

MODULE 4: ICT in Support of Farming

LESSON 2: Record Keeping

TIME: 1 hour 36 minutes

AUTHOR: Andrew Moore

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LESSON **2** **RECORD KEEPING**



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OUTCOMES:

By the completion of this lesson participants will:

- Appreciate why keeping farm records is essential.
- Be familiar with how the *Enterprise Record Keeping System* is organised and why it is beneficial for farmers.
- Be able to set up a simple spread sheet program (MS Excel) to start collecting farm data.

INTRODUCTION:

We all keep records of some type. If for no other reason, farmers want to track the amounts of a crop harvested or sold. In this lesson we want to encourage you to keep more comprehensive records so that you can use them to gain insight into the well-being, possible future growth and direction your farming 'enterprise' could take.

Records can be used as *decision-aids*. Records can supply you with data needed to make informed decisions about future machinery purchases, profitability of certain crops and changes in market trends. Also, as you begin to grow from a farm to a firm you will need records to support your application for bank loans, tax references and other institutional requirements.

In this lesson we will also begin to show you how to keep a simple set of records using a spread sheet program that takes a lot of the complicated 'Maths' out of compiling statistical data.

Production and Financial Record Keeping

There are at least two types of records that farmers should keep, production and financial, each has its own distinct purpose.

Production records track the yield of a particular crop or produce, or perhaps the number of calves born (with weaning weights) versus the number of deaths in a herd.

Financial records, as the name suggests, track money. Usually, a farmer would record *Income* (such as product sales) against *expenditure* (operating costs, equipment and feed purchases etc.). The more sophisticated your farm, the more likely it will be necessary to also track financial items such as inventory, depreciation records, loan balances etc.

So what is the best way to record and track all this data? There is no one way to do this and your context will determine which method is most suitable. Whatever method you choose, it must be *accurate* and be in a format that allows you to *analyse* the data in order to make decisions. Below is a comparison of two common systems used:

Hand (with calculator & journal)	Computer (spread sheet/accounting program)
Low initial cost to implement	High initial cost to implement
Easy to learn	Requires time and effort to learn
Is labour intensive (time consuming)	Fast
Many opportunities to make mistakes	Accurate
Limited ability to use data for analysis	Powerful analysis tool

Of course as this lesson is part of the ICT module we are going to advise that you use a digital system so that you can exploit the processing power of a computer to help you record and analyse your data! Ultimately, however, you need to choose what is best for you.

Activity 1



Record systems (10 minutes)

Do you remember the Windsor Farm Case study previewed earlier? (Review the last 45 seconds of the case study on the record system favoured by Windsor). Note that in the case study the narrator is critical of the record system used at Windsor farms.



Access the video case study from the course CD ROM:
See *Resource Index | Module 4 | Lesson 2 | Case Study*

Questions:

(In your journal record the answers to these questions)

1. What system did the management of Windsor farms use to record production records? Describe their record keeping system.
2. What, according to the narrator, was inadequate about their system? See if you can identify a specific problem.
3. How, in your opinion, might the farm management overcome this problem?
4. What system do you currently employ and have you identified any inadequacies in your system. How might it be improved?



See the Feedback section at the end of this lesson to see a model answer or comments about this activity

ENTERPRISE RECORD KEEPING

Once you have chosen a record system you will first need to record the data accurately before any analysis can take place. So how should you capture the data? There are numerous ways and there are a number of accounting programs written for computer systems you might want to investigate but for this lesson we will explore a simple solution for a farmer who has a number of operations running simultaneously on his farm:

Enterprise Record Keeping. Study Table 1 below:

Date / Description	Income			Expense			Enterprise			
	Calves	Cull Cows	Maize	Feed	Supplies	Fuel	Cattle		Maize	
							Income	Expense	Income	Expense
12/06/2011 Sold 10 calves @ 50kg/nd	322,000						322,000			
+13/06/2011 Purchased additional feed (1 ton)				38,237				38,237		
22/06/2011 Sold 2 Cows at 1050 lbs./hd		100,624					100,624			
25/06/2011 Hardware supplies (Fencing materials)					13,282			10,282		3,000
26/06/2011 Diesel (x litres)						112,100		60,000		52,000
28/06/2011 Sold 2000 bu of maize			370,299						370,299	
Total	322,000	100,624	370,299	38,237	13,282	112,100	422,624	108,519	370,299	55,000
								314,105		315,299

The enterprise columns allow you to split income and expenditure across different farming activities. In the example above these activities include rearing cattle and growing maize. The advantage of this approach is that besides tracking cash flow, you can also see how profitable various activities are in relation to each other.

Activity 2



Group work (20 minutes)



Gather into groups of four and discuss how each member tracks income and expenditure. How is the Enterprise example above different or similar? See if any of your group has ways to improve on the simple Enterprise Record Keeping System described above. Record the group's ideas.



See the Feedback section at the end of this lesson to see a model answer or comments about this activity

Using ICT to Help you Track Expenditure

Ok, before we go any further let's look at one way that a computer loaded with a spread sheet program can help you store your records and use the data to analyse the financial well-being of your 'farm firm'. For this lesson, we will be using a popular spread sheet program called MS Excel. We will also be using a number of small videos to guide you in setting up the program to support your record keeping. The course facilitator will guide you through these steps

Activity 3a

Access the spread sheet program (4 minutes) 

If you are reading these notes from the Course CD ROM then the computer is already on! Your first task then is to locate the spread sheet program called Excel. To do this follow the instructions described in this video clip. If you get stuck call the facilitator over to help you.

