Farm Financial Standards Council

Promoting Uniformity and Integrity in Financial Reporting and Analysis

Financial Guidelines For Agricultural Producers

April 2011

Recommendations of the Farm Financial Standards Council

Financial Guidelines

For

Agricultural Producers

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(Revised)
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In order to avoid misunderstanding among members of the accounting profession relative to potential conflicts between current generally accepted accounting principles (GAAP) and the farm financial analysis recommendations contained in this report, the Farm Financial Standards Council issues the following statement:

> **The Farm Financial Standards Council (FFSC) recommendations are not written to suggest changes to GAAP; nor should they be construed to serve as a replacement for, or an alternative to, GAAP. In fact, the FFSC recognizes that financial statements prepared in accordance with GAAP may be the ultimate goal for agricultural producers. Currently, however, many producers do not maintain their financial records according to GAAP. It is for these producers—and the lenders, educators, and advisors who work with them—that our recommendations on financial reporting are prepared.**

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I. INTRODUCTION

This Report contains Financial Guidelines for Agricultural Producers which are the Recommendations of the Farm Financial Standards Council.

The Financial Guidelines for Agricultural Producers are intended to:

1. Promote uniformity in financial reporting for agricultural producers by presenting methods for financial reporting which are theoretically correct and technically sound;

2. Present standardized definitions and methods for calculating financial measures which may be used in the measurement of financial position and financial performance of agricultural producers; and

3. Identify alternatives for development of a national agricultural financial database.

This Report is intended to respond to the need for financial guidelines with respect to production agriculture. Persons interested in such guidelines would include agricultural producers; all types of lenders — commercial bankers, Farm Credit System loan officers, insurance industry lenders, suppliers of trade credit, providers of dealer credit, Consolidated Farm Service Agency lenders, and other, non-institutional lenders; accountants, attorneys, estate planners, and other financial consultants; academicians, farm financial research specialists, representatives of the USDA Extension Service and the Economic Research Service, and agricultural economists; representatives of farm trade groups and software firms; and elected public officials (local, state or federal), regulators of production agriculture, and regulators of financial institutions.

The foregoing list of interested persons is not intended to be limiting and by no means can be considered all inclusive. It is simply intended to show the wide array of parties having an interest, in one way or another, in the area of production agriculture. Throughout this Report, such persons will simply be referred to collectively as "interested parties".

This Report should be viewed as a resource document — it should not be viewed as a rigid, inflexible set of standards. When applying the guidelines and concepts found in this Report users must consider: the availability of information; the cost and benefit associated with gathering and analyzing additional increments of information; and the amount of information which is necessary to make a specific decision, financial or otherwise, in a sound manner.

For convenience, throughout this Report, the terms "farm" and "farmer" will be used generically to refer to all types of agricultural operations/producers, regardless of whether a beef cattle ranch/rancher; dairy farm/dairyman, apple orchard/orchardist, etc. Also, the Farm Financial Standards Council will usually be referred to simply by the acronym FFSC.

MISSION, VISION AND CORE VALUES

The MISSION of the FFSC is to provide a national forum for developing standards and implementation guidelines for preparers and users of agricultural financial information that will promote uniformity and integrity in financial analysis and reporting for agricultural producers.

The VISION of the FFSC will be accomplished when:

- forums we sponsor address critical areas where standards are needed
- standards supplement already existing bodies of general accounting and financial analysis
- standards are developed in a timely manner
- Council efforts are perceived with credibility by industry participation
- Standards are readily accessible

The CORE VALUES of the FFSC will continue to approach its efforts with:

- openness to all points of view, regardless of the vocation or respective allegiance of participants to specific employers or industry affiliations
- priority placed on reaching commonality in consensus, but not excluding other points of view
- interests of the ultimate customer (producers and practitioners who serve their interests) taking priority over interests of specific entities who may represented on the Council

A BRIEF HISTORY

The decade from 1973 to 1983 covers a period in the history of American agriculture which started with optimism, bordering on euphoria; and ended with discouragement and disillusionment, bordering on depression. The number and magnitude of events and changes experienced in that decade would at least rival the events and changes experienced by American agricultural in any preceding decade.

During the subsequent years of 1983 to 1987, agriculture suffered through what is now looked back on as the "Farm Debt Crisis". The experience of those years pointed out that methods used to determine, measure and analyze the financial position and the financial performance of agricultural producers were either totally inadequate or seriously underutilized.

The Farm Debt Crisis created an increased interest in farm financial education and a demand for more sophisticated techniques to be used in analyzing financial position and financial performance. That demand brought about a rapid expansion in the number of textbooks, computer programs, and similar products and services to be used for such analysis. Many of these new systems incorporated unique methods of analysis which only added to the existing wide array of procedures and practices followed in analyzing the financial position and financial performance of farm operations. Unfortunately, it was often difficult for agricultural producers, lenders, farm financial advisers or other interested parties:

1. To be confident in the theoretical validity and technical soundness of the system, and
2. To perform any type of comparative analysis of the financial position and financial performance of one farming operation to others within the same industry group.

In 1988, the Executive Committee of the Agricultural Bankers Division of the American Bankers Association conceived a project to attempt development of some standardization in financial reporting and financial analysis with respect to agricultural producers. The need for at least a degree of standardization was highlighted in the February 22, 1989, Report of the National Commission on Agricultural Finance. One of the three major recommendations for action made by that Commission was as follows:

> *Efforts are needed to develop: (a) a universal loan application, and (b) accounting standards for farm businesses. Efforts should address both loan documentation and accounting practices for analyzing farm businesses and for collateralizing loans. As sales of agricultural loan instruments become regional and national, such documentation and standardization are essential.*

On January 22-23, 1989, at the invitation of the Agricultural Bankers Division of the American Bankers Association, there was a gathering in St. Louis, Missouri of more than 50 interested parties representing virtually all aspects of agricultural finance. The purpose of the meeting was to focus on financial reporting and financial analysis for agricultural producers. The facilitator for that initial meeting opened with the charge "check your ego and lapel pin at the door"; and closed with an observation that notwithstanding the apparent differences among various parties, there was probably better than 80% common ground with respect to what were deemed to be appropriate methods for both financial reporting and the analytical techniques useful for effective and realistic measurement of the financial position and financial performance of agricultural producers.

Beyond the financial analysis of a single farming operation, there were recognized to be other benefits of standardized methods of financial reporting and financial analysis for agricultural producers. Uniform guidelines and formats could facilitate the educational process for those associated with and interested in production agriculture. In addition, uniformity would permit interested parties to collect data for historical and comparative analysis of farming operations. When such information is assembled over time, it might be expected to aid in development of benchmarks that would reasonably be expected to facilitate the flow of capital and credit into the agricultural community. Furthermore, by applying those benchmarks to understand the impact of debt and equity capital on various types of farming operations, there may be improvement in pricing (i.e., interest rates) for debt capital used by agricultural producers.

From the participants, there was clear consensus that it would be worthwhile to make a concerted effort to develop and publish standardized Financial Guidelines for Agricultural Producers. Subcommittees were created and work began on the first edition of this Report.

FARM FINANCIAL STANDARDS (THE "REPORT")

On November 9-10, 1990, after untold hours of volunteer time, enormous contributions of resources from several land grant institutions and other firms, several public exposure drafts, and intense discussion and debate, the first edition of this Report was approved and subsequently issued in May, 1991.

The recommendations of the FFSC have been published in a Report containing three substantive sections:

1. *Universal Financial Reports.* This section contains suggested procedures and concepts for constructing farm financial statements for the purposes of financial reporting and financial

analysis (i.e., the balance sheet, the income statement, the statement of cash flows, and the statement of owner equity).

2. *Universal Financial Criteria and Measures.* This section contains material regarding definitions, computations, interpretations, and limitations of some of the most widely used measures of financial position and financial performance.

3. *Universal Information Management.* This section contains suggestions for collecting and using standardized farm financial data for the benefit of agricultural producers and those that serve them.

On November 13-14, 1993, revisions to the Report were approved to add an Appendix explaining, in layman's terms, the significant differences between Cash and Accrual accounting.

On November 12, 1994, several additions, clarifications and revisions to the Report were approved in the following areas:

1. Treatment of Personal Assets and Liabilities and Non-Farm Income

2. Treatment of Raised Breeding Livestock

3. Capital Leases

4. Inventories

5. Deferred Taxes

On November 8, 1997, the FFSC approved expansion of the Report by the addition of material on Disclosure by Notes and a Glossary. In addition, clarifying and conforming changes were made where appropriate.

On August 11, 2007, the FFSC approved revisions to recommend use of book depreciation rather than tax depreciation for valuation of assets at cost. This required changes to the depreciation discussion in Part II and the example financial statements in Appendix A. The Council also added several financial measures to Part III which required updates to the example financial measures in Appendices C and D.

On July 22, 2010, the FFSC approved revisions to Appendices A, B, C and D. Appendix A now includes a reconciliation of accrual-adjusted net income to net cash provided from operations. Appendix B now reflects a stronger capitalized operation, provides greater clarification to some of the financial statement notes, and expands the section on reconciling market value balance sheets between two periods. Appendix D reflects the changes in the financial statements from the edits to Appendix B. Finally, Appendices C and D now include both cost-basis and market-basis ratios for certain solvency, profitability, and efficiency ratios.

The Financial Guidelines for Agricultural Producers found in this Report were not born in haste and have not been modified or enhanced without extensive discussion and due consideration. The objective has always been to reach consensus on a common ground. However, overriding all other considerations has been a commitment that the Report must always be theoretically correct and technically sound.

STRUCTURE OF THE FFSC

The FFSC was "born" as the "Farm Financial Standards Task Force" which was originally a gathering of people invited by the Agricultural Bankers Division of the American Bankers Association. Some of those people were recognized by their peers as being experts in the field of agricultural finance; others were interested parties having demonstrated varying degrees of expertise in understanding and analyzing the financial position and financial performance of agricultural producers.

On March 8, 1993, the Farm Financial Standards Task Force was incorporated as a "Nebraska non-profit corporation" and a board of directors was elected. On November 12, 1994, the corporate name was changed to Farm Financial Standards Council to reflect more appropriately an organization having permanence.

