of the Balance Sheet:

There are many ways a balance sheet can be presented: Below is an example of one way. This balance sheet has not been completed but gives you the headings to enable you to complete . *Have a poster of this made to display*

Balance Sheet for Wontok Traders as at 30/6/XX

Assets			
Current			
Cash		500	
Accounts owing		200	
Feed on hand		100	800
Livestock			
Cattle		1000	
Pigs		750	1750
Plant and Machinery			
Tractor		xxx	
Generator		xxx	xxx
Fixed assets			
Land		xxx	
House		xxx	
Shed		xxx	xxxx
Total Assets			xxxxx
Less			
Liabilities			
Current	xxxx		
Long Term	xxxx		
Total Liabilities			xxxxx
Owner's Equity (A-L)			xxxx

Note that from this balance sheet you can easily see the value of the different items, Can you find the:

- value of the fixed assets,
- value of the machinery
- debts still to pay
- outstanding long-term loans
- value of stock
- amount of money owing to you
- owner's equity.

Questions to discuss:

How does the Balance Sheet help you decide how much you should sell for?

If you wanted to borrow more money, what things in the balance sheet would the bank look at?

What additional information might you get about your farm/business, if you had the balance sheets for the last three years?

Now ask trainees to work in groups to do Exercise 2 in their workbooks.

When this is completed and a discussion has followed, attempt Exercise 3 or ask trainees to work on this exercise at home and be available to assist if necessary. Some may have the information on hand while others will not. Some may prefer not to discuss this information as a class exercise. Be flexible here to ensure trainees feel comfortable, but confident enough to complete the exercise.

Exercise 2(a) - with answers

Use the following information to draw up a Balance Sheet for the farm – "Happy Valley Family Farm" as at 30.06.03
(Use your answers from Exercise 1 to help)

Cash in Bank 30.06.03	1250	Dried cocoa ready for market	750
Value of Farm Vehicle	3000	50 chickens	500
House	20000	Account to pay Agmart chemicals	370
Outstanding Account-transport	120	Money to come in for dressed chickens sold	120
Farm Loan	15000	Farm tractor	950
Slasher	560	Land planted	22000
Drying Shed	3600	Bank repayment	1800
Chicken feed on hand	250	Generator	200
Account to pay for replacement trees	740	Chicken Shed	1200
Farm Tools	250	Chemicals on hand	1400

Firstly, you might like to put each item in its correct place as you did in Exercise1

Asset – Current	Asset – Plant and Machinery
Asset – Livestock	Fixed Assets
Liabilities – Current	Liabilities - Long Term Bank Loan

Answers for this exercise can be found in balance sheet on the following page.

Balance Sheet
"Happy Valley Family Farm" as at 30.06.03

Assets			
Current			
Cash in bank	1250		
Money owing - chickens	120		
Cocoa on hand	750		
Feed on hand	250		
Chemicals on hand	1400	3770	
Livestock			
Chickens 50@K10	500	500	
Plant and Machinery			
Vehicle	3000		
Tractor	950		
Slasher	560		
Generator	200		
Tools	250	4960	
Fixed assets			
Land with trees	22000		
House	20000		
Chicken Shed	1200		
Drying Shed	3600	46800	
Total Assets			56030
Less			
Liabilities			
Current			
Account for transport	120		
Account for chemicals	370		
Account replacement trees	740		
Bank Repayment and Interest	1800		3030
Long Term			
Bank Loan	15000		15000
Total Liabilities			**18030**
Owner's Equity (A-L)			**38000**

Exercise 2(b) - with answers

From your prepared Balance Sheet answer the following questions:

a) What is the owner's equity in this farm? *38000*

b) What is the value of the fixed assets? *46800*

c) What is the value of the long-term liabilities? *15000*

d) How much money is owing to the farmer? *120*

e) How much money does the farmer owe? *3030*

f) What is the value of the livestock on this farm? 500

g) If this farm was for sale, suggest and discuss a selling price

You would sell for the value of the total assets except for those assets you would keep eg. cash and usually debtors (money owing to you). Some buyers don't want some items eg. machinery or livestock or both, so the price would have to be adjusted accordingly. Hence you would expect around 56030 less 3770 (52260)This will give you an estimate of the farm's value but sometimes this will vary because of other factors. Eg Two people might want to buy it so one might be prepared to pay a little more. As the owner, you would not be happy selling it for less than this amount.

Exercise 3 below allows the trainees to apply what has been learnt to their own blocks.

Be aware that the trainees may not like to discuss their own situations with the group so you might suggest they do this at home. You should be prepared to discuss this question with individual trainees if they ask.

Exercise 3

Now use this example as a guide to draw up a balance sheet for your own farm/ business.

Firstly you will need to list and estimate a value for:
Current Assets
Livestock
Fixed Assets
Plant
Machinery
Office Equipment
Current Liabilities
Long term Liabilities

Now draw up a balance sheet for your farm/business/household.

Question 1. Suppose you are thinking of selling your farm. Use this Balance Sheet to give you an estimate of how much you might expect to receive for your farm/business.

Question 2. What is the owner's equity in your farm?

Unit 2:
Profit and Loss Statement

Introduction:

A profit and loss statement looks at your farm/business over a set period (usually 1 year) to see if your business/farm has made a profit or loss and to show how much that profit or loss is.

Use:

Knowing this figure allows you to:

1. Plan how you might continue your business.
   - Can you afford to take money out for your personal use?
   - Can you afford to buy new equipment?
   - Should you increase the size of your business?
2. Compare your investment in this business with other investments.

In most countries, companies are required by law to publish a Profit and Loss Statement each year.

In order to understand and calculate a Profit and Loss Statement, we will look at four very important areas.

1. Depreciation and how it is used
2. Terms that are used in the Profit and Loss Statement and that must be understood
3. How to calculate Profit and Loss for a business
4. Using the Profit and Loss Statement and the Balance Sheet to make decisions about businesses

1.Depreciation and How to use it

Depreciation is the loss in value of an asset caused by wear and tear or other loss in value such as the introduction of new technology.
Explain this carefully
Buildings, machinery and equipment are things that last a long time. If, say, you bought a new truck this year, would it show a fair picture of your farm profit if you took the whole cost of that truck from your income for this year? No, it wouldn't. Somehow we have to be able to proportion that cost over the life of the truck. Suppose you expect that truck to last for five years. To be fair, each year for the next five years you should allow 1/5 of the value of that truck as a cost of production.

