



Integrated Farm Financial Statements (IFFS) Software

Damona G. Doye
 Regents Professor and Extension Economist

Randy True
 Former Extension Assistant

Oklahoma Cooperative Extension Fact Sheets are also available on our website at: <http://osufacts.okstate.edu>

Every management decision for the field, herd, or flock has financial implications. Understanding all the angles can be a complex task. If you want to analyze your farm or ranch financial performance but don't want to spend days with a calculator, Integrated Farm Financial Statements (IFFS) is for you. IFFS generates financial statements—projected or actual—useful in decision-making and evaluating performance. Projected statements provide insights into anticipated credit needs, cash flows, income levels, and changes in financial ratios, all of which are important information for both potential new producers and continuing operations. Historical financial statements provide important benchmarks, document financial progress, and help identify business strengths and weaknesses.

IFFS users include computer-savvy producers, farm management consultants, and educators. With the software, users can evaluate alternative management plans and study potential outcomes of decisions before investments are made. They gain a better understanding of the impact of changes in farm plans on business financial performance and position. Within Oklahoma, the software has been used for more than 20 years in the Intensive Financial Management and Planning Support (IFMAPS) extension program where specialists work one-on-one with producers to help them build business plans. Because of its flexibility, IFFS software has been used in 36 other states and adapted for use in nine foreign countries.

This fact sheet provides an overview of the software components, reports generated, steps in building a whole farm plan along with computer requirements and purchase information.

IFFS Overview

IFFS is a set of three interdependent Excel-based workbooks and budget files: Crop and Livestock Budgets (CLBUD), Additional Information (AI), and Multiple-year Integrated Statements (MULTSTAT). The software facilitates data entry through point and click options, drop-down lists, and on-screen "help" (while also maintaining the keyboard commands of original versions of the software). Customized enterprise budgets, a monthly cash flow statement, debt worksheet, balance sheet, income statement, and financial measures can be generated.

Figure 1 highlights the relationships between the IFFS workbooks and the flow of information between the workbook files. The three blocks represent the three independent files that comprise IFFS: CLBUD, AI and MULTSTAT. The circles indicate where you enter data. Thus, the financial statements

are created through a combination of direct keyboard entry and automatic movement of data between statements. The arrows indicate the flow of information within each worksheet and between worksheets. The ovals indicate processing and summarizing of data. MULTSTAT integrates the Balance Sheet, Monthly Cash Flow Statement, Income Statement, Financial Measures Section, and Debt Worksheet. The statements are integrated through programming built into IFFS and formulas which use data across worksheets.

As an example of how information is both manually entered and calculated, information concerning each outstanding loan is entered by the user in the Debt Worksheet. The worksheet uses the formulas to calculate principal and interest payments for the appropriate category (current and noncurrent) and month of the Cash Flow Statement, plus determines principal