The FFSC is governed by a Board of Directors, each of whom is elected to serve a three-year term. The officers consist of a President, Vice President and Secretary – Treasurer each of whom is elected to serve a one-year term. Directors and officers are selected from among interested persons who have actively participated in the development of the Report or who have otherwise demonstrated an interest in and commitment to the Mission of the FFSC.

The FFSC is an independent body made up of persons serving without pay. In addition to the volunteer time, many organizations have contributed substantial amounts of staff time and material to sustain the effort of the FFSC. Deserving of special recognition are the substantial cash contributions received from The Farm Foundation in the early years.

The FFSC represents a forum for identification, discussion and resolution of issues regarding both financial reporting and the measurement of financial position and financial performance. This forum has served, and will hopefully continue to serve, all interested parties.

Issues for resolution by the FFSC are identified by its directors, officers and others from their own knowledge or by polling non-FFSC persons about those areas of financial reporting or financial measurement and analysis where discussion is needed to resolve conflict or inconsistency, or is needed to respond to a deficiency, all with respect to production agriculture.

FFSC AND THE ACCOUNTING PROFESSION

The FFSC is not and was never intended to be an organization of accountants—the accounting profession is only one of several groups of interested parties with representation on the Board of Directors. Accordingly, the FFSC has no standing to specify Generally Accepted Accounting Principles (GAAP) or changes thereto. That responsibility rests primarily with the Financial Accounting Standards Boards (FASB) and the American Institute of Certified Public Accountants (AICPA).

The FFSC believes that financial statements prepared in accordance with GAAP, together with certain supplemental information important to farmers and analysts, represent an appropriate standard for production agriculture. However, this Report does identify and provide suggested treatment for certain areas of financial reporting that, although not in accordance with GAAP, are in relatively widespread use among interested parties other than the accounting profession. In cases where farm businesses do not have and likely cannot afford to have the internal accounting systems necessary to generate financial statements in accordance with GAAP, the FFSC believes that the

identified alternatives contained in this Report, if adequately disclosed, still provide information useful for analytical purposes.

It is the hope of the FFSC that this Report together with on-going discussion and debate will help focus the accounting profession on the continuing financial reporting challenges faced by agricultural producers.

FUTURE OF THE FFSC

The Directors and other supporters of the FFSC have agreed there is a need for a continuing organization to carry forward the Mission of the FFSC.

Any user of this Report should be aware that the recommendations of the FFSC are likely to continue evolving over time and could change as new issues are identified and resolved. Further, changes to these Financial Guidelines for Agricultural Producers may, and are likely to happen as change occurs: in agriculture; to generally accepted accounting principles; in the technology available for data collection, manipulation, storage and publication; and, most importantly, in the needs of agricultural producers for financial data and analytical techniques for the measurement and analysis of financial position and financial performance.

At any time, please feel free to notify any person associated with the FFSC of any issue or concern which develops as you review and apply these Financial Guidelines for Agricultural Producers.

Please feel free to forward any written comments or recommendations for changes in content to Carroll E. Merry.

Additional copies of the Guidelines may be obtained, for a nominal charge, by contacting:

Carroll E. Merry
Countryside Marketing, Inc.
Phone: (262) 253-6902
Facsimile: (262) 253-6903
e-mail: cmerry@countryside-marketing.com

or write to:

Farm Financial Standards Council
N78W14573 Appleton Avenue, #287
Menomonee Falls, WI 53051
www.ffsc.org

When writing or faxing a request, be sure to specify "Financial Guidelines for Agricultural Producers".

II. RECOMMENDATIONS ON UNIVERSAL FINANCIAL REPORTS

As the FFSC attempted to resolve the numerous issues relating to the compilation and analysis of farm financial statements, its members considered a number of fundamental factors. To put these factors into context for the reader, we will outline some of the basic background that was important in the development of our recommendations.

Production agriculture has played a major role in the overall U.S. economy since its formation. As an industry, it is unique because of the large number of participants (close to two million agricultural producers); the diversity of individual firm production, financial, and marketing characteristics; and the dramatic increases over the last thirty years in the degree of capitalization required per dollar of output. The industry is comprised primarily of small, family-owned firms. In the last fifteen years, the complexity of financial transactions, and the volatility of market prices, have dramatically increased the focus on farm financial reporting. The accounting profession has provided only limited industry-specific guidance for agricultural issues. *Statement of Position 85-3, Accounting by Agricultural Producers and Agricultural Cooperatives*, issued by the American Institute of Certified Public Accountants (AICPA) in April, 1985, provides accounting guidance for inventories, development costs of land, perennial crops, and breeding livestock. The related *Audit and Accounting Guide*, issued by the AICPA with conforming changes as of May 1, 1993, covered a few additional issues, including accounting for income taxes and government programs. Unfortunately, the examples of financial statements included with the *Guide* were very summarized and of limited use to agricultural producers and lenders for analytical purposes.

The primary forces behind the evolution of farm financial reporting and analysis have been the agricultural lending community, accountants, financial analysts, and the land grant universities. The definitions and processes used by these individuals, while consistent at a very basic level, were not subjected to any formal attempt at consistency and standardization. Even though the potential benefits of achieving consistency have long been acknowledged, previous attempts have had only limited success. The FFSC represents the largest and most aggressive effort towards a consistent process for production agriculture.

DIVERSITY OF PRACTICE

Presently, among agricultural producers there are a number of accounting practices that represent substantial deviations from GAAP. The reasons for this diversity are varied, but can be related to three fundamental characteristics of agricultural operations:

1. Since many farm operations are single-family operations, with the owners having limited training in finance and accounting, the recordkeeping systems that developed over the years had basic design objectives of simplicity and ease of use. These systems are predominantly, cash-based systems that focus on generating tax information as well as certain amounts of production information. A complete, double-entry system of accounting with the periodic generation of financial statements, which was almost unheard of ten years ago, is still in general use by only a small percentage of full time, commercial farms.

2. The primary external user of farm financial statements has been the agricultural lending community, using the statements as one of the key indicators of financial position and financial performance. Because of the minimal capabilities of farm recordkeeping systems, lend-

ers are forced to focus their analysis on the information that can reasonably be obtained from the farmer. Since few, if any, non-cash transactions (e.g., perpetual inventories, charge-off of prepaids, accrual of liabilities) are recorded by the farmer, a cash-based system—or more commonly the tax return—is the primary source of information on net cash income. Further, since periodic balance sheets are usually not compiled, the lender is forced to accept a balance sheet as of the loan application date, because that is the only way to verify the accuracy of inventory and liability amounts. The result is a set of financial statements that are not interrelated and provide only a minimal amount of information regarding the financial position and financial performance of the agricultural producer.

3. The primary focus in the preparation of financial position (balance sheet) and owner equity calculations has been on market value rather than historical cost or other valuation methods. This focus has occurred because of: (a) the lender's need to determine the reasonableness of collateral values; (b) the lack of records to track and accumulate historical costs; (c) the hybrid nature (personal and business) of many farm financial statements; and (d) the dramatic increase in investment in capital assets during a period of time when the value of these assets was appreciating substantially, causing the true value of these assets to bear little resemblance to their historical cost, adjusted for depreciation.

A number of changes have taken place in production agriculture that have increased the need for more complete and accurate farm financial information. These changes include increased volatility in net income, increased complexity of the financial structure of farm operations and their accounting transactions, and more stringent loan review requirements for lenders. Lenders, accountants, academicians, and others in the agricultural finance field have responded to this need with countless educational programs, software packages, forms, and other tools to assist the farmer in providing more complete information. In most cases, however, those tools are designed to provide more detailed information by not imposing greatly different recordkeeping requirements or accounting system changes on the part of the agricultural producers.

Therefore, the "financial statements" that are being used by many agricultural producers and lenders today are, in fact, abbreviated accounting systems. They are designed to arrive at an accrual adjusted income figure for the operation by adjusting balance sheet and cash basis income information supplied by the agricultural producer. While this use of financial statements to replace accounting systems may perhaps seem like a minor distinction, it is the cause for many of the problems faced by the FFSC in dealing with consistent reporting and analysis. Very few people involved in agricultural finance will disagree with the importance of calculating accrual adjusted earnings for a farm operation, but there is substantial disagreement on what should be included in that number—whether it should be reconciled with owner equity calculated on other than a market value basis, and/or whether it should include a charge for family labor or represent a return to that resource.

The FFSC recognizes and strongly endorses GAAP as the basis for farm financial statements. The consensus of the FFSC is that farm financial reporting should have, as an overriding goal, an evolution toward consistency with GAAP and the promulgation's of the accounting profession. Therefore, the FFSC has not attempted to generate an entire set of financial reporting guidelines in this Report. Rather, the FFSC recommendations on financial reporting, which are for the purpose of financial analysis, include the following: (a) affirmation of GAAP and identification of instances where GAAP is different from practices currently in use by some lenders and analysts; (b) guidelines for treatment of certain types of transactions unique to agriculture in order to be in conformity with GAAP; and (c) suggestions for alternative approaches for financial analysis in areas

where the FFSC feels GAAP conformity cannot currently be achieved for many agricultural producers.

AREAS OF DEPARTURE FROM GAAP

Balance Sheet Format—Capital Asset Presentation. GAAP requires that the business balance sheet be prepared using cost information for capital assets. Market value data may be submitted as supplementary information (upon which a CPA would not generally express an opinion as to fairness of presentation). GAAP does allow presentation of net assets at fair market value for personal financial statements, but this disclosure should be shown as a single investment amount on the balance sheet with footnote disclosure of the individual asset and liability values.

The FFSC recognizes that both net book value (cost less accumulated depreciation) and market value information for capital assets are needed for purposes of analysis. This information can be provided via a balance sheet format consistent with GAAP (as described above), or with alternative balance sheet formats acceptable to the agricultural producer and other interested parties using those balance sheets. These alternative formats may include market values of capital assets on the face of the balance sheet and cost information in supporting schedules, parenthetical disclosure of cost information, or a double-column approach to presenting the balance sheet.