Likewise you might build a new shed which you expect to last for 20 years. Again it would not be right to offset the whole cost of the building against one year's income so you would spread it over the whole 20 years. Here we are calculating the contribution that an asset makes each year and giving it a monetary figure. This contribution each year is called the depreciation. It is necessary to be able to calculate this and keep a record of it.
There are several ways to calculate depreciation, but the one used most is called *straight line* depreciation. This can be calculated in 3 simple steps:

To calculate depreciation:

(i) estimate the life of the asset (say 20 years)
This is not always easy and you will have to estimate how long the asset will last. The farmer/business person will have to use their knowledge and experience here to help calculate this figure

(ii) know the value of the asset when you purchased it.(say K4000.00)

(iii) divide (ii) the purchase price of the asset by (i) the estimated life of the asset (4000÷20) to get the yearly depreciation which in this case is K200.00

This tells you how much that asset has depreciated in value over 1 year. It also tells you how much the asset has contributed to this year's profit (K200)

To calculate the depreciated value of the asset, each year you deduct (subtract) the yearly depreciation from the last year's value

You will need to do this for each fixed asset and record the information in a **depreciation schedule.**

Now work through and explain the first example of Exercise 1a for the trainees and then when you are sure they understand, ask them to complete this Exercise, working in their groups. Exercise 1a can be found in their workbooks.

Exercise 1a

For each of the following, calculate the yearly depreciation and the depreciated value of the asset in 2003.

1. A tractor was purchased in 1999 for K10000 with an estimated life of 10 years

2. A new shed was built in 2000 for K8000.00 with an estimated life of 20 years

3. A cocoa dryer purchased in 2001 for K3000 with an estimated life of 15 years

4. A utility was purchased in 2002 for K6000.00 with an estimated life of 5 year

Now show trainees the poster of the table from Exercise 1b, and explain the Depreciation Schedule. Work through the first example and when trainees fully understand, ask them to complete this exercise.

Exercise 1b

Using the information from Exercise 1a, complete the Depreciation Schedule below:

Depreciation Schedule Happy Valley Farm from 30.06.02 to 30.06.03

Item	Year purchased	Purchase Value	Yearly Depreciation	Asset Value 2002	Asset Value 2003
Tractor	1999	10 000.00	1000.00	7000.00	6000.00
Packing/ Storage Shed					
Cocoa Dryer					
Farm Vehicle (ute)					
TOTAL					

Exercise 1a - with answers

For each of the following, calculate the yearly depreciation and the depreciated value of the asset in 2003.

1. A tractor was purchased in 1999 for K10000 with an estimated life of 10 years

Value of **tractor** (1999)		K10000
Life of tractor		10 years
Depreciation/year	10000/10	K1000
Value 1999		10 000
2000	= 10 000 – 1000	= 9 000
2001	= 9 000 - 1000	= 8 000
2002	= 8 000 - 1000	= 7 000
2003	= 7 000 - 1000	= 6 000

2. A new shed was built in 2000 for K8000.00 with an estimated life of 20 years

Value of **Shed** (2000)		= K 8000
Life of Shed		= 20 years
Depreciation/year	8000/20	= K 400
Value 2000	=8000	
2001	=7600	
2002	=7200	
2003	=6800	

3. A cocoa dryer purchased in 2001 for K3000 with an estimated life of 15 years

Value of **Dryer** (2001)		= K 3000
Life of Dryer		=15 years
Depreciation/year	3000/15	= K 200
Value 2001	=3000	
2002	=2800	
2003	=2600	

4. A utility was purchased in 2002 for K6000.00 with an estimated life of 5 year

Value of **Ute** (2002)		= K 6000
Life of Ute		= 5 years
Depreciation/year	6000/5	= K 1200
Value 2002	=6000	
2003	=4800	

Exercise 1b - with complete solution

Using the information from Exercise 1a, complete the Depreciation Schedule below:

Depreciation Schedule Happy Valley Farm from 30.06.02 to 30.06.03

Item	Year purchased	Purchase Value	Yearly Depreciation	Asset Value 2002	Asset Value 2003
Tractor	1999	10 000.00	1 000.00	7 000.00	6 000.00
Packing/ Storage Shed	*2000*	*8 000.00*	*400,00*	*7 200.00*	*6 800.00*
Cocoa Dryer	*2001*	*3 000.00*	*200.00*	*2 800.00*	*2 600.00*
Farm Vehicle (ute)	*2002*	*6 000.00*	*1 200.00*	*6 000.00*	*4 800.00*
TOTAL			***K2 800.00***	***K23 000.00***	***K20 200.00***

2.Terms that are used in the Profit and Loss Statement

Before this Profit and Loss can be calculated, it is necessary to understand some terms used.

Income is the money you receive. It can be:

Operating income which in the case of a farm, is the income you receive from growing your crops or animals or produce to be sold. In the case of a grocery shop, it is the income from selling groceries.
Non-operating income is from the sale of something other than the produce grown or sold from the farm/business. It might be income from the sale of an old piece of equipment that you have replaced or have no further use for such as an old refrigerator, old tractor or some old shelving.