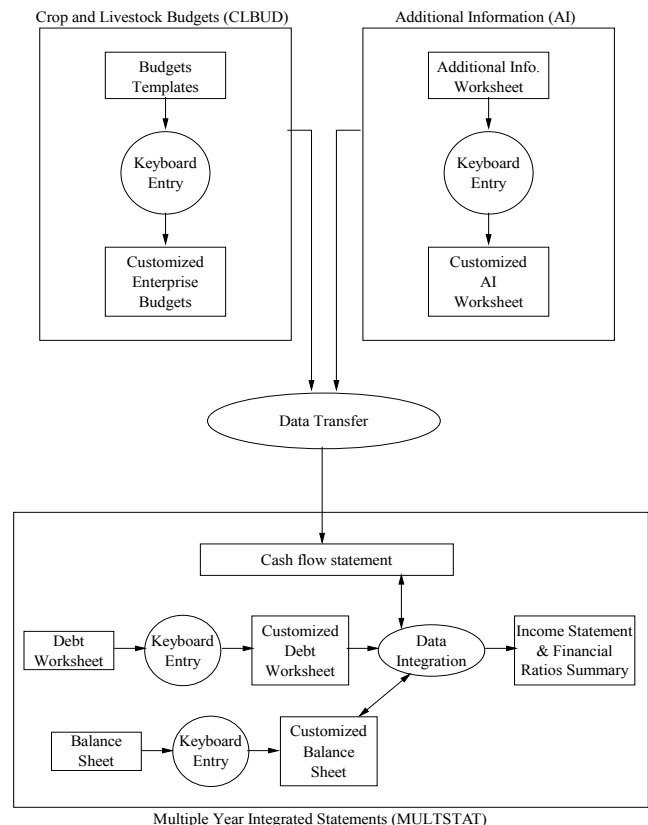


Figure 1. Relationship among the components of IFFS

balances and accrued interest for the appropriate sections of the Balance Sheet. These values are then used in calculating the income statement and financial ratios.

IFFS Components

CLBUD (crop and livestock budget) facilitates development of enterprise budgets. The budgets show expected per acre or per head monthly receipts based on average yields and prices, and specific monthly expenses required to produce crops or livestock. IFFS includes enterprise budget templates (crops, forages, vegetables, fruits, nuts, and livestock) developed using representative Oklahoma data. The templates are easily customized to match an individual producer's situation. OSU Enterprise Budget software will create files for use in IFFS (agecon.okstate.edu/budgets).

AI supplements the CLBUD files to list farm receipts and expenses that are not directly attributable to a particular crop or livestock enterprise. Examples are insurance, utilities, and real estate taxes. Capital sales and purchases are entered in either AI or MULTSTAT. If a consolidated set of statements for farm and family are sought, outflows such as family living and income taxes are entered in an AI file.

MULTSTAT (Multiple Year Integrated Statements) combines customized budgets (up to 40) with detailed asset and liability information to generate financial statements and ratios. Budgets developed using CLBUD and AI data are combined in the Monthly Cash Flow Statement in MULTSTAT. Asset purchase/sales information may also be entered in MULTSTAT, allowing the user to quickly and easily evaluate asset purchase/sales options. The initial year plan can be rolled forward one or more years with the same or altered budgets, additional information, and capital sales and purchases.

Loan information for a farm or ranch operation is entered in the Debt Worksheet. For a line of credit, the user enters the description, total principal, interest rate and interest accrued. For each short-term operating, non-real estate, real estate and non-farm loan, the user enters a description, payment month, interest rate, payment amount, payments per year, interest accrued, and total principal balance. Once the data are entered for each loan, the worksheet divides the payment into principal and interest components due during the current year and during the following year. Interest accrued at the end of the period and current and non-current portions of the principal balance are calculated for the Balance Sheet.

The potential impact of changing debt situations can be evaluated easily by changing the Debt Worksheet and recalculating the MULTSTAT workbook. Of course, if the changes in debt are associated with the purchase or sale of a capital asset, such as land or machinery, a change must also be reflected in the Balance Sheet and Cash Flow Statement.

The Balance Sheet summarizes beginning and ending values for current and non-current assets. Individual asset values or balance sheet line subtotals are entered using the keyboard. Beginning and ending values for current and non-current liabilities arising from loans or capital leases are derived from the Debt Worksheet. Any other liabilities are entered directly. Total owner equity is calculated within MULTSTAT and presented for the beginning and end of the reporting period. Subtotals, totals, and net changes for assets, liabilities, and owner equity are calculated automatically.

IFFS is designed to allow the user to easily evaluate changes in whole farm plans. To use this feature fully, the Cash Flow Statement should be constructed by creating or modifying

a set of budgets using the crop and livestock templates provided, then bringing the budget data into the Cash Flow Statement. This method has significant advantages in analyzing changes in the farm or ranch organization compared to developing a monthly Cash Flow Statement by direct entry. For example, if the user wishes to evaluate the impact on farm cash flow and profitability of selling a small cow herd and using the summer grass for an expanded stocker operation, you can subtract the cow/calf budget from the Cash Flow Statement. Then, a summer stocker budget could be created using CLBUD. The stocker budget would then be added into the Cash Flow Statement. These types of analyses are difficult to perform if the Cash Flow Statement is created by direct keyboard entry. They can be performed in just a matter of minutes if the Cash Flow Statement is built from budgets. Thus, for maximum flexibility and analytical capability, Cash Flow Statements are built from enterprise budgets.