Raised Breeding Stock. The FFSC encourages a full cost absorption approach (which is the GAAP treatment) for treatment of raised breeding stock. However, for analytical purposes, alternative methods are allowed that establish an estimated "base value" for balance sheet representation. Earnings impact is limited only to the effect of either a change in size and maturity of the breeding herd or a change in the general level of base values, both because the "base value" is not amortized against revenue.

Deferred Taxes. Although the FFSC recommends full adoption of GAAP accounting for deferred income taxes, it allows an alternative calculation approach which can be used for the purpose of financial analysis.

Accounting for Inventories of Grain and Livestock. *Statement of Position 85-3, Accounting by Agricultural Producers and Agricultural Cooperatives* (AICPA, April, 1985) makes no specific mention of livestock inventories. However, Paragraph 39 of the *Statement* does address the matter of grain inventories by stating:

> 39. An agricultural producer should report inventories of harvested crops held for sale at (1) the lower of cost or market or (2) in accordance with established industry practice, at sales price less estimated costs of disposal, when all the following conditions exist:
>
> - The product has a reliable, readily determinable and realizable market price.
> - The product has relatively insignificant and predictable costs of disposal.
> - The product is available for immediate delivery.

Audit and Accounting Guide (AICPA, May 1, 1993) expanded the above to include livestock held for sale. However, the *Guide* states that both "growing crops" and "developing animals" that are held for sale should be valued at the lower of cost or market.

The language of these two publications is somewhat vague as to the exact definitional difference between livestock held for sale and developing animals. However, a strict interpretation of them would limit accounting for livestock inventories at "market" only if the animals were at market weight. If GAAP uses this restrictive interpretation, then the FFSC recommendations for financial analysis depart from GAAP. The FFSC recommendations allow "market valuation" (sales price less cost of disposal) for *all* grain and livestock inventories held for sale, as long as the three conditions listed in Paragraph 39 of *Statement of Position 85-3* apply.

Inventory Items for Resale. For inventories of items purchased for resale, there are conceptually two subcategories.

1. The first subcategory includes those items (such as feeder livestock, harvested crops, etc.) which are actually purchased with the intention of being resold in the same form (although the feeder livestock would be heavier when finally sold).

2. The second subcategory includes those items, primarily feedstuffs, that are not purchased with the intent of being resold, but instead are intended to be consumed as an input in producing another item that will eventually be sold (e.g., feedstuffs that will be consumed by finishing livestock or be converted into milk, eggs or other products). However, these purchased items could be resold in the same form as they were originally purchased.

For items of the first subcategory, the market valuation is acceptable but not preferred to valuation using the lower of cost or market.

For items of the second subcategory, the lower of cost or market valuation method should be used. Inventories of certain harvested crops which represent feedstuffs that would ordinarily be fed to livestock as part of the same operation would not necessarily meet the three criteria found in *Statement of Position 85-3* set forth earlier. Because such crops are intended to be fed, they are not intended to be sold and thus do not meet the criteria of "The product is available for immediate delivery". Such inventory items are clearly intended to be inputs in the production process. The FFSC position is that valuing these inventory items at market value is acceptable, but generally not preferred to valuation at the lower of cost or market value, which would be a treatment in accordance with GAAP.

The main difficulty with recommending that purchased inventories be valued at the lower of cost or market (i.e., in accordance with GAAP) is that the purchased input items (primarily feedstuffs) are often commingled with raised inventories on farms that both raise and purchase the same type of feedstuffs (e.g., corn, hay, silage, etc.). Short of full-blown inventory accounting, one alternative which would produce acceptable results in the case of commingled inventories would be to assume that all feedstuffs on hand at the end of the year were purchased and to value those feedstuffs at the lower of either the weighted average purchase cost or market (as long as the units purchased during the year exceeded the units remaining in inventory at year-end). If more units (e.g., bushels, pounds, bales, etc.) are in inventory at year-end than the total units purchased during the year, then the number of units which are valued using the "average cost" method would be limited to the number of units actually purchased during the year. Any remaining units clearly would have been raised and would be valued according to the agricultural producer's practice for valuing inventories which do not meet the three criteria for use of the net realizable value in accounting for inventories.

Other Items that Serve as Raw Materials in the Production Process. This category would include seed, fertilizer, fuel, and other supplies. The FFSC position is that these items should be valued at cost. While GAAP would recommend a lower of cost or market valuation for these type of inventory items, in practice, the FFSC position for this category is generally consistent with the valuation practices of most accountants preparing financial reports for agricultural producers.

Growing Crops. Paragraph 38 of *Statement of Position 85-3* requires that "all direct and indirect costs of growing crops should be accumulated and growing crops should be (reported at the) lower of cost or market" (AICPA, April, 1985). In the case of annual crops, the FFSC recommends, for analysis purposes, that it is allowable to accumulate direct costs only and report this "Investment in Growing Crops" on a cost basis. (Care should be exercised to avoid "double counting" these same direct costs in prepaid expenses.)

Government Loan Programs. In cases where the net realizable value of a commodity pledged to secure a government loan is less than the loan plus accrued interest, GAAP requires that the commodity be reported at a value equal to the loan plus accrued interest. The FFSC has departed from this position and recommended, for analysis purposes, that the commodity be shown at the higher of net realizable value or the government loan rate. In cases where net realizable value exceeds the loan rate, accrued interest on the loan should be reported, limited by the constraint that the total of the loan amount plus accrued interest should not exceed the net realizable value.

For particular types of transactions not addressed in this Report, GAAP should be used as the guideline for treatment.

The FFSC recommendations on financial reporting are intended for use by agricultural producers and other interested parties in identifying and analyzing the financial position and financial performance of a farm operation (whenever GAAP financial statements are not available). However, the FFSC recognizes that financial information is only one of a number of factors considered by lenders in evaluating a request for credit. Other factors include the management ability and character of the borrower, the past dealings of the borrower, the collateral securing the loan, and the intended use of the funds. The status of one or more of these factors may support a decision by the lender to require either more or less detailed financial information than that identified in this Report. While the FFSC does not suggest that making a credit decision based on financial reporting that is less rigorous than that suggested in this Report will necessarily be a bad credit decision, *it is the opinion of the FFSC that financial analysis based on information not in conformity with GAAP, or at least with the contents of this Report, may misstate the financial position and/or financial performance of a borrower, and will be of limited use for aggregate or comparative analysis purposes.*

THE CONCEPTUAL FRAMEWORK

The FFSC felt it was very important to agree on a single source of basic conceptual information relating to the financial reporting process. **Accordingly, the FFSC elected to use the *Statements of Financial Accounting Concepts* issued by the Financial Accounting Standards Board (FASB) as a foundation for this Report**. In the "Introductory Comments," the FASB states that the series is designed to "*constitute a foundation of financial accounting standards—to prescribe the nature, function, and limits of financial accounting and to be used as a guideline that will lead to consistent standards. These conceptual statements do not establish accounting standards or disclosure practices for particular items (GAAP).*" The statements include financial reporting objectives,

qualitative characteristics, elements, recognition, measurement, financial statements, earnings, funds flow, and liquidity.

Statement of Financial Accounting Concepts No. 1 (FASB, November, 1978) addresses the objectives of financial reporting by business enterprises, and those objectives are summarized in the following excerpts from the "Highlights" section of the Statement:

> Financial reporting should provide information that is useful to present and potential investors and creditors and other users in making rational investment, credit, and similar decisions. The information should be comprehensible to those who have a reasonable understanding of business and economic activities and are willing to study the information with reasonable diligence.
>
> Financial reporting should provide information to help present and potential investors and creditors and other users in assessing the amounts, timing, and uncertainty of prospective cash receipts from dividends or interest and the proceeds from the sale, redemption, or maturity of securities or loans. The prospects for those cash receipts are affected by an enterprise's ability to generate enough cash to meet its obligations when due and its other cash operating needs, to reinvest in operations, and to pay cash dividends and may also be affected by perceptions of investors and creditors generally about that ability, which affect market prices of the enterprise's securities. Thus, financial reporting should provide information to help investors, creditors, and others assess the amounts, timing, and uncertainty of prospective net cash inflows to the related enterprise.
>
> Financial reporting should provide information about the economic resources of an enterprise, the claims to those resources (obligations of the enterprise to transfer resources to other entities and owners' equity), and the effects of transactions, events, and circumstances that change resources and claims to those resources.
>
> Financial reporting should provide information about an enterprise's financial performance during a period. Investors and creditors often use information about the past to help in assessing the prospects of an enterprise. Thus, although investment and credit decisions reflect investors' and creditors' expectations about future enterprise performance, those expectations are commonly based at least partly on evaluations of past enterprise performance.
>
> The primary focus of financial reporting is information about an enterprise's performance provided by measures of earnings and its components.
>
> Financial reporting should provide information about how an enterprise obtains and spends cash, about its borrowing and repayment of borrowing, about its capital transactions, including cash dividends and other distributions of enterprise resources to owners, and about other factors that may affect an enterprise's liquidity or solvency.
>
> Financial reporting should provide information about how management of an enterprise has discharged its stewardship responsibility to owners (stockholders) for the use of enterprise resources entrusted to it.
>
> Financial reporting should provide information that is useful to managers and directors in making decisions in the interests of owners.

Statements of Financial Accounting Concepts No. 2 (FASB, May, 1980) examines the characteristics that make accounting information useful. Excerpts from the "Summary of Principal Conclusions" read:

> All financial reporting is concerned in varying degrees with decision making (though decision makers also use information obtained from other sources). The need for information on which to base investment, credit, and similar decisions underlies the objectives of financial reporting. The usefulness of information must be evaluated in relation to the purposes to be served, and the objectives of financial reporting are focused on the use of accounting information in decision making.
>
> The central role assigned to decision making leads straight to the overriding criterion by which all accounting choices must be judged. The better choice is the one that, subject to considerations of cost, produces from among the available alternatives information that is most useful for decision making.

Statements of Financial Accounting Concepts No. 3 (FASB, December, 1980) was replaced by *Statement of Financial Accounting Concepts No. 6* (FASB, December, 1986).

Statement of Financial Accounting Concepts No. 4 (FASB, December, 1980) deals with non-profit entities.

Statement of Financial Concepts No. 5 (FASB, December, 1984) sets forth recognition criteria and guidance on what information should be incorporated into financial statements and when.