Expenses are the money you pay out. They can be:

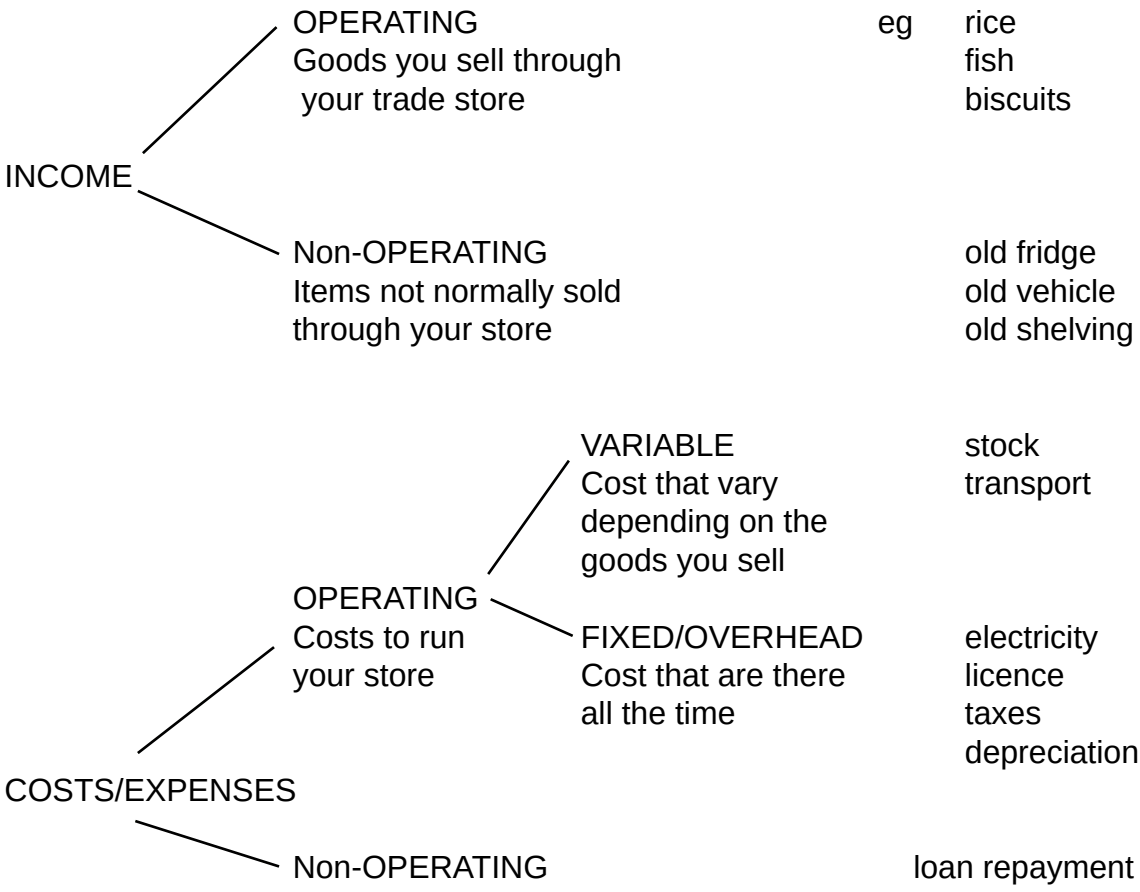
Operating expenses or costs directly associated with the business of the farm or other business. These are cost involved in running your farm/business, growing the crops and getting your produce to market.

These operating costs and be divided into two groups:
Variable costs : The costs that vary depending on what you grow. Things like casual labour, chemicals, fertilizers, transport, cost of seed etc
Overhead or Fixed costs: The costs that are always there regardless of what you grow. These include costs such as rates and taxes, electricity, permanent labour, and depreciation of your fixed assets.

Non-operating cost is a cost not directly associated with producing the crop. An example of this is the interest paid on a farm loan or hire purchase agreement.

These can be explained using the following flow chart for a trade store:
Have this Flow Chart as a poster

Income and Expenditure
For the Profit and Loss Statement



Introduce Exercise 2 and work through and explain the first 4 items that have been classified. Be sure all trainers know what they have to do before continuing. A completed exercise has been included.

Exercise 2

Work through the following exercise and decide how you would classify each item. Follow the example given. Choose one of the following classifications:

Operating Income
Non-operating income
Operating Cost – variable
Operating Cost – fixed
Non-operating cost/expense

Item	Classification
Income from chickens	Operating Income
Sale of old slasher	Non-operating Income
Electricity	Operating cost - fixed
Casual labour	Operating cost - variable
Day old chickens	
Vanilla cutting you buy	
Repairs to buildings and machinery	
Rates and taxes	
Income from vanilla	
Depreciation	
Transport costs	
Membership of Cocoa Growers	
Loan Repayment	
Permanent labour	
Chemicals to use on crops	
Cocoa bags	
Income from cocoa	

Exercise 2 - with solution

Work through the following exercise and decide how you would classify each item. Follow the example given. Choose one of the following classifications:

Operating Income
Non-operating income
Operating Cost – variable
Operating Cost – fixed
Non-operating cost/expense

Item	Classification
Income from chickens	Operating Income
Sale of old slasher	Non-operating Income
Electricity	Operating cost - fixed
Casual labour	Operating cost - variable
Day old chickens	*Operating cost - variable*
Vanilla cutting you buy	*Operating cost - variable*
Repairs to buildings and machinery	*Operating cost - variable*
Rates and taxes	*Operating cost - fixed*
Income from vanilla	*Operating Income*
Depreciation	*Operating cost – fixed*
Transport costs	*Operating cost - variable*
Membership of Cocoa Growers	*Operating cost – fixed*
Loan Repayment	*Non-operating cost*
Permanent labour	*Operating cost – fixed*
Chemicals to use on crops	*Operating cost - variable*
Cocoa bags	*Operating cost - variable*
Income from cocoa	*Operating Income*

3. How to calculate Profit and Loss for a farm/business:

Again, this can be done in three steps.

1. First calculate your total income from the business. Here it may be necessary to separate household income from farm/business income, depending on the enterprise you are working with. A wage earned externally (working for a contractor in town) while partner worked the farm/business, could not be included in the income from the farm but could be included in the total household income.

2. From the total income you must subtract all the costs associated with making that income. As well as the obvious costs like chemicals, casual labour, hire of equipment, seeds etc, you must also consider the interest you are paying on loans associated with the farm/business and depreciation of the fixed assets. The total value of the fixed assets like the buildings/sheds and machinery can not be considered as a cost when calculating the Profit and Loss figure for one year because the fixed assets will last for many years. However they contribute to the income because without them you wouldn't be able to operate, so you make an allowance for them. This allowance is **depreciation**. You now know how to calculate this.

3. Once you have calculated all your expenses associated with making the income, you can take it away from the total income to find your profit or loss.