IFFS Output

IFFS generates financial statements (Cash Flow, Balance Sheet, income statement) along with supporting documents (debt worksheet, asset inventories), plus a financial ratios summary page and farm stress test with key financial ratios interpreted visually on graphs. Sample financial statements may be viewed or printed from the IFFS website: agecon.okstate.edu/IFFS

Debt Worksheet

The Debt Worksheet is divided into five sections summarizing loans with different characteristics: line of credit operating notes, short term operating notes, non-real estate loans, real estate loans and non-farm loans. For each loan, a description, payment frequency (annual, semi-annual, quarterly or monthly), scheduled payment month, interest rate, payment amount, interest accrued (beginning and ending), principal balance, interest due this year, current and non-current principal is listed. For new loans, the loan origination month is also listed.

Cash Flow Statement

The Monthly Cash Flow Statement is organized by item of receipt and expense rather than by enterprise. That is, rather than having a single line for wheat expenses by month, expenses for seed, fertilizer, fuel, oil and lubricants, etc. are shown on different lines by month. In addition to cash operating receipts and expenses, the Cash Flow Statement reflects capital sales and purchases, inflows from wages and salaries, outflows for family living expenses, scheduled debt payments, and new borrowing. The bottom portion of the Cash Flow Statement, the Cash Flow Summary, calculates the cash position of the farm business month by month and for the year. Based on the receipts and expenses reflected at the top of the statement, IFFS subtracts outflows from inflows to determine the cash position of the business each month. If funds are available, payment of credit line principal and interest are calculated automatically. If additional funds are needed, new borrowing and accrued interest are calculated.

Balance Sheet

The Balance Sheet indicates the financial position of the farm business or family at a particular point in time, showing the value of what is owned versus what is owed. The difference is owner equity. This statement can be used for the farm business alone or for a combined family and business statement.

Non-farm (personal and/or business) assets and liabilities are separated from the assets and liabilities of the farm business. Entries in non-farm sections do not affect the derivation of net farm income from the farm business.

The Balance Sheet presents assets on the left with liabilities and owner equity on the right (see http://www.agecon.okstate.edu/iffs/files/balance_sheet.pdf). Assets are divided into current and non-current assets. Current assets include cash and other assets that are considered to be liquid or assets that can be converted to cash within one year with no or a very small discount from their original value. Non-current assets include non-real estate property subject to depreciation over several production cycles plus real property. Balance Sheet assets are listed from the most liquid at the top to the least liquid at the bottom. The Balance Sheet contains columns for beginning and ending values for assets and liabilities. A third column shows the change in value from the beginning of the period to the end and these differences are calculated automatically.

Liabilities are similarly divided into current and non-current categories. Current liabilities are those which are due within the year, including interest accrued to date and any amount of principal to be repaid on term loans during the period. The non-current balances for non-real estate and real estate notes appear in the non-current liabilities section.

Equity in any entity is accumulated through capital contributions, retained earnings, and changes in asset values. The Balance Sheet presents total owner equity, which in IFFS is a residual value calculated by subtracting the claims of others (liabilities) from total assets. Contributed capital and valuation equity must be calculated and entered by the user if the breakdown of owner equity is desired. Retained earnings will be computed automatically if valuation equity has been entered; otherwise, retained earnings will be displayed as N/A (not available).

Income Statement

The Income Statement is generated automatically. Operating receipts and cash farm expenses are transferred to the Income Statement from the Cash Flow Statement. Adjustments for change in inventories and other non-cash adjustments are calculated using information from the Balance Sheet. Net Farm Income is the return to unpaid operator labor, management, and equity. The Income Statement indicates the profitability of the farming operation for the year. The upper portion of this statement reflects the net cash income from operating the farm for the year. Operating Receipts are categorized on the left and Cash Farm Expenses are presented on the right. Net Cash Income from Operations is Gross Receipts from Farming less Total Cash Farm Expenses.