Statement of Financial Accounting Concepts No. 6 (FASB, December, 1986) defines ten elements of financial statements for business enterprises: assets, liabilities, equity, revenues, expenses, gains, losses, investments by owners, distributions to owners, and comprehensive income.

While these FASB statements do not specifically deal with the agricultural industry and its unique financial transactions, they are an excellent foundation for the development of financial reporting guidelines consistent with the objectives of the FFSC.

FINANCIAL REPORTING AND FINANCIAL STATEMENTS

Financial reporting refers to information contained in financial statements as well as information considered necessary or useful in the interpretation and understanding of the financial condition of the business enterprise (footnotes, supplementary schedules, inventory detail, etc.).

There was consensus among the members of the FFSC that the minimum set of financial statements should include:

Balance Sheet

Income Statement

Statement of Cash Flows

Statement of Owner Equity

It is critical that the statements be prepared on a consistent basis (i.e., that the income statement, statement of cash flows, and statement of owner equity cover identical time periods and that the balance sheet provide values for the beginning and end of that period). Additional information should be provided, *whenever such information is necessary for the interpretation and material understanding of the financial condition of the business enterprise.* Examples of such information are: financial statements of owned businesses, detailed supporting schedules for debt, prices and quantities of major asset categories, disclosure of non-financial lease commitments, and other information. It is relevant to note that the tax return, although useful for verification purposes, is not considered a component of the basic set of financial statements or a substitute for the income statement.

These recommendations of the FFSC are consistent with excerpts from Paragraph 13 of the *Statement of Financial Accounting Concepts No. 5* (FASB, December, 1984), which states that a full set of financial statements for a period should show:

1. Financial position at the end of the period.
2. Earnings for the period.
3. Total change in equity other than from owner contributions and distribution (comprehensive income) during the period.
4. Cash flows during the period.
5. Investments by and distributions to owners during the period.

(Note that *Statement of Financial Accounting Concepts No. 5* does not list financial position at the beginning of the period as a requirement for a full set of statements. However, because of the common practice in agriculture of generating accrual adjusted income statements from cash activity and balance sheet adjustments, financial position at the beginning of the period is a critical component of agricultural financial statements).

ENTITY ISSUES

In the period since issuing the initial Report in 1991, the FFSC has spent substantial time attempting to discuss and resolve financial statement presentation and analysis challenges that arise from the wide variety of entities involved in production agriculture. The vast majority of farm and ranch operations are organized as sole proprietorships, and a smaller but still significant number of all farm and ranch operations rely on non-farm income as an important contributor to debt repayment capacity and overall viability of the farm operation. Further, the segregation of assets and liabilities for proprietorships between the farm business, other businesses, and/or personal activities can often be a complex task.

Therefore, it is common practice, for the purpose of credit analysis, to construct what are often called "combined" financial statements when a proprietorship is involved. These combined personal and business financial statements generally contain personal assets and personal liabilities on the balance sheet (sometimes separately identified, sometimes not) and include non-farm income (primarily wages, interest, and dividend income) on the income statement. It is important to note that these financial statements generally have several important differences when compared to Personal Financial Statements as defined and addressed in AICPA Statement of Position (SOP) 82-1, *Accounting and Reporting for Personal Financial Statements.* The most significant are:

1. Personal Financial Statements do not contain an income statement; but "combined" financial statements usually contain an income statement that includes both income and expenses of the business as well as wages and income from personal assets.

2. The balance sheet included in Personal Financial Statements shows the assets and liabilities of the farm proprietorship as a single amount (net investment); but in "combined" financial statements, the assets and liabilities of the proprietorship are individually shown in the appropriate current and non-current sections of the balance sheet. Personal assets and personal liabilities are sometimes shown separately and sometimes "commingled" with the business asset and liability accounts on the balance sheet.

While owner or analyst-prepared "combined" financial statements for small, single-business proprietorships may represent an optimal trade-off of the costs and benefits of more detailed reporting for the purpose of credit analysis, they often become cumbersome and potentially misleading when multiple business operations are involved, when personal assets become significant, or when the core business operation increases in size. Issues such as classification of earnings and cash flows, calculation of deferred and estimated taxes, and presentation of the statement of owner equity (net worth) often become significant reporting problems. Determination of the point at which these issues become sufficiently material to preclude utilization of "combined" financial statements is clearly a matter of judgment, and could, therefore, lead to inconsistent utilization within the industry. It is for this reason that the FFSC considered recommending discontinuation of the use of combined financial statements for analytical purposes. However, because of the widespread use of these statements for smaller operations and because of the greater simplicity of preparation for this group of agricultural producers, the FFSC acknowledges that, in certain circumstances, "combined"

financial statements may be utilized. Accordingly, the FFSC has included additional discussion and recommendations relating to "combined" financial statements in several sections of this Report.

The FFSC urges owners and analysts to utilize combined financial statements with caution, and that they continue to evaluate the point at which separate financial statements for each proprietorship as well as a personal financial statement for the individual(s) involved represents a more meaningful approach to analyzing the operation.

MATERIALITY

As the Recommendations of the FFSC are refined, it has become apparent there is a need to address "materiality" with respect to various account classifications and with respect to how adjustments are made to produce accrual adjusted income statements.

Statement of Financial Accounting Concepts No. 2 (FASB, May 1980) defines "materiality" as follows:

> ***Materiality***
>
> The *magnitude of an omission or misstatement of accounting information that, in the light of surrounding circumstances, makes it probable that the judgment of a reasonable person relying on the information would have been changed or influenced by the omission or misstatement.*

Consistent with the foregoing, the FFSC recognizes it is neither practical nor prudent to recommend to agricultural producers a single, rigid method for maintaining accounting records and producing financial reports. It is very clear that what is immaterial for one operation may be quite material for a different operation. For example:

> *From the fiscal year-end December 31, 'X1 to December 31, 'X2, there has been a 50% change in the number and value of feeder cattle on hand. Is that change material?*
>
> ***Immaterial***
>
> *Farmer A has a 4,000 acre cash grain operation and usually finishes 20 head of feeder cattle for market on an annual basis. The relatively small cattle finishing operation is maintained strictly to provide a relatively low-risk, active diversion for the winter months. The fact that Farmer A decided to finish 30 steers one year (20 increased to 30 is a 50% increase!) is relatively immaterial in the entire scope and scale of business as reported through the income statement.*
>
> ***Material***
>
> *Farmer B has a 4,000 acre cash grain operation and usually finishes 20,000 head of feeder cattle for market on an annual basis. The fact that Farmer B decided to finish 30,000 steers one year (20,000 increased to 30,000 is a 50% increase!) would be considered material in the entire scope and scale of business as reported through the income statement.*

Therefore, as decisions about accounting and adjusting issues are made by agricultural producers and those who supply accounting services, the FFSC strongly recommends that those decisions be guided by whether the issue is "material". See Appendix H for further discussions and illustrations of materiality.

FINANCIAL STATEMENT FORMATS

The FFSC was in general agreement that it should not prescribe specific financial statement forms. Rather, it should develop general guidelines to allow for sufficient uniformity of reporting for standardized ratio analysis and comparative analysis. While many of the issues related to financial statement format are included in the discussion of specific types of accounts and transactions in the remainder of the Report, the general background and overall format issues are summarized in this section.

BALANCE SHEET (STATEMENT OF FINANCIAL POSITION)

The following excerpts are reprinted from paragraphs 26 and 27 of *Statement of Concepts No. 5* (FASB, December, 1984):

> 26. A statement of financial position provides information about an entity's assets, liabilities, and equity and their relationships to each other at a moment in time. The statement delineates the entity's resource structure—major classes and amounts of assets—and its financing structure—major classes and amounts of liabilities and equity.
>
> 27. A statement of financial position does not purport to show the value of a business enterprise but, together with other financial statements and other information, should provide information that is useful to those who desire to make their own estimates of the enterprise's value. As a result of limitations stemming from uncertainty and cost-benefit considerations, not all assets and not all liabilities are included in a statement of financial position, and some assets and liabilities that are included are affected by events, such as price changes or accretion, that are not recognized. Statements of financial position also commonly use different attributes to measure different assets and liabilities.

In general, current practice in agriculture is consistent with the above definition of a statement of financial position. Primary areas of disagreement relate to the selection of "measurement attributes" for various categories of assets and the interpretation of recognition criteria (discussed later). There may also be some disagreement with the statement that a balance sheet (if prepared using market values) "does not purport to show the value of a business enterprise." However, on further reflection, it seems reasonable that even a market value-based balance sheet represents only an estimate of tangible asset market value, and true value can only be determined from an actual sale of the asset(s) to a third-party purchaser.

The general FFSC recommendations relating to balance sheet format are as follows:

1. Segregation of assets and liabilities into current and non-current categories on the balance sheet is required. In considering guidelines for further segregation of non-current assets and liabilities, the FFSC determined that materiality should guide the preparer as the major determinant of whether a specific asset and liability category should be separately identified on the balance sheet. At a minimum, the balance sheet should separately identify the following non-current asset categories: a) machinery and equipment, b) breeding livestock, c) buildings and improvements, and d) land. Other non-current asset categories expected to be disclosed on the majority of agricultural balance sheets include investments in capital leases, investments in cooperatives, investments in other entities, retirement accounts, and personal assets. Under non-current liabilities, at a minimum, the balance sheet should separately identify the following categories: a) real estate debt and b) notes payable, other than real estate debt.

The FFSC considered at length whether or not to adopt a balance sheet format that includes a further segregation of non-current assets and non-current liabilities into intermediate and long-term classifications. This particular format is in fairly wide use in the agricultural sector, arising from the substantial investment in, and different financing arrangements for, real estate and all other capital assets. Indeed, many analysts find it useful to compare long-term liabilities (defined as having an initial maturity of greater than ten years) to long-term assets (definitions vary, but generally include real estate assets) to determine whether or not debt is structured consistently with asset life in an operation, and to evaluate overall balance sheet structure. A similar comparison is usually made of intermediate assets and intermediate liabilities.