How to present a Profit and Loss Statement:
Have this as a poster to display or written up on a board and carefully work through the different headings.

Profit and Loss Statement for Happy Valley Family Farm for the year ending 30.06.03

Operating Income			Kxxxx
Less			
Operating Costs			
(1)Variable costs			
	xxx		
	xxx	xxxx	
(2)Overhead costs			
	xxx		
	xxx	xxxx	xxxx
Operating Profit			Kxxxx
* Add Non-operating Incomes	xxx	xxxx	
**Less Non-operating Expenses			
	xxx		
	xxx		xxx
Net Profit			Kxxxx

Exercise 3a

Using the following information from Happy Valley Family Farm, present a profit and loss statement for the year 30.06.02 – 30.06.03. Refer to Exercise 2 if you wish. You will find the headings for this exercise on the next page:

Total Income from sale of cocoa	K 18 358.00
Total Income from sale of vanilla	K 8 234.00
Total Income from sale of chickens	K 210.00
Day old chickens	50.00
Electricity	2 300.00
Vanilla cuttings	104.00
Transport	492.00
Depreciation	2 800.00
Sale of old slasher	200.00
Repairs to buildings and machinery	750.00
Rates and Taxes	1000.00
Membership of Cocoa Growers	150.00
Casual Labour costs	2 600.00
Loan Repayment	1 800.00
Permanent labour costs	6 000.00
Chemicals	1 230.00
Cocoa bags	120.00

Exercise 3a - Solution

Profit and Loss Statement Happy Valley Family Farm from 30.06.02 to 30.06.03

Operating Income			
Sale of Cocoa	18 358		
Sales of Vanilla	8 234		
Sales of Chickens	210		26 802.00
Less			
Operating Costs			
(a) Variable Costs			
Day old chickens	50		
Vanilla Cuttings	104		
Chemicals	1 230		
Transport	492		
Repairs	750		
Cocoa bags	120		
Casual labour	2 600	5 346	21 456.00
(b) Overhead Costs			
Permanent wages	6 000		
Depreciation	2 800		
Electricity	2 300		
Rates and Taxes	1 000		
Membership	150	12 250	9 206.00
Operating Profit			**9 206.00**
Add Non-operating Income			
Sales of slasher	200		9 406.00
Less Non-operating expenses			
Loan repayments	1 800		7 606.00
Net Profit			**7 606.00**

If the farm has more than one enterprise and you want to show the profit from each, the profit and loss statement can be presented to show this by having different columns for each Activity/Enterprise:

Have a poster to explain this. Highlight the similarities to Exercise 3

Profit and Loss Statement for Happy Valley Family Farm for the year ending 30.06.03

	Cocoa Growing	**Vanilla Growing**	**Total**
Operating Income ***Less*** Operating Costs (1)Variable costs (2) Overhead costs Operating Profit * Add Non-operating Incomes **Less Non-operating Expenses Net Profit			

Profit and Loss Statement for a Small Trade Store

This is very similar to the exercise we did for Happy Valley Family Farm. The only difference is that first we have to calculate the cost of the goods sold in the store.

To do this we must think about:

(a) the stock we had on hand at the beginning of the period…. then
(b) the stock we bought during the year…….and also
(c) the stock we have left that we did not sell.

Suppose the value of the stock on hand at the beginning of the period was K355 and during the period we purchased another K5300 of goods. At the end of the period we still had stock that had cost us K740

Therefore the cost of the stock sold is

(a) + (b) - (c) = Cost of stock sold

In this case it is: K355 + K5300 – K540 = K5115

If we subtract the cost of stock sold from the Operating Income, we have what we call the Gross Income. That is the income before any of the other costs associated with running a trade store are considered.

Warning!!
Many trade stores sell for cash and credit. There is big danger of not being paid if you give credit so….. be very careful when giving credit. Be sure the people you give credit to will pay you on time. If in doubt, say NO. Some Trade Stores have a policy of NO CREDIT.

Ask trainees to prepare a Profit and Loss Statement for a trade store (Exercise 3b) Explain that it is similar to the one for the farm (Exercise 3a). The only difference is that they should first calculate the cost of the stock sold.

Exercise 3b

Mrs Brown operates a small trade store in her village. She has asked you to help her present a profit and loss statement for last year as she is hoping to be able to increase her loan from the bank to make an extension. She has given you the following figures from her cashbook.

Stock on hand 30.06.02	K	426.00
Stock purchased during the year	K	7 500.00
Stock on hand 30.06.03	K	395.00
Total sales	K16	450.00
Casual labour		100.00
Transport costs		520.00
Fuel Costs		600.00
Repairs		400.00
Electricity		600.00
Depreciation		1 500.00
Permanent wages		--
Rates and Taxes		--
Sale of old refrigerator		100.00
Loan Repayment		400.00

Exercise 3b - solution

Profit and Loss Statement Mrs Brown's Grocery Shop from 30.06.02 to 30.06.03

Operating Income				
Sale of Goods			16 450	16 450.00
Less Cost of Stock				
Stock on hand(6.02)	426			
Add Stock purchases	7 500			
	7 926			
Less Stock on hand(6.03)	395	7 531		7 531.00
Gross Profit				**8 919.00**
Less Operating Costs				
(a) Variable costs				
Cost of Stock	7531			
Fuel	600			
Transport	520			
Repairs	400			
Casual labour	100	9151		7 299.00
(b) Overhead/Fixed costs				
Depreciation	1500			
Electricity	600	2100		5 199.00
Operating Profit				**5 199.00**
Add Non-operating Income				
Sales of refrigerator	100			5 299.00
Less Non-operating expenses				
Loan Repayments	400			4 899.00
Net Profit				**4 899.00**

4. Using the Profit and Loss Statement and the Balance Sheet to make decisions

Return of Capital and Return on Equity

Remember at the beginning of this Unit we said that one of the uses of the Profit and Loss Statement was that it helped compare one investment with another investment.
In order to do this we have to calculate a "return on capital"(a return on the total asset value of the business) or a "return on equity"(a return on the owner's equity in the business).