The lower half of the Income Statement adjusts for changes in accrued items and inventory. These adjustments are necessary to derive *Net Farm Income* which is the summation of *Net Cash Income from Operations* and the adjustments to assets and liabilities. *Net Farm Income* represents the net profit or loss from operating the farm for the year and is one measure

of the return to owner's equity, unpaid operator labor, and management.

Financial Measures Section

No one measure can indicate farm financial performance or position. Instead, several measures must be calculated to give a more complete picture. Liquidity, solvency, profitability, and repayment capacity are areas for which financial measures are useful. The Financial Measures Section is entirely computer-generated based on information contained in and transferred from financial statements. Financial ratios summarize information and offer benchmarks that can be used in analyzing change over time. The current ratio indicates business liquidity. Solvency measures include the debt-to-asset ratio, equity-to-asset ratio and debt-to-equity ratio. Profitability measures include net farm income, rate of return on assets and rate of return on equity. An operating profit margin ratio and asset turnover ratio are also calculated.

The right side of the Financial Measures Section provides a review of cash flows with respect to cash needed for debt service. It compares Cash Available for Debt Service in the short term to scheduled loan payments. Additionally, it helps evaluate the short-term capability for repaying operating notes while replacing or adding capital assets as needed. Any planned (actual) new borrowing is added to cash remaining after scheduled payments. Interest payments on operating notes (line-of-credit and single payment short-term notes) are then subtracted and the result is *Cash Available for New Investment and Risk*, where risk may be interpreted as error in forecasting actual receipts and expenses. A cash flow sensitivity is also presented.

Farm Stress Test

Like the Financial Measures section, the Farm Stress Test is designed to provide insights into for liquidity, solvency, risk bearing ability, credit worthiness, and profitability. The numbers used in the stress test come from current financial statements (Cash Flow Statement, Balance Sheet, Income Statement). Here, the interpretation is visual and designed to provide insight into sources of farm financial stress and the extent of stress. Financial ratios are presented on a scale from low stress to high stress along with benchmarks. Using a stoplight transition from green to yellow (caution) to red (stop), low stress is shown with a green bar, high stress with a red bar (Figure 2). For example, the rate of return on equity, ROE, serves as an index of profitability. The higher the value, the more profitable is the business. The scale in the stress test shows that if ROE is 10 percent or higher, farm financial stress is likely to be low whereas if ROE is below 5 percent, farm stress may be a concern.

ROE can be compared to the return that could be earned in alternative investments, such as certificates of deposits, bonds, or stock mutual funds. ROE is most meaningful in year-to-year comparisons if assets are valued using their cost basis.

$$\text{Rate of return on farm equity} = \frac{(\text{Net farm income from operations} - \text{value of operator's labor \& management})}{\text{Average farm equity}}$$



Figure 2.

Developing Multiple Year Financial Statements

Once a set of integrated farm financial statements has been completed for a single crop year or calendar year, ending values of assets and liabilities and information from the Debt Worksheet provide much of the beginning information needed for the following year's financial statements. MULTSTAT contains procedures to transfer the ending financial data to the appropriate locations in the financial statements as beginning values for the next year.

The Cash Flow Statement from the first period is modified as required for subsequent periods. If desired, the entire Cash Flow Statement from the first period may be erased and a new Cash Flow Statement created for the following period. Once the statements for the second period are complete, financial progress can be evaluated by studying changes in Owner Equity, Net Farm Income, Net Cash Flow, and the Financial Ratios.