While we agree that examination of the structure of an enterprise's capital assets and liabilities is an important part of overall financial analysis, we did not feel that the intermediate/long-term categorization added substantively to an analyst's ability to perform that analysis, as long as a reasonable segregation of non-current asset and non-current liability accounts is shown on the balance sheet. Further, as diversification increases in the types of asset holdings, the terms of financing arrangements, and other liabilities of farm enterprises, it is more and more difficult to develop a definition of these two categories that can be consistently applied to all operations. For example, the traditional definition of intermediate liabilities (original maturity greater than one year and less than or equal to ten years) would result in the currently popular balloon financing loans on real estate (with terms of five to ten years) being disclosed as an intermediate, not long-term, liability. Finally, the additional balance sheet classifications force certain liabilities—deferred taxes and personal liabilities are two examples—to be segregated in a manner that is not particularly meaningful.

For these reasons, the FFSC believes that a migration away from the three-category balance sheet will occur. However, in terms of the guidelines embodied in this Report, a three-category balance sheet is acceptable in cases where the preparer feels such segregation is substantially more informative to the user of the statement, and the definition used to segregate the intermediate and long-term categories is clearly disclosed in the financial statements.

2. A proper analysis of the borrowing capacity of an agricultural entity requires information relative to both the cost and the fair market value of its capital assets.

   If financial statements are prepared by an independent CPA in accordance with GAAP, generally cost less accumulated depreciation will be utilized for the valuation of capital assets. Market value information may be disclosed in the independent CPA's report as supplemental information, upon which the CPA expresses no opinion as to the fairness of such information. In the preparation of personal financial statements, GAAP allows the presentation of assets at fair market value, but for business assets this disclosure should be shown as a single line investment amount on the balance sheet with footnote disclosure of the individual asset and liability values.

   However, as long as both market value and cost information are provided, it is acceptable for an agricultural producer to utilize alternative balance sheet formats for capital asset presentation. Acceptable alternatives would include the following: a) showing market values on the face of the balance sheet with parenthetical, footnote, or supporting schedule disclosure of cost and accumulated depreciation amounts; and b) utilizing a double-column approach to presenting the balance sheet.

3. The owner equity section of the balance sheet should contain at least two components—a valuation equity component and a retained earnings/contributed capital component. The valuation equity component represents the difference between the net book value (cost or other basis not charged as an expense) and the balance sheet value (net of deferred taxes) of all farm assets whose value changes are not reflected on the income statement—breeding stock, machinery, real estate, etc. The retained earnings/contributed capital component—retained earnings in the business plus capital contributions of the owners—represents the remainder of owner equity. If possible, this component should be further segregated, and the amounts attributable to contributed capital and retained earnings separately identified.

INCOME STATEMENT (STATEMENT OF EARNINGS AND COMPREHENSIVE INCOME)

The following excerpts are general statements reprinted from paragraphs 30 and 31 of *Statement of Financial Accounting Concepts No. 5* (FASB, December, 1984):

> 30. Statements of earnings and comprehensive income together reflect the extent to which and the ways in which the equity of an entity increased or decreased from all sources other than transactions with owners during a period. Investors, creditors, managers, and others need information about the causes of changes in an entity's assets and liabilities—including results of its ongoing major or central operations, results of its incidental or peripheral transactions, and effects of other events and circumstances stemming from the environment that are often partly or wholly beyond the control of the entity and its management.
>
> 31. Effects of an entity's various activities, transactions, and events differ in stability, risk, and predictability, indicating a need for information about various components of earnings and comprehensive income. That need underlies the distinctions between revenues and gains, between expenses and losses, between various kinds of gains and losses, and between measures found in present practice such as income from continuing operations and net income.

The above comments are particularly useful for FFSC consideration, because of the distinction between "earnings" and "comprehensive income." Earnings are defined as what the entity has received or reasonably expects to receive for its output (revenues) and what it sacrifices to produce and distribute the output (expenses). Earnings also include results of the entity's incidental or peripheral transactions and some effects of other events and circumstances stemming from the environment (gains and losses). Comprehensive income is a broad measure of the effects of transactions and other events on an entity during a period. It comprises all changes in the entity's equity recognized from transactions and other events and circumstances—except those changes resulting from investments by owners and distributions to owners.

For analysis purposes, the FFSC recommends the following: (a) the general income statement format should include a calculation of gross revenues and net farm income, both on an accrual adjusted basis; (b) a charge for unpaid family labor and management *should not* be included on the income statement; and (c) incidental revenue and expenses should be separately reported on the income statement after net farm income. Income from non-farm related sources (wages and personal asset income) should not be shown on the income statement, but reflected on the statement of owner equity (net worth).

STATEMENT OF CASH FLOWS

Recently, there has been substantial discussion by the accounting profession about the format and use of the statement of cash flows. Starting in 1989, GAAP required the inclusion of the statement of cash flows, instead of the statement of changes in financial position, in a complete set of financial statements.

Although not necessarily consistent with the prescribed GAAP format, the historical cash flow statement has been used extensively by agricultural lenders and agricultural producers and is, therefore, a very familiar concept. The decision facing the FFSC was whether to recommend a format for the statement of cash flows that is consistent with GAAP, but somewhat different from the format traditionally used by the agricultural finance community.

The major difference between the two formats is that GAAP requires that cash flow activities resulting from operating, investing, and financing decisions be shown separately. Further, GAAP allows the reporting of cash flows from operating activities using either the direct method (by showing major classes of operating receipts and payments) or the indirect method (by adjusting net income to reconcile it to net cash flow from operating activities). The accounting pronouncements that cover the Statement of Cash Flows "encourage" enterprises to use the direct method. When the direct method is used, a reconciliation of net income and net cash flow from operating activities is required to be provided in a separate schedule. (An example of the direct method and the supporting reconciliation is included in Appendix B).

The individual line items contained in a statement of cash flows prepared in accordance with GAAP using the direct method are consistent with the categories, or groups of categories, found on a typical agricultural cash flow statement. Therefore, we see little theoretical or practical reason to suggest anything other than adoption of the GAAP-consistent format. However, we do not feel the separate schedule reconciling net income to net cash flow from operating activities needs to be prepared when the income statement separately identifies the cash and accrual adjustment components of major revenue and expense items. (An example of this type of income statement is included in Appendix A.)

STATEMENT OF OWNER EQUITY (OR STATEMENT OF NET WORTH)

"Owner equity" and "net worth" are terms often used interchangeably by non-accountants and which mean essentially the same thing — the value of the interests of the owner(s) after subtracting from the value of the assets the total of the claims of creditors. However, the convention generally followed is:

1. Use the term "owner equity" when presenting a statement for only a business enterprise and which statement contains no information for an individual person.

2. Use the term "net worth" when presenting a statement for an individual person or a statement for a business enterprise which also contains information for an individual person.

The format of this statement is driven directly by decisions made in the selection of valuation alternatives on the balance sheet, as well as certain types of non-recurring items that may, or may not, be included in the income statement. It is critical that this statement reconcile the equity amount shown at the beginning of the period with the end of the period.

The statement of owner equity (or statement of net worth plays an especially crucial role when financial statements are not derived from a double-entry accounting system—it serves as a final check on the reasonableness of the numbers.

VALUATION METHODS

The selection of appropriate valuation methods has been the subject of extended debate over the last few years and will probably continue to be for many years to come. Thus, an attempt to clarify the parameters of the debate may be useful before moving into the FFSC recommendations.

In agriculture, we tend to talk about balance sheets as "market value" balance sheets or "cost" balance sheets, implying that a single valuation method was used in calculating each line item on the balance sheet. That, of course, is not true. "Market" balance sheets usually show items such as accounts and notes receivable, investments in cooperatives, and the cash investment in growing crops valued at "cost value"; and "cost" balance sheets usually show marketable securities and grain and livestock inventories valued at estimated market values.

The fact is, *in almost all cases, a balance sheet will be prepared utilizing a variety of valuation methods—the selection is normally based on the nature of the item and the relevance and reliability of the method of accounting for that item.* The different methods give the same value at initial recognition. The most common valuation methods are:

1. *Historical Cost/Historical Proceeds Method*. For an asset: the amount of cash, or its equivalent, paid to acquire the item, commonly adjusted for depreciation or other allocation. For a liability: the amount of cash, or its equivalent, received when the obligation was incurred—sometimes adjusted for amortization or other allocations.

2. *Current Market Value Method*. The amount of cash, or its equivalent, that could be obtained by selling an asset in an orderly liquidation.

3. *Net Realizable Value Method*. The amount of cash, or its equivalent, into which an asset is expected to be converted in the due course of business, less any direct costs necessary to make that conversion.

4. *Discounted Future Cash Flows Method*. For an asset: the present value of future cash inflows into which an asset is expected to be converted in the due course of business, less present values of cash outflows necessary to obtain those inflows. For a liability: the present value of future cash outflows expected to be required to satisfy the liability in the due course of business.

Rather than force the selection of a single method for all valuations, the FFSC feels it is more important to acknowledge that utilization of different methods will continue in practice, and our role is better filled by developing recommendations on how to select the appropriate method.

Finally, as mentioned earlier, the key issues in determining the appropriate method are relevance and reliability. The following comments on these criteria should be useful:

Relevance. To be relevant, information about an item must have feedback value and/or predictive value for users and must be timely. Information is relevant if it has the capacity to make a difference in the decisions of owners, investors, creditors, or other interested parties.

Reliability. To be reliable, information about an item must be representationally faithful, verifiable, and neutral. Information is reliable if it is sufficiently consistent in its representation of the underlying resource, obligation, or effect of events; and sufficiently free of error and bias to be useful to owners, investors, creditors, and others in making decisions.

If two methods are equally relevant and reliable, then the method with the lowest cost to the preparer would probably be chosen.

The major controversy in agriculture arises primarily over the valuation method that should be utilized for capital assets—raised breeding livestock, machinery and equipment, buildings and improvements, and real estate. The three alternatives most often cited are: depreciated historical cost, estimated market value, or a combination of depreciated historical cost and estimated market value.

Proponents of market values cite the following advantages: ease of calculation (since historical cost is often not known or difficult for the farmer to calculate), true representation of the farmer's asset values, and better evaluation of financial position and financial performance. Opponents argue that market values are difficult to estimate accurately, cause net worth or owner equity fluctuations that reflect "unrealized gains or losses" that are only achieved upon liquidation of the capital asset base (and therefore are not consistent with analysis on a "going concern" basis), and force computation of owner equity changes that are, by nature, roughly estimated and possibly temporary.