A "return" means the profit we receive and we have just learnt how to calculate that. Do you remember where we can find the total asset value of the business and the owner's equity? We calculated those in Unit 1 where we learnt how to prepare a Balance Sheet.

Now we are in a position where we can use information from both these financial documents to find out more information about the business. This information may be of use if you are comparing different businesses before investing. It is also useful for lending organisations if you are applying for a loan. You can also use this information to compare a business over different years.

We are now going to use the information we have from Units 1 and 2 to do Exercise 4

Exercise 4a and 4b

Go back to Exercise 2 in Unit 1and from the Balance Sheet for Happy Valley Family Farm, find the value of the Total Assets (Capital) and the Owner's Equity. Use these figures, along with your Net Profit from Exercise 3 in Unit 2 to calculate:

4a The Return on Capital for this investment and
4b The Return on Equity for this investment.

Remember this information allows you to compare this business with other businesses. This will allow you to make more decisions about how you can best invest your money.

Exercise 4a and 4b - with solutions

From Balance Sheet in Unit 1

Total Assets	=	56 030.00
Owner's Equity	=	38 000.00

From Profit and Loss Statement in Unit 2

Net Profit	=	7 606.00

4a. Return on Capital	=	7 606/56 030	=	13.6 %
4b. Return on Equity	=	7 606/38 000	=	20 %

Question: What return do you get if you put your money in a bank.

Here you could finish with a short discussion about risk. The greater the risk, the greater the return you expect.

How does this return relate to other investments? Invite and lead a general discussion.

Balance Sheet
"Happy Valley Family Farm" as at 30.06.03

Assets			
Current			
Cash in bank	1250		
Money owing - chickens	120		
Cocoa on hand	750		
Feed on hand	250		
Chemicals on hand	1400	3770	
Livestock			
Chickens 50@K10	500	500	
Plant and Machinery			
Vehicle	3000		
Tractor	950		
Slasher	560		
Generator	200		
Tools	250	4960	
Fixed assets			
Land with trees	22000		
House	20000		
Chicken Shed	1200		
Drying Shed	3600	46800	
Total Assets			56030
Less			
Liabilities			
Current			
Account for transport	120		
Account for chemicals	370		
Account replacement trees	740		
Bank Repayment and Interest	1800		3030
Long Term			
Bank Loan	15000		15000
Total Liabilities			**18030**
Owner's Equity (A-L)			**38000**

Unit 3:
Analysis of Balance Sheet

The Balance Sheet is a powerful management tool because by studying it, you can find out a lot of information about the business/farm. This information can also allow you to make decisions, solve problems and plan – all things that will benefit your business.

If the farm/business is not able to meet its debts (pay the bills), it runs the risk of being taken over by the bank or other lending institution or the owner may have to declare bankruptcy and may lose that farm or business.

Question:
How can you tell if a farm/small business is doing well or if it is heading for trouble?

Give trainees time to think about this and discuss within their groups. There is space in their workbook to jot down some of the indicators they come up with. Now lead a discussion to bring all these ideas together and make a list on the board.

Answer:
There can be many indicators that suggest how a business is going.
Write up a list of the suggestions from the trainees and then lead a discussion about this.
Here are some indicators they might mention. There may be others

- if the business cannot pay the bills,
- if the farm is not producing enough,
- if prices for farm goods are bad,
- if the farmer or business is borrowing too much,
- if the farmer or business has to sell assets to pay bills,
- if the farmer is not keeping up with maintenance.
- if the store/farm looks run-down
- if the business is expanding or not
- if the number of customers has increased or decreased
- if there is a delay in commencing contract work
- if there are empty shelves – no stock to sell

Suggest that another way which gives a very good indication about how well a business is going and that takes into consideration most of the things that have been mentioned above, is to look at the Balance Sheet.

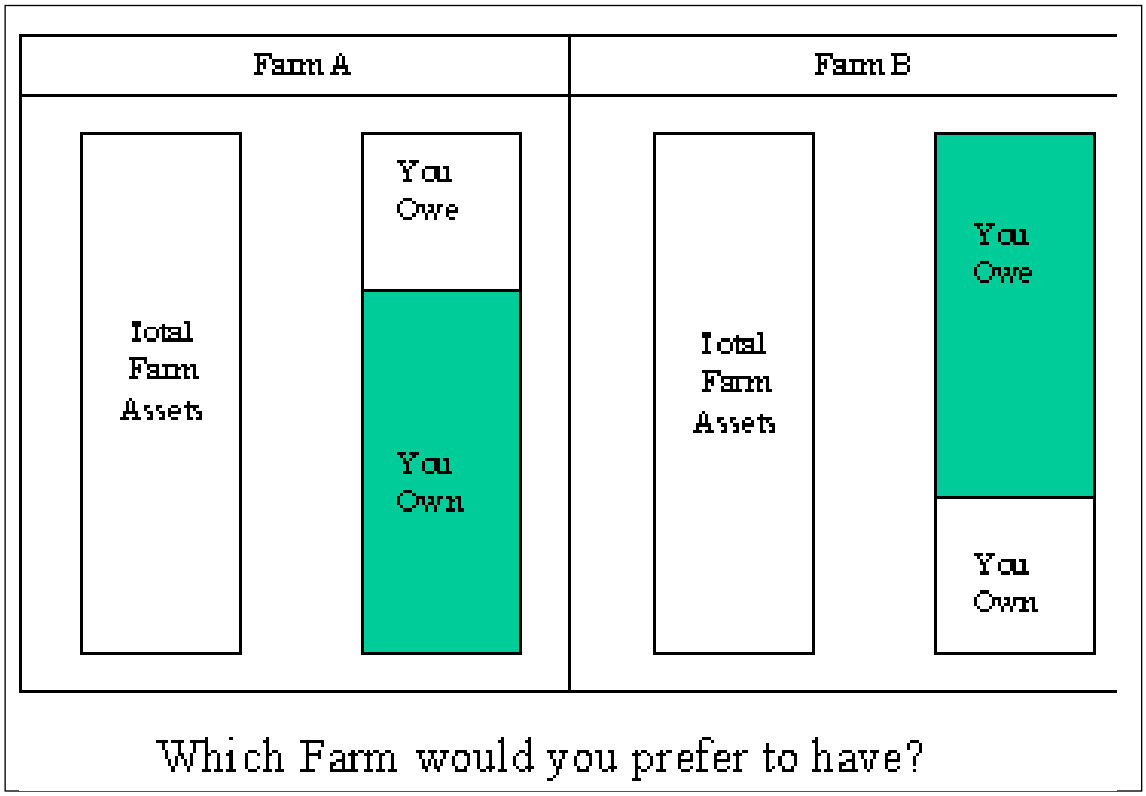
By looking carefully at the figures in the balance sheet and thinking about them, you can find out a lot of valuable information about your farm or business and how well it is going.