Steps in Building a Whole Farm Plan in IFFS

Developing a whole farm plan in IFFS begins with data collection. A systematic approach to building a plan includes:

1. Gather the farm financial and production information needed from farm records.
2. Develop enterprise budgets using CLBUD and save each individually.
3. Complete an Additional Information worksheet using AI.
4. Record asset and liability information in MULTSTAT.
5. Load budgets (individual enterprise budgets and additional information files) into MULTSTAT.
6. Review the financial statements and ratios.

To analyze an alternative plan, outline changes to be made, modify budgets as needed or add/remove budgets, modify the debt worksheet and balance sheet if necessary, and save the new plan using a different file name.

The IFFS Data Collection Packet helps users summarize the data needed to develop a whole farm plan and includes:

- Trend worksheet
- Cash operating expense allocation worksheet
- Worksheets summarizing production and monthly expense allocation
- Asset inventory
- Debt worksheet
- Other income worksheets

Data from farm financial record keeping software such as Quicken or QuickBooks can be imported into IFFS using an add-on Excel template (QLink). Transferring information from these programs to IFFS requires users to map the producer's Quicken category list or QuickBooks chart of accounts to the appropriate rows in IFFS budgets and financial statements. This process is facilitated by the QLink template. If enterprise

accounting is done within Quicken or QuickBooks using the "classes" feature, cash flow reports by class can be printed to files for use as cash budgets; otherwise, a whole farm cash flow is printed to a file for use in the IFFS cash flow statement.

IFFS Purchase Information

The IFFS software package costs \$200 and includes:

- An instruction manual with a step-by-step tutorial for building a plan for an example farm.
- Data collection packet to summarize production and financial data needed for a complete plan.
- Software on CD.

Institutional purchasers of the software buy one copy per user. Multiple copies of the IFFS software may be purchased at a discount if users participate in a one day training workshop. Training sessions will be scheduled periodically and upon request if 10 or more participants register. Fees for out-of-state training are negotiable and depend on the travel costs for instructors. Special pricing for copies of IFFS to be used in a course or other educational program is available. Technical support from Extension staff is available by e-mail or phone weekdays 8 a.m. to 5 p.m. CST.

Summary

The Integrated Farm Financial Statements Software (IFFS) is a software tool that has been used for more than 20 years in Oklahoma Cooperative Extension Service programs to assist producers in developing farm and ranch business plans. Farm data is entered in three independent worksheet files: crop and livestock budgets (CLBUD), additional information (AI) and the multi-year integrated statement file (MULTSTAT). Farm financial statements and summaries that are generated include the Debt Worksheet, Balance Sheet, Cash Flow Statement, Income Statement, Financial Measures and Farm Stress Test. The statements may be prepared from actual data to help evaluate past operating performance or from estimated data to assist in planning future operations. Consecutive years of financial statements and financial measures developed in a consistent manner provide the best information about changes in financial performance and position of a business. IFFS is a tool that is useful in developing both financial statements and financial ratios.

IFFS Website: <http://www.agecon.okstate.edu/iffs/>

Related References: osufacts.okstate.edu under Farm Management

AGEC-751	Developing a Cash Flow Plan
AGEC-752	Developing a Balance Sheet
AGEC-753	Developing an Income Statement
AGEC-790	Evaluating Financial Performance and Position
AGEC-237	Farm and Ranch Stress Test
AGEC-238	Farm and Ranch Financial Trends Worksheet

Oklahoma State University, in compliance with Title VI and VII of the Civil Rights Act of 1964, Executive Order 11246 as amended, Title IX of the Education Amendments of 1972, Americans with Disabilities Act of 1990, and other federal laws and regulations, does not discriminate on the basis of race, color, national origin, gender, age, religion, disability, or status as a veteran in any of its policies, practices, or procedures. This includes but is not limited to admissions, employment, financial aid, and educational services.

Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, the Director of Cooperative Extension Service, Oklahoma State University, Stillwater, Oklahoma. This publication is printed and issued by Oklahoma State University as authorized by the Vice President, Dean, and Director of the Division of Agricultural Sciences and Natural Resources and has been prepared and distributed at a cost of 20 cents per copy. 0213 Revised GH.