As stated earlier, the FFSC recommendations require the use of both market and cost values of capital assets. Refer to Appendices A and B for examples of balance sheet formats providing this disclosure. A summary of the FFSC recommendations on asset valuation guidelines is shown below.

ASSET VALUATION GUIDELINES
FFSC RECOMMENDATIONS

	Required Disclosure		
	Cost	**Market**	**Other**
Marketable Securities	Yes	Yes	
Inventories [a]	No	Yes	
PIK Certificates	Yes	Yes	
Accounts Receivable [b]	Yes	No	
Prepaid Expenses	Yes	No	
Cash Investment in Growing Crops	Yes	No	
Purchased Breeding Livestock [c]	Yes	Yes	
Raised Breeding Livestock [c]	Recommended	Yes	Base value if cost not included
Machinery and Equipment [c]	Yes	Yes	
Investments in Capital Leases	Yes	No	
Investments in Cooperatives	No	No	Net equity
Investments in Other Entities	Yes	No	Net equity if enough ownership exists to exert control
Cash Value of Life Insurance	No	Yes	
Retirement Accounts	Yes	Yes	
Other Personal Assets	No	Yes	
Real Estate [c]	Yes	Yes	
Buildings and Improvements [c]	Yes	Yes	

[a] GAAP requires lower of cost or market value except for certain inventories ready for sale.
[b] Less an allowance for doubtful accounts.
[c] Market value information permitted only as supplementary data for GAAP statements.

TREATMENT OF PERSONAL ASSETS/LIABILITIES AND NON-FARM INCOME

Many agricultural operations still retain the characteristics of a small, sole proprietor, family-operated business enterprise. These operations often do not have separate checking accounts for personal and business disbursements, let alone separate recordkeeping systems to segregate fully farm and personal expenses. Providing credit to these operations in most cases involves no legal separation between the operator or the family and the farm business.

As a result of these characteristics, it is currently the most common practice for a sole proprietorship to present farm financial statements which combine personal assets, liabilities, income, and expenses, together with those related to the farm business. However, for many larger proprietorship operations and those operations organized as a corporation, partnership or limited liability company, business-only financial statements are usually provided. Nevertheless, the majority, by number, of farm financial statements combine business and personal assets, liabilities, income and expenses.

Combining business and personal financial statements has obvious implications for financial analysis. It is clearly important for most users of farm financial statements to be able to identify the financial position and financial performance of the farm business apart from personal items, especially if the farm business is looked to for the primary or secondary source of repayment. Measures of earnings from the farm operation should not be distorted by personal interest income or expense, personal investments, or personal debts.

In getting to the core of this issue, it is first necessary to identify those items that are commonly referred to as personal items. Items such as a personal residence, personal vehicles, and household goods are clearly personal assets; other types of assets become more difficult to segregate. For example, if a farmer has substantial amounts of savings or marketable securities, are those items personal or business related? Does the classification change if you know that for one farmer the savings came primarily from a recent inheritance and for another farmer they came from earnings generated by the operation? Does it matter if the savings represent five percent versus twenty-five percent of total assets on the balance sheet? Classification problems, similar to the above, also exist on the liability side of the balance sheet. For example, most credit card balances and certain other payables can clearly be classified as personal; yet it is not unusual for education expenses, vacations, or other personal expenditures, as well as business expenditures, to be financed by the operating note. Finally, if twenty percent of the income tax liability at the end of the year is generated by off-farm income, must that portion of the liability be calculated and removed from a business-only balance sheet?

Certain personal income and expense items have characteristics that make segregation difficult. In the past, there was a tendency to separately report off-farm wages on the income statement, while not separately showing personal expenses. Rather, these personal expenses were included with owner withdrawals. Additional items that cause problems relate to changes in the cash value of life insurance and earnings from retirement accounts. Since these items are usually not intended to supplement the earning capacity of the farm, it would seem somewhat tenuous to include them in a measure of overall earnings.

Recognizing the difficulty of this issue, the FFSC offers the following recommendations:

1. It is preferable to have separate financial statements for business and personal items. Separating business assets from the personal assets better facilitates farm business analysis.

2. The FFSC acknowledges that in certain cases involving smaller operations, combined business and personal financial statements will continue to be used by lenders and others. When such statements are utilized, the FFSC recommends the following:

    a. The amount of total personal assets and the amount of total personal liabilities should each be separately identified on the balance sheet below the total business assets and total business liabilities, and may be supported by a schedule. Since the schedule is of personal assets and personal liabilities only, classification as to current and non-current is not useful—assets should be listed in the order of their liquidity and liabilities in the order of their maturity.

    b. Commingling of personal and business assets into single line items on the balance sheet can seriously interfere with analysis of the farm business, and is strongly discouraged.

    c. Even in combined financial statements, the income statement is designed to reflect the results of business operations. Therefore, wages from off-farm employment as well as income from personal assets are not appropriately reflected on the income statement. They should be shown as additions to capital on the statement of owner equity (net worth).

    d. If the provision for income taxes can be effectively allocated between the portion relating to business operations and the portion relating to wages and personal asset income, it is acceptable to reflect the business portion of the income tax provision on the income statement of the business. The portion related to wages and personal asset income should be shown on the statement of owner equity (net worth) as a reduction of capital. If segregation of the provision for income taxes into business and personal components is not possible, the entire provision should be reflected on the statement of owner equity (net worth) and not on the income statement of the business.

GROSS REVENUE VS. VALUE OF FARM PRODUCTION

There was considerable discussion and debate among the FFSC members about the utilization of the "Value of Farm Production" (VFP) measure on the income statement. The VFP approach is widely used in certain parts of the country and with certain types of operations and not used at all in other regions. Those who oppose the VFP concept suggest that a more traditional revenue/expense format for the income statement is appropriate.

Value of Farm Production. VFP is a term that is unique to farm earnings statements. It was developed in an effort to provide a value-added measure and a better means of comparing two operations than total gross revenue. Basically, it is computed as the gross revenues of an operation less the purchases of assets that are included in the calculation of gross revenue. An example is purchased feed, since the change in feed inventory is a normal accrual adjustment. Accountants might first think that these items represent the cost of goods sold, but, in fact, the deductions from gross revenue usually include only the purchase cost of materials and almost never include any direct labor or overhead.

Further, VFP is a measure based on market value, since most of the gross revenues include a component for the change in the market value of held inventories.

Traditionally, gross revenues included revenues (cash sales, inventory and receivable changes) from crops, livestock products, government program payments, and other farm income. Deductions from this amount were made for the purchase cost, primarily of two items—feeder livestock and purchased feed—to arrive at VFP. If breeding livestock were handled as an inventory item, then purchases of breeding animals were also deducted to arrive at VFP.

Advantages of VFP:

1. VFP provides an overall measure of production that is not distorted by purchases of inventory late in the operating cycle. For example, a cattle feeder purchased $100,000 of feeder cattle on December 31. This transaction, because of the practice of arriving at gross revenues by adjusting cash sales by the change in inventory at market, would result in a $100,000 increase in revenue, even though the newly purchased cattle would have just entered the operating cycle of the operation. Since VFP reduces gross revenue by the cost of purchased feeder cattle, VFP for this operation would not be affected by the late inventory purchase. This type of distortion is also applicable to purchases of feed, as well as purchases of grain related to CCC loan redemption.

2. VFP allows for more accurate comparisons between certain types of operations. The most common example is a comparison of a cow-calf operator who feeds out all livestock versus a feeder operator who buys feeder livestock and feeds them to market weight. Assuming both operations sold the same dollar amount of cattle, they would have the same level of gross revenue. The cow-calf operator, however, would have much higher operating expenses, such as labor, depreciation, utilities, etc., because that operation is growing its product from birth rather than from a weight of 500-700 pounds. Therefore, in evaluating ratios such as asset turnover or other efficiency measures, VFP proponents argue that the VFP measure provides a better measure for comparison than does gross revenue, because the cow-calf operator would have a substantially higher VFP than the feeder operator.

Disadvantages of VFP:

1. VFP tends to be inconsistently defined among various users of the approach. Some users deduct only the cost of feeder livestock to arrive at VFP, others deduct both feeder livestock and purchased feed, and still others define an even broader range of deductible items.

2. VFP is often misconstrued as a true "value-added" measure. While it may initially have been intended for that purpose, it rarely provides a true measure of "value added" by the operation. Finally, it is an incomplete attempt to arrive at a "gross margin" type of measure for the operation — incomplete because it includes only a small portion of the expenses that would be included in a traditional "cost of goods sold" classification.

Gross Revenues. There were a number of FFSC members who argued that the income statement should reflect only a "gross revenues" amount and then a categorization of all operating expenses, including the purchase of "items for resale," such as market livestock, feed, and grain. Proponents of this position maintain that the interim calculation of VFP does not add substantially to the usefulness of the income statement, and, in some cases (the livestock producer who buys all feed, for example), tends to underestimate the basic productive capacity of the operation. While they acknowledge the usefulness of the VFP measure for comparing certain types of farms (the cow-calf and feeder

example provided above, for example), they argue that, in the few cases where this type of comparison is actually necessary, the calculation could easily be performed from information on the income statement.

FFSC Recommendation. The FFSC believes that the issue of whether to provide, in the income statement, an interim calculation of VFP is primarily an issue of formatting because a single income statement, which has been formatted either to show only gross revenue or to also show VFP, will present the same amount of gross revenue and the same amount of net farm income.

The FFSC generally believes that the Gross Revenue approach to presenting the income statement should and will evolve as the accepted method for income statement reporting and as the basis for calculating measures of financial performance to be included in any national agricultural financial data base. This conclusion is reached because of the potential for greater acceptance by the accounting profession.

The FFSC recognizes, however, that for certain types of operations, VFP has merit as an analytical technique for evaluating the financial performance of the business. Further, many existing data bases, especially those associated with the various state Farm Business Analysis Associations, utilize VFP.

Therefore, the FFSC maintains its present position of continuing to recognize both the Gross Revenue and VFP approaches.