We are going to look at three indicators using the Balance Sheet from Unit 1(there is a copy of this Balance Sheet on the last page of this unit)

The first indicator we are going to look at is the Equity Ratio

1. Equity Ratio = Owners Equity
Total Assets

Consider the diagram below:
Both farms, A and B are similar (the assets in both have the same value) but Farmer A owns most of those assets while Farmer B still owes a lot of money to the bank. Farmer B only owns a small percentage of the farm.



Ask trainees to do Exercise 1 in their Workbook.

Exercise 1a. - with solution

(a) Look at the Balance Sheet from Unit 1 (it has been copied onto the following page) and calculate the Equity Ratio.
Use calculators if necessary.

Solution

So

Equity Ratio = $\frac{\text{Owners Equity}}{\text{Total Assets}}$

$= \frac{38000}{56030}$

$= 0.68$ or 68%

Demonstrate the answer by using a column filled in or a pie graph or similar demonstration.

(b) Think about the answer. What does the equity ratio tell you about the farm/ business?

Solution

This tells you the proportion of total assets that are actually owned by the farmer/business. It shows that the owner actually owns nearly 70% of the enterprise. It looks at how much is left for the farmer after all the debts have been paid, including any bank or hire purchase loans.

This figure will give an indication of the **long-term** viability of the farm/business.

Example: If you start a business and have to borrow money to buy almost everything, you will have a big debt. You will own very little, and any small problem is likely to put you in a position where you may have trouble meeting your deadlines and you will run the risk of "going bust".

On the other hand, if you own most of the land, equipment etc., then if you have a bad time, you can always borrow against the things you own or sell something till the situation improves. In this situation your farm/business is more stable and has greater viability. In most circumstances, Happy Valley Farm would be considered a viable farm and should be able to withstand any problems that might arise over the long term.

Research in some countries suggests that for a farm to be "safe", the equity ratio should be above 0.7. This means that the farmer actually owns 70% of the total assets (value) of the farm. This "safe" figure varies for different types of business.

The figure you calculated for this farm is very close to 70%

Show poster to help demonstrate

Exercise 1b - with solution

What should this figure be for the farm to be considered "safe"?

Solution

Greater than 70%

Exercise 1c - with solution

If you have calculated a Balance Sheet for your own farm or business, work out this Equity Ratio. What does it tell you about your farm/business? Should you make any changes?

Solution

Be prepared to discuss this with trainees if they wish

Now we will look for some more information from the Balance Sheet and the second ratio we will examine is:

2. Current Ratio = Current Assets
Current Liabilities

This ratio gives an indication of the ability of a farm/business to meet its short-term financial commitments. i.e. pay on time. In order for the farm/business to be able to pay its current debts, it must have either cash or assets that can readily be turned into cash. That means the farmer must be able to find the right amount of cash or more, to pay the bills when they fall due. Therefore the current ratio needs to be 1 or greater than 1. The clever farmer will not let this figure get too big. The funds should always be used in the most effective way. In some countries it is suggested that the Current Ratio should be between 1.8 and 2.0 in order for the business to be "safe"
If this figure was too high e.g.5 or 10, the farmer would have to think about what should be done with this extra money.

Discuss some of the possibilities like expanding, buying necessary equipment, repairing, reducing bank loans, taking a holiday. Always look for the reason that the figure is what it is first. Don't just spend the extra money. If you do, you may find yourself in trouble next year .

Exercise 2 - with solution

(a) Using the same balance sheet from Unit 1, calculate the Current Ratio.

Solution

N.B. Current assets are either cash or items that can readily be converted into cash. Examples include stock on hand such as fertilizers, fuel, seed and stock feed, cash, debtors and produce on hand ready to sell.

Current Ratio = Current Assets
Current Liabilities

= 4270
3030

= 1.4

(b) What does this figure tell you?

Solution

This figure gives an indication of the ability of a farm/business to meet its **short-term** financial commitments. i.e. pay on time. In order for the farm/business to be able to pay its current debts, it must have either cash or assets that can readily be turned into cash. That means the farmer must be able to find the right amount of cash or more to pay the bills when they fall due.

This figure is greater than 1, so the farmer is able to service the debts coming due in the next year but it is not as high as one would like it to be. The manager would need to keep an eye on this to ensure that it doesn't get worse. The next ratio we are going to look at gives a better indication of the short term stability of the enterprise so these two figures should be considered together.

The third and last ratio is:

3. Liquidity Ratio = <u>"liquid" assets</u>
"quick" liabilities

This is also an indication of how well a business can pay current accounts. It looks at the cash on hand and the cash that is owed to the business and due to be paid very shortly to pay outstanding accounts. It does not rely on having to sell any assets to pay outstanding accounts in the next couple of months as the current ratio does.

This ratio only considers the assets that can be quickly converted into cash without doing any harm to the business. Things like seeds on hand and crops in the ground may not be able to be converted into cash quickly enough to pay the bills immediately. Likewise it only considers those liabilities that have to be paid almost immediately. Bank repayments are usually not included. It is suggested that this figure should be greater than 1, but again not too high.

Exercise 3a - with solution

Using the same balance sheet from Unit 1, calculate the Liquidity Ratio.

Solution

Liquidity Ratio = "liquid" assets / "quick" liabilities

= 2120* / 1230**

= 1.72

*Cash 1250 +Money owing for cocoa and chickens (750 +120) = 2120
** Accounts payable 120+370+740 = 1230

Exercise 3b - with solution

What does this figure tell you?