 Access the video case study from the course CD ROM:
*See Resource Index | Module 4 | Lesson 2 | Excel:
Getting started*

Activity 3b

Access the spread sheet program (4 minutes) 

Right, the programme is open in front of you! But how does it work? Watch this orientation video that describes how the spread sheet grid is organised. Pay attention to the explanation about columns, rows and grid references. Also note the differences between labels and values.

 Access the video case study from the course CD ROM:
*See Resource Index | Module 4 | Lesson 2 | Excel:
Orientation*

Activity 3c



Layout typical “enterprise Worksheet (30 minutes)

As before, follow the explanation in the video. This time, however, we want you to follow the video instructions and create the Enterprise record keeping grid using the Excel program installed on the computer you are using. You can play, stop and rewind the video as you need as it will take a while to create the grid. Also, if you get frustrated remember to call the facilitator over to help you.



Access the video case study from the course CD ROM:
See *Resource Index | Module 4 | Lesson 2 | Excel: Enterprise Worksheet*

Activity 3d

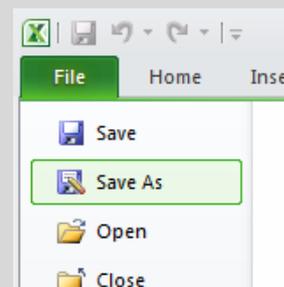


Save your Grid (5 minutes)

So far, we have done a lot of preparatory work and have yet to see the power of the computer at work. That comes in the next lesson where we will create totals and work out averages. We will, however, need the grid again so it is now time to save your work. Follow these steps.

1. Select the green ‘File’ tab from the top left hand side of the Excel program.
2. Select ‘Save As’. (See Fig 1)
3. In the window that opens look for the ‘File name’ field towards the bottom of the window and replace the text ‘Book1’ with this text, *AndrewEnterpriseGrid* (use your name not mine).
4. Click on the ‘Save’ button located in the bottom right hand side of the window.

Great! It’s done. You have saved your spread sheet.



Conclusion



Let us take stock of progress. We have discussed the importance of having a record keeping system and compared the different versions which each of us use. We looked at one system, the Enterprise Record keeping system, which can exist in either a hand or computer based format. To investigate computer based systems we have started to build an 'Enterprise' spread sheet grid and in the next lesson we will populate our spread sheet with records and analyse the data.

Summary

The main points of this lesson you need to be familiar with before you continue include:

- It is necessary to have a record keeping system so that a farmer can track both production and financial activities.
- Any record system needs to be *accurate* if it is to support a farmer in tracking and analysing his data.
- The Enterprise Record Keeping system can be kept in either a hand or computer based formats. A computer format is useful because it allows a farmer to organise expenditure and income against various agricultural activities.
- In terms of computer systems there are many commercial accounting packages but a popular, simple tool used to keep records is a spread sheet program. An example of a spread sheet program is MS Excel.

Enrichment Resources



Information about software accounting packages

- Intuit QuickBooks: www.quickbooks.com
- Pastel Accounting: www.pastel.com
- TurboCASH (Free): www.turbocash.net

Information about spread sheet programs

- Wikipedia's Comparison of Spread sheet programs: http://en.wikipedia.org/wiki/Comparison_of_spreadsheet_software
- Open Office's Calc (Free): <http://www.openoffice.org/product/calc.html>

Glossary



Specialist words with definitions:

Enterprise Accounting: Enterprise accounting requires that income and expense information be assigned to the farm enterprise that generated that income or expense. "Enterprise," refers to the different kinds of farm production.

Expenses: In common usage, an expense or expenditure is an outflow of money to another person or group to pay for an item or service, or for a category of costs. For a tenant, rent is an expense. For students or parents, tuition is an expense. Buying food, clothing, furniture or an automobile is often referred to as an expense. An expense is a cost that is "paid" or "remitted", usually in exchange for something of value. (Wikipedia: <http://en.wikipedia.org/wiki/Expenses>). Expenses include direct production expenses, fixed or overhead expenses, capital expenditures and personal and family living expenses. Basically, expenses refer to any and all money spent. (Gerloff)

Income: The consumption and savings opportunity gained by an entity within a specified time frame, which is generally expressed in monetary terms. However, for households and individuals, "income is the sum of all the wages, salaries, profits, interests payments, rents and other forms of earnings received... in a given period of time." For firms, income generally refers to net-profit: what remains of revenue after expenses have been subtracted (Wikipedia: <http://en.wikipedia.org/wiki/Income>) Income is money received for selling product or service(s). It includes sales of purchased, breeding or raised livestock. It also includes sales of crops, government program proceeds and proceeds from cost-share projects. Custom work by the farm owner and family members would also be included as income. In short, all income that is generated by the farm or farm family is included as income. (Gerloff)

Spread Sheet: A spread sheet is a computer application that simulates a paper, accounting worksheet. It displays multiple cells that together make up a grid consisting of rows and columns, each cell containing alphanumeric text, numeric values or formulas. A formula defines how the content of that cell is to be calculated from the contents of any other cell (or combination of cells) each time any cell is updated. Spread sheets are frequently used for financial information because of their ability to re-calculate the entire sheet automatically after a change to a single cell is made. (Wikipedia: <http://en.wikipedia.org/wiki/Spreadsheet>)

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Feedback

Feedback Activity 1

1. They used a system whereby entries were kept in a hand written journal.
2. The narrator mentioned that it was difficult to create copies of the records which were needed by various 3rd party stakeholders.
3. Keeping records digitally (on a computer) would allow for multiple copies to be generated at any time, for example at the end of each month, if a printer was installed with the computer.

Feedback Activity 2

There is no correct answer here. Everyone will have a different system yet what is important is to see what the strengths of each system are and to determine if you could incorporate these strengths into your system.