If the FFSC eventually adopts the Gross Revenue approach as its preferred format, these guidelines should continue to include a formal definition of VFP because of its potential analytical value. In addition, it is recommended that even under the Gross Revenue approach, that feeder livestock purchased for resale and purchased feed should continue to be separately identified among the operating expenses and that purchased items to be consumed as inputs in the production process be listed separately in the asset section of the balance sheet so that VFP could be calculated.

Including a calculation of VFP in the income statement is at the discretion of the preparer of the financial statements, as long as the following conditions are met:

1. If VFP is shown on the accrual adjusted income statement, items deducted from gross revenue to arrive at VFP should include:

    a. Cost of purchased livestock/poultry for resale, ± the change in inventories of purchased livestock/poultry; and

    b. Cost of purchased feed and grain, ± the change in inventories of purchased feedstuff.

    Caution: When calculating VFP, care must be taken to avoid double counting any inventory items being deducted from the gross revenues.

2. If VFP is not shown on the accrual adjusted income statement, the expenses relating to the cost of purchased feed and grain and cost of purchased livestock/poultry for resale should be identified separately from other operating expenses on the income statement.

NET FARM INCOME

Net Farm Income (NFI) is probably the most critical measurement found on the income statement. It is designed to provide key information about the results of operating activities over a period of time. However, the unique characteristics of family operated farms require discussion.

On most small (and many medium-sized) farming operations, a substantial amount of the labor resource is provided by the farm family. Furthermore, unless the operation is organized as a corporation, family members are usually not compensated on a set wage basis—they withdraw money as needed to meet family living and other personal expenses. Their withdrawals often bear little if any relationship to the economic value of the labor and management they are providing to the operation. Such withdrawals are not shown on the income statement, nor are any accruals for unpaid family labor. Instead, on a cash basis, withdrawals are shown as deductions from capital.

Because of this problem, in the past, farm income statements have not included a charge for "operator and unpaid family labor and management." Rather, the net farm income number has been characterized as the return to unpaid labor, management, and equity capital. This approach causes two particular problems:

1. **Non-comparability**. NFI calculated from income statements prepared for corporations, partnerships, and other entities, where family members are paid a wage, are not comparable to NFI calculated from income statements prepared for sole proprietorships where no wage was paid for family labor.

2. **Inconsistent allocations**. In order to arrive at a return to the business assets (ROA) or a return to owner equity (ROE), the user of the financial statements is forced to allocate a charge to labor and management. It would seem that the preparer, or the farm operator, is in a better position to make that allocation than the user of the statement.

While these problems represent serious drawbacks in the approach, the possible alternatives are also troublesome. Even where wages are charged on the earnings statement of a family-owned corporation, there is always the question of whether or not those wages represent true economic measures of the resources employed. Without the intervention of outside stockholders or a regulatory authority, there is little incentive to make those numbers any more realistic than the total withdrawn might be for a farm where the unpaid labor concept is utilized.

Another issue relates to whether net farm income should include gains or losses from the disposal of capital assets (other than normal culling of breeding stock, which the FFSC recommends be included in gross revenues, and therefore is definitely included in NFI). Those who argue for inclusion of these gains and losses suggest that, while they are often large in amount and sporadic in occurrence, they do result from the operation of the farm business and should be included in a measure of NFI. Since these gains and losses would be separately identified, the reader of the statements would be able to determine an earnings number *before* NFI from the information available. Those who argue for calculation of NFI *before* the inclusion of gains or losses on capital sales suggest that the critical use for the NFI number is to analyze the operating results of the business from "normal operations," and that this number would logically not include one-time capital gains or losses. Further, since it is so commonly used for analysis purposes, it should be available directly from the earnings statement.

Thus, for the purpose of analysis, the FFSC recommends the following on the issue of NFI:

1. NFI will continue to be defined as the return to operator and unpaid family labor, management, and equity capital. No estimate of a charge for unpaid labor and management should be included on the income statement.

2. NFI should include all gains and losses from disposal of farm capital assets, unless those gains or losses qualify as an extraordinary item. In order to be an extraordinary item, the transaction should be:

   a. *Unusual in nature*. The underlying event possesses a high degree of abnormality, and is of a type clearly not related to, or only incidentally related to, the ordinary and typical activities of the enterprise.

   b. *Infrequent in occurrence.* The underlying event is of a type that would not reasonably be expected to recur in the foreseeable future, taking into account the environment in which the enterprise operates.

   It is important to note that to be considered an extraordinary item, the transaction or event must meet both of the criteria. The accounting literature also provides examples and additional guidance in this area. Write-downs of receivables, intangible assets, or inventories and gains or losses from sale or abandonment of property or equipment used in the business are not extraordinary items because they are usual in nature and may be expected to recur. The accounting literature also identifies three specific items that should be reported as extraordinary items even though they may not exactly meet the criteria specified above. The only one of those items applicable to farm statements would be gains or losses from extinguishment of debt.

3. If the preparer or farmer feels it is informative, it is acceptable to provide a subtotal calculating net farm income before disposal of capital assets.

OWNER WITHDRAWALS

Historically, the term "family living withdrawals" has been widely used in connection with farming operations that were organized other than as a corporation. Since no "wages" were paid to the operator and other members of the family, distributions from the business to cover family living and other personal expenses were generally referred to as "family living withdrawals". These withdrawals are typically shown in the statement of owner equity and not on the income statement. For calculation of certain types of financial measures, it is necessary to estimate the value of unpaid operator and family labor and management. The FFSC acknowledged in the 1991 Report, that in many cases, it would be reasonable to utilize the amount of family living withdrawals as an estimate of the value of unpaid labor and management.

In addition, there has historically been a distinction drawn between gross family living withdrawals—the total amount of cash or equivalent taken from the operation—and net family living withdrawals—gross withdrawals plus or minus the change in value of personal assets and liabilities shown on the balance sheet. Since the FFSC recommended in the 1991 Report that equity changes due to changes in values of personal assets and liabilities be a separate line item in the statement of owner equity, there should be no difference between the gross family living withdrawal reported on the statement of cash flows and the net family living withdrawal traditionally included in the statement of owner equity. Therefore, this labeling distinction was no longer necessary.

As part of the extensive analysis and discussion of personal assets and liabilities and non-farm income that was undertaken in the generation of this revised Report, additional terminology and consistency problems were raised with the usage of the term "family living withdrawals". Therefore, the FFSC has the following recommendations relating to the treatment of owner withdrawals.

1. It is common for owners of non-corporate entities to make periodic distributions from the business to cover family living expenses, personal taxes, purchase of personal assets, and other non-farm items. However, to distinguish when these withdrawals are for "family living" versus other legitimate withdrawals of capital from the business seems to be a time-consuming task of limited usefulness for purposes of analysis. Therefore, the FFSC recommends that the term "family living withdrawals" no longer be utilized.

2. The distinction that is important for analytical purposes is whether the amount of owner withdrawals, notwithstanding whether it is for family living or other purposes, represents a reasonable estimate of the value of unpaid operator and family labor and management. Further, this distinction can be easily determined by the owner. **The FFSC recommends that distributions up to the estimated value of the unpaid labor and management should be reported on the statement of owner equity under a caption such as "Owner Withdrawals for Unpaid Labor and Management", and can be shown separately or netted with non-farm income contributed to the farm business on the statement of cash flows. Any distributions in excess of the estimated value of unpaid labor and management should be shown on the statement of owner equity and the statement of cash flows under a caption such as "Other Distributions".**

   Treatment on the Statement of Cash Flows of the amount of owner withdrawals equal to or less than the estimated value of labor and management is a more difficult issue (amounts in excess of the estimated value of unpaid labor and management should clearly be included as a distribution in the financing activity section of the Statement of Cash Flows). Many analysts would argue that this amount should be shown in the operating activity section of the Statement of Cash Flows in order to achieve comparability between those operations utilizing paid labor and recording such labor cost as an expense and those operations where the labor of the owner is not recorded as an expense. Others would argue that this amount is somewhat discretionary on the part of the owner, and is closely related to the amount of non-farm income and other distributions available to the owner. They would support the position that all owner withdrawals should be shown in the financing activity section of the Statement of Cash Flows.

   The FFSC recognizes that both positions have merit. The FFSC believes that most owners and analysts will eventually move to support the position of including all owner withdrawals in the financing activity section of the Statement of Cash Flows. However, either treatment is acceptable so long as it is clearly disclosed.

3. The decision by the FFSC to recommend that non-farm income such as wages and income from personal assets be removed from the income statement and shown on the statement of cash flows (financing section) and on the statement of owner equity as a contribution of capital will likely result in many analysts focusing on the net amount of withdrawals for unpaid labor and management less non-farm income. **To the extent that these two numbers are netted together, the FFSC recommends that the amount be referred to as "Owner Withdrawals (net)".** This amount represents the amount of capital withdrawn for unpaid

labor and management net of any contribution from non-farm income. The example financial statements included in Appendix A illustrate this treatment in the statement of owner equity.

INCOME TAXES

Because agricultural producers are allowed to use the cash method for calculating taxable income, there are inevitably numerous differences between taxable income and accrual adjusted income in the same period. Currently, very few farm financial statements are prepared that recognize the impact these differences have on income tax liability, earnings, and owner equity.

The calculation of income taxes on the accrual adjusted income statement is most commonly shown as either the actual cash taxes paid or actual cash taxes paid adjusted for the change in taxes payable or receivable on the balance sheet. Although adjusting actual cash taxes paid for changes in taxes payable or receivable is an "accrual adjustment," it is adjusting the income tax expense calculated on a cash basis if the farmer is filing taxes using that method. Therefore, the income tax expense, even though it has been adjusted for changes in the taxes payable or receivable, does not relate to the accrual adjusted net farm income or net income number shown on the accrual adjusted income statement. In virtually no cases today are farm financial statements attempting to show the tax liability/asset that relates to the accrual adjusted income shown on the accrual adjusted income statement. This omission may result in a material misstatement of the financial position and/or financial performance of the agricultural producer.

