**17**

MODULE4: **ICT in Support of Farming**

LESSON 2: **Record Keeping**

TIME: **1 hour 36 minutes**

AUTHOR: **Andrew Moore**



This lesson was made possible with the assistance of the following organisations:

[Creative Commons License](http://creativecommons.org/licenses/by/3.0/)  
  
Farmer's Agribusiness Training by [United States International University](http://www.usiu.ac.ke/) is licensed under a  
 [Creative Commons Attribution 3.0 Unported License](http://creativecommons.org/licenses/by/3.0/).  
Based on a work at [www.oerafrica.org](http://www.oerafrica.org/agshare/AgShareHome/tabid/1290/ctl/Tab/Default.aspx)

**MODULE 4**

**ICT in Support of Farming**

**2**



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 cansupply 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.

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.

**LESSON**

**Andrew Moore**

## AUTHOR:

## TIME:

## 1 hour 36 minutes

**RECORD KEEPING**

## OUTCOMES:

## :

## INTRODUCTION:

## :

## 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:

.

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.

## 

|  |  |
| --- | --- |
| **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 |



Record systems (10 minutes)

## Activity 1

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

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

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?

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.

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:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Income** | | | **Expense** | | | **Enterprise** | | | |
| Date / Description | 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.



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

## Activity 2

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.

Group work (20 minutes)



# Using ICT to Help you Track Expenditure

## Activity 3b

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 spread sheet program (4 minutes)

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

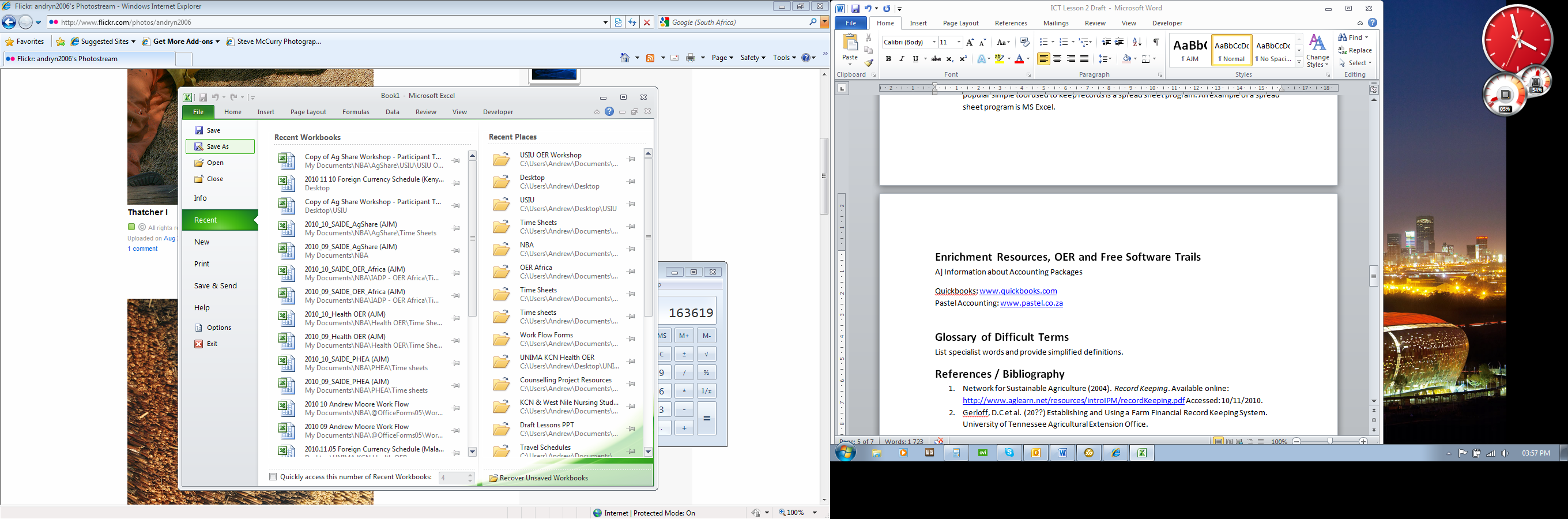
If you are reading these notes from the Course CD ROM then the computer is already on! Your first task then is to locate the spread sheet program called Excel. To do this follow the instructions described in this video clip. If you get stuck call the facilitator over to help you.

Access the spread sheet program (4 minutes)

## Activity 3a

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

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



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.

Save your Grid (5 minutes)

## Activity 3d

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

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.

Layout typical “enterprise Worksheet (30 minutes)

## Activity 3c



# 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.

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.

# Conclusion

****

Information about software accounting packages

* Intuit QuickBooks: [www.quickbooks.com](http://www.quickbooks.com)
* Pastel Accounting: [www.pastel.com](http://www.pastel.com)
* TurboCASH (Free): [www.turbocash.net](http://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>

# Enrichment Resources



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> )

# Glossary

1. Network for Sustainable Agriculture. (2004). Record Keeping. Available online: <http://www.aglearn.net/resources/introIPM/recordKeeping.pdf> Accessed: 09/02/2011.
2. Gerloff, D.C et al. (2006). Establishing and Using a Farm Financial Record Keeping System. University of Tennessee Agricultural Extension Office. Available online: [www.nou.edu.ng/noun/NOUN\_OCL/pdf/pdf2/AEM%20306.pdf](http://www.nou.edu.ng/noun/NOUN_OCL/pdf/pdf2/AEM%20306.pdf) Accessed 09/02/2011.
3. Wikipedia. (2011). Expense. Available online: <http://en.wikipedia.org/wiki/Expenses> Accessed 09/02/11 (CC: BY SA)
4. Wikipedia. (2011). Income. Available online: <http://en.wikipedia.org/wiki/Income> Accessed 09/02/11 (CC: BY SA)
5. Wikipedia. (2011).Spreadsheet. Available online: <http://en.wikipedia.org/wiki/Spreadsheet> Accessed 09/02/11 (CC: BY SA)

# References

****

## 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.

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 1

# Feedback