Solution

Without selling anything, this farmer has more than enough to pay the immediate bills, so the farm is in a good position. It is not too much which would indicate there was money not being used to maximum benefit.

Values greater than 5 for either the Current Ratio or the Liquidity Ratio would be considered too high and the manager would have to consider how this extra money could be used to maximize profits from the farm rather than have it sit as cash. Some ways the farmer may consider spending this extra money may be:
To invest in some more machinery, land or something else that is needed
To buy more trees
To carry out repairs
Think about a holiday

Remember to always try to find the reason for the extra money and think carefully of all your commitments. Are you expecting some big expenses later in the year that you need to save for? Don't rush in and spend money without first thinking carefully about your commitments.

Exercise 4 - with solution

What is the difference between the Current Ratio and the Liquidity Ratio?

Solution

The Liquidity ratio only looks at money on hand in the form of cash and money owing that is about to be paid in cash. It can basically be guaranteed. The liabilities in this ratio are the ones that have to be paid in the immediate future.

The Current Ratio looks not only at the cash but also at a wider range of current assets that could be sold in order to meet commitments. This ratio also includes payment that fall due during the year like bank overdrafts and interests and repayments on long term loans. Crops or goods may be sold later that will overcome this shortage in the short term. It is suggested that the current ratio should be 1.8 – 2. A ratio of 1 suggest that all the liabilities could be paid, but that could involve having to sell current assets that normally would not be sold or not be sold now. Things like livestock and growing crops or fertilizer or chicken feed. With a ratio of 1.8 or 2, there is more flexibility to enable current assets to be sold at different times without harming the business operations.

The wise manager needs to look at all indicators and consider the whole business. These ratios are indicators and can warn of a problem and alert the manager to allow actions to be taken to improve the situation.

Comparisons:

By comparing the balance sheet for this year with the balance sheets from previous years, the manager will be able to see the changes that have occurred and plan for the future.

Balance Sheet
"Happy Valley Family Farm" as at 30.06.03

Assets			
Current			
Cash in bank	1250		
Money owing - chickens	120		
Cocoa on hand	750		
Feed on hand	250		
Chemicals on hand	1400	3770	
Livestock			
Chickens 50@K10	500	500	
Plant and Machinery			
Vehicle	3000		
Tractor	950		
Slasher	560		
Generator	200		
Tools	250	4960	
Fixed assets			
Land with trees	22000		
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Chicken Shed	1200		
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Bank Repayment and Interest	1800		3030
Long Term			
Bank Loan	15000		15000
Total Liabilities			**18030**
Owner's Equity (A-L)			**38000**

Unit 4:
Using Gross Margins in Decisions Making

What is a Gross Margin?

A gross margin for a crop is the difference between the gross income received from selling the crop and the variable costs of producing the crop. It is simply a guide to the earning potential of a particular crop in an average situation after the growing costs have been met.

Another name for Gross Margin is Gross Profit.

Remember:
Variable costs may include: casual labour, fertilizer, seeds/seedlings, pesticides, transport, marketing costs, administration, repair and maintenance etc

How can a Gross Margin be used?

It can be used as a basis for **comparing** and assessing the profit margins of **different crops** or **different farming methods** used on the individual farm, or to provide data for the compilation of a more detailed budget. Using Gross Margins can help the farmer make better decisions about the management of the farm.

Remember:
Gross margins do not measure farm profit, as they do not take into account fixed or overhead expenses such as rates, taxes, insurance, interest and depreciation on machinery and buildings.(You may like to have another look at Unit 2 to refresh your memory about Farm Profit).

When calculating Gross Margins, fixed costs are not included because they are expenses that are incurred regardless of what crop you grow or how much of it you grow. Fixed Costs are cost associated with having a farm. They are part of your farm and do not change when you plant a different crop. Remember they are things like rates and taxes, insurance, depreciation on buildings and equipment. The fixed costs will change very little if at all over the time it takes to grow a crop.

Gross margins only look at the income from the crop and the actual cost of producing that crop. This then allows the farmer to compare all the crops that might be grown.
This allows the farmer to see how much each crop can contribute. By thinking about Gross Margins the farmer can make decisions about which crops to plant.

Another reason why fixed costs are not used to calculate Gross Margins is that the fixed costs per land area varies considerably between farms whereas the variable costs will not change very much from farm to farm. Think of one farm that has very new and expensive buildings and lots of equipment and compare it to the farm that has almost nothing.

The fixed costs of the first farm will be much greater than the fixed costs of the second farm. But to grow a small patch of cabbages, both will have to outlay about the same amount of money on labour, chemicals, seeds and transport, so the variable costs for both these farms will be about the same. Can you now see that if we only use the variable costs we can compare more accurately.

There are many publications available giving financial and technical information about the gross margins for different crops and these give the farmer a guide to what may be expected. They may not tell you exactly what will happen on your farm as prices change from one place to another and some crops grow better in different areas.

You know from experience that some crops are more difficult to grow on your farm than others. For example, these gross margins you read about in farming magazines or books do not consider the particular characteristics of your farm, your market, your climate, your soil, your transport costs and your area.

Another consideration has to be the time it takes to grow different crops. Tomatoes for example, take twice as long as some greens. Therefore you could harvest two crops of green vegetables in the time you get one crop of tomatoes. All these things are considered by the wise farmer before making decisions.

By reading about Gross Margins, the farmer can get some idea of what to expect from the different crops but by keeping records from your own farm, and doing some calculations, you can make wise decisions about what crops are best for you and your farm.

How do we calculate Gross Margins.

Gross Income		K
Less		
Variable Costs		
•	K	
•	K	
•	K	
•	K	K
Gross Margin		**K**

If you want to **compare** two crops, then you must divide each Gross (Margin) by the area of the crop you are growing.

Note for Trainer:
Gross margins are usually expressed as K/area as land area is usually the limiting resource. Gross Margins can also be expressed in terms of K/Capital Invested or K/unit of labour if these are the limiting resources.

Trainees should work in groups for these exercises. Encourage discussion. Encourage trainees to raise any issues with you.