Example: Assume that an agricultural producer normally has an annual income tax expense of $11,880 (based on an average taxable income of $36,000 and a total tax rate [federal, state, local, and Social Security] of 33%). In the most recent year, he conducted his agricultural operations exactly the same way as in the past, except that he held over and sold $40,000 of raised inventory in January 'X2 instead of selling that raised inventory in December, 'X1. Thus, taxable income for year 'X1 was lowered by $40,000 resulting in a loss of $4,000 ($36,000 less $40,000) rather than the $36,000 profit earned on average in the past years, thereby resulting in zero tax liability for the year 'X1. His accrual adjusted net farm income would still be $36,000, because it is unaffected by the decision to hold raised inventory for sale in the next year.

If we use the common practice of adjusting the net after-tax income by changes in raised inventories, the after tax income would be increased by $40,000 (which is the value of raised inventories carried over from 'X1 that have not been carried over in the past). However, this $40,000 fails to reflect the income tax expense that would be due on the sale of that $40,000 of raised inventory. In this example the associated income tax expense would be $11,880 ([-$4,000 + $40,000] × 0.33). Therefore the accrual adjusted, after-tax net income would be calculated to be $36,000 (because, in the common practice, the actual tax paid of $0 is used when making the accrual adjustment) rather than the more correct amount of $24,120 after giving effect to the $11,880 deferred tax liability.

Most analysts would agree that the practice shown in this example creates a significant distortion of the farmer's after-tax net income, and that, in fact, the tax liability associated with the $40,000 of raised inventory has been incurred and should be reflected on the balance sheet and income statement.

The utilization of market value amounts for capital assets on the balance sheet poses a somewhat similar problem. If a farmer shows one hundred acres of debt-free real estate on the balance sheet at $100,000 (i.e., market value), then that asset is the source of $100,000 of equity. However, if the farmer only paid $30,000 (i.e., cost basis) for the one hundred acres, a substantial tax liability would be incurred if the one hundred acres were sold at the value shown on the balance sheet. Therefore, the asset really *is not* the source of $100,000 of equity—the true addition to equity would be $100,000 less the income tax that would be due if the one hundred acres were sold for that amount. (The income tax due on the sale of the 100 acres is sometimes referred to as a contingent tax liability.)

Since the change in the market values of capital assets is not normally reflected on the accrual adjusted income statement, the change in the deferred tax liability due to these market value changes would also not be shown on the accrual adjusted income statement. However, when a market value balance sheet is prepared, this amount (i.e., the change in the deferred tax liability due to market value changes) would be included in the statement of owner equity (on the market value balance sheet) as a change in valuation equity.

The FFSC recommendations, for analytical purposes, are as follows:

1. Farm financial statements should be prepared with recognition given to the income tax liability arising from differences between (a) balance sheet values of certain assets and liabilities and (b) the tax basis of these same assets and liabilities. Such income tax liabilities are commonly called deferred taxes.

2. While the FFSC encourages all financial statement preparers to become familiar with the details of GAAP accounting for income taxes, and use the various FASB statements regarding income taxes as the guideline for computing deferred taxes, we also recognize that such an objective is not achievable in the near term.

   Deferred tax liabilities simply reconcile the tax basis (i.e., values used for calculating income on which taxes have already been paid) of a balance sheet with whatever other basis is now being used for valuing assets and recording liabilities. Stated another way: if all assets could be liquidated for exactly the amount shown on the balance sheet, and if all liabilities could be satisfied by payment of exactly the amount shown on the balance sheet, (a) how much taxable income would result, and (b) what would be the tax liability related thereto?

   From the foregoing, it follows that the suggested four-step procedure for calculating both current and non-current tax liabilities and/or tax assets is applicable to reconcile to the tax basis of the balance sheet, regardless of whether the balance sheet being prepared is cost basis, market basis, or some combination thereof.

   Step 1: For current portion of deferred taxes.

   (a) Calculate the total amount by which the balance sheet value of current assets exceeds their taxable basis. Basically, this calculation will involve the following items for an agricultural producer maintaining accounting records on a cash basis: 1) inventories of crops, feed, feeder livestock, and livestock products; 2) accounts receivable; 3) cash investment in growing crops and prepaid expenses; and 4) unrealized gains on PIK certificates, and hedging accounts.

(b) Calculate the amount of income that has been reported for financial statement purposes but not for tax purposes and for which no asset exists on the tax basis balance sheet. The most common example would be crop insurance proceeds.

(c) Calculate the total amount of current liabilities shown on the balance sheet that, when they are paid, will result in deductions for tax purposes. The most common items would be accounts payable, accrued interest, all accrued non-federal income taxes, and other accrued expenses.

(d) Subtract the total in (c) from the total of (a) plus (b). Multiply the difference by an estimated total tax rate for the agricultural producer. This estimated total rate should reflect federal, state, local, and Social Security taxing authorities. Social Security should be considered only if taxable income is consistently below the FICA maximum, and then only to the extent that the difference is likely to be subject to self-employment taxes.

The result is the *current portion of deferred taxes.* It should be shown in the current liability section of the balance sheet, and the change in this amount from last period should be shown as part of the income tax calculation on the accrual adjusted income statement.

Step 2: For non-current portion of deferred taxes related to base value treatment of raised breeding livestock and certain installment notes receivable.

(a) For raised breeding livestock which **have not been** capitalized and depreciated for tax purposes, calculate the difference between the balance sheet value (whether using cost or a base value) and the tax basis.

Remember, if the raised breeding livestock have not been capitalized and depreciated for purposes of calculating taxable, cash basis income, the tax basis will be zero ($0).

(b) For notes receivable related to installment sales where the entire gain or loss was reported (for tax purposes) in the year of the sale, calculate the difference between the balance sheet value and the tax basis of the installment sale receivable.

(c) Multiply the sum of (a) plus (b) by an estimated total tax rate for the farmer. This estimated total rate should reflect federal, state, local, and Social Security taxing authorities. Social Security should be considered only if taxable income is consistently below the FICA maximum, and then only to the extent that the difference is likely to be subject to self-employment taxes.

The result is the *non-current portion of deferred taxes related to base value treatment of raised breeding livestock and certain installment notes receivable.* It should be shown in the non-current liability section of the balance sheet, and the change in this amount from last period should be shown as part of the income tax calculation on the accrual adjusted income statement.

Step 3: For non-current portion of deferred taxes related to differences between market values and tax basis or base value of non-current assets — Necessary only if a market value balance sheet is prepared.

(a) Calculate the difference between the balance sheet values of all non-current assets (other than raised breeding livestock) and their tax basis. In most cases this calculation would be limited to purchased breeding livestock, investments in other entities, machinery and equipment, real estate, buildings, and improvements.

(b) The FFSC recommends that, for analytical purposes, an agricultural producer should either (i) capitalize the costs of raising the breeding livestock and depreciate those costs over the useful life of the livestock, or (ii) utilize a "base value" approach for reporting values. To the extent that the balance sheet value (either "cost" or "base value") of raised breeding livestock is different from the tax basis of the raised breeding livestock, the difference was calculated in part (a) of Step 2 above, and the resulting deferred income tax liability included in the non-current portion of deferred taxes.

However, if a market value balance sheet is being prepared, the procedure for calculating the deferred taxes must be modified slightly. Remember, in part (a) of Step 2 above, the current portion of deferred tax liability was calculated for the difference between tax basis (or $0) and cost/base value.

Now, it is necessary to calculate the difference between the balance sheet value (if now using market value) of the raised breeding livestock and either (i) the cost less accumulated depreciation or (ii) the base value of the raised breeding livestock (whichever method the agricultural producer has chosen to use). This difference in balance sheet values represents the remaining value on the market value balance sheet (that was not already included in part (a) of Step 2) for which a corresponding deferred tax liability has not yet been calculated.

(c) Calculate the amount of non-current liabilities shown on the balance sheet that would result in a deduction for income tax purposes when they are paid. (This type of liability is usually not found on a farm balance sheet).

(d) Subtract (c) from the total of (a) plus (b). Multiply the difference by the farmer's estimated tax rate for capital asset sales.

The result is the remaining amount of the *non-current portion of deferred taxes*. It should be added to the amount calculated in Step 2 above and shown in the non-current liability section of the balance sheet, and the change in this amount should be shown in the statement of owner equity as a part of the change in valuation equity. As mentioned earlier in this section, the change in this component of non-current deferred taxes is not reflected as part of the income tax calculation on the accrual adjusted income statement. Note that this amount will be non-zero only if market valuation is used for capital assets.

Step 4: Deferred tax assets.

> If the difference calculated in Step 1(d), Step 2(c), or Step 3(d) is negative, it means that liquidation of the assets and liabilities shown on the agricultural producer's balance sheet would result in negative taxable income. Thus, a deferred tax refund rather than a deferred tax liability is shown on the balance sheet. When this result occurs, *a deferred tax asset should be shown on the balance sheet only to the extent that, based on available evidence, the deferred tax asset is expected to be realized at some future date.*

3. The foregoing four step approach is not consistent with GAAP. Nonetheless, this approach is reasonably easy to understand and calculate, and it provides financial information, in both the balance sheet and the income statement, which is much more meaningful than if the deferred tax liability were ignored.

4. The *contingent tax* approach utilized in some financial statement forms is similar to the balance sheet treatment of the four step approach outlined above. However, the contingent tax approach does not require segregation of the current portion of the deferred tax liability nor the inclusion of the change in that amount in the income statement.

Reporting the provisions for income taxes as well as the liabilities for income taxes payable and the current and non-current portion of deferred taxes depends on the type of entity for which financial statements are prepared. Because partnerships, S-Corporations, and limited liability companies are "pass-through" entities, they do not have liability for federal income taxes. Therefore, income statements for these types of entities do not include a provision for income taxes, and balance sheets do not include income tax liabilities. Instead, the tax liability amounts are shown on the personal financial statements of the owner(s). Similarly, financial statements prepared for a sole proprietorship usually contain neither a provision for income tax on the income statement or income tax liabilities on the balance sheet, because the owner, rather than the proprietorship, is deemed to be liable for the payment of federal income taxes.

The amount of income tax expense and the liabilities for income taxes that relate to a particular entity or business operation are very important for analytical purposes. Further, the FFSC feels that in many farm operations these amounts can be reasonably estimated, especially when the non-farm activities of the owner(s) are limited. Therefore, when an owner