Exercise 1

Suppose you are a farmer growing cabbages and corn. What variable costs would you expect when growing these two crops? Discuss this question with other members of your group and write up two lists:

Variable Costs

Variable costs for Cabbage	Variable costs for Corn

Remember: It is important that whatever costs you use to calculate the Gross Margin for one crop, you must be CONSISTANT and use similar costs over all your crops.

Exercise 1 - with suggested solutions

Suppose you are a farmer growing cabbages and corn. What variable costs would you expect when growing these two crops? Discuss this question with other members of your group and write up two lists:

Variable Costs

Variable costs for Cabbage	Variable costs for Corn
Fertilizer	*Fertilizer*
Seeds or seedlings	*Seeds or seedlings*
Pesticides	*Pesticides*
Freight costs	*Freight costs*
Marketing costs	*Marketing costs*
Casual Labour.	*Casual Labour.*
Transport	*Transport*

This is not necessarily a complete list. Discuss any others with the trainees to decide if they are fixed or variable costs.

It is important that whatever costs you use, you must be CONSISTANT over all your crops.

Exercise 2

The cabbages are growing in an area 10 metres by 5 metres and from this garden you harvested and sold 300 cabbages for 80 toea each.
Your costs associated with growing this crop of cabbages were as follows:

Seeds	K18.00
Transport	24.00
Casual labour	15.00
Fertilizer	26.00

The corn is growing in a garden measuring 10m x 10m and from this garden you harvest

100 cobs @ 50 toea ea.
200 cobs @ 60 toea ea
100 cobs @ 65 toea ea

The costs associated with growing this crop are:

Seeds	1kg @ K2.00/kg
Fertilizer	13kg @ K0.45/kg
Harvest and Sorting	K3.00
Market and Transport	K7.00
Labour	K8.00

Ask Trainees to complete 1, 2, and 3 below before continuing with Exercise 3 Check the answers before they continue. Ask them how do they now set about calculating the Gross Margins for the two crops. Do Exercise 3

Calculate:

1. The Total Income from Cabbages	The Total Income from Corn

2.The Total Variable Costs for Cabbages	The Total Variable Costs for Corn

The area of Cabbages	The area of Corn

Exercise 3

Now calculate the Gross Margins for both these crops. Use the figures calculated in the previous exercises.

Cabbage	**Corn**
Gross (total) Income=	Gross (total) income =
Less Variable Costs	Less Variable Costs
Gross Margin Gross Margin/Area =	Gross Margin Gross Margin/area =

Exercise 2 - with suggested solutions

The cabbages are growing in an area 10 metres by 5 metres and from this garden you harvested and sold 300 cabbages for 80toea each.
Your costs associated with growing this crop of cabbages were as follows:

Seeds	K18.00
Transport	24.00
Casual labour	15.00
Fertilizer	26.00

The corn is growing in a garden measuring 10m x 10m and from this garden you harvest

100 cobs @ 50 toea ea.
200 cobs @ 60 toea ea
100 cobs @ 65 toea ea

The costs associated with growing this crop are:

Seeds	1kg @ K2.00/kg
Fertilizer	13kg @ K0.45/kg
Harvest and Sorting	K3.00
Market and Transport	K7.00
Labour	K8.00

Suggested Solutions

1.The Total **Income** from Cabbages	The Total **Income** from Corn
300x0.80=K240.00	*100x0.50 =K 50.00* *200x0.60 = 120.00* *100x0.65 = 65.00* *K235.00*

2.The Total **Variable Costs** for Cabbages		The Total **Variable Costs** for Corn	
Seeds	*K18.00*	*Seeds1kg @ K2.00/kg*	*K2.00*
Transport	*24.00*	*Fertilizer..13kg @ K0.45/kg*	*5.85*
Casual labour	*15.00*	*Harvest and Sorting*	*3.00*
Fertilizer	*26.00*	*Market and Transport*	*7.00*
Total	*K 83.00*	*Labour*	*8.00*
		Total	*K25.85*

3.The **area** of Cabbages	The **area** of Corn
50m²	*100m²*

Exercise 3 - with suggested solutions

Now calculate the Gross Margins for both these crops. Use the figures calculated in the previous exercises.

Cabbage		**Corn**	
Gross (total) income=*300x0.80=K240.00*		Gross (total) income = *100x0.50 =K 50.00* *200x0.60 = 120.00* *100x0.65 = 65.00* *K235.00*	
Less Variable Costs	*83.00*	*Less Variable Costs*	*25.85*
Gross Margin	*K157.00*	*Gross Margin…….*	*209.15*
GrossMargin/Area= 157/50	***3.14***	*Gross Margin/area = 174.15/100 =*	***2.09***

Explain this carefully:
These figures tell you that if you have two gardens of the same size (1m²) then you will get more money from the garden growing cabbages (K3.14) than from the garden growing corn (K2.09).

Of course there are other things that you must consider, but this gives you a start when you are deciding what crops you should grow on your farm.

Exercise 4 - with suggested solution

From your Gross Margin calculation, which crop appears to give you the greatest Gross Margin

Solution

Cabage

Exercise 5 - with suggested solution

Before deciding to grow this crop, are there any other considerations you should take into account?

Solution

Yes, suitability of the crop to your farm (soil, climate). Likelihood of failure; growing time; market price; demand; expected supply; labour requirements; seed availability and price

Exercise 6 - with suggested solution

Suppose it takes 8 weeks to grow cabbages and 12 weeks to grow corn. Would the Gross Margins you calculated above be a good comparison?

Solution

No, because you are not comparing like with like. In the case of corn, the limited resource, land, is being used for a longer period and in that time a second crop of cabbages could be growing.

Exercise 7 - with suggested solution

How might you overcome this problem?

Solution

You must always compare like with like.
Therefore, just as you divided by the area when it was different, now you will need to divide by the number of weeks or months that it takes for the crop to grow.

Question 7 - Further Explanation for trainer

You may have to think of calculating your gross margin figure using a unit such as K/m^2/week, month or year
Cabbage:
K3.14/m^2 would become 3.14/2 = K1.57/ m^2/month
Corn:
K1.34/m^2 would become 2.09/3 = K0.69/ m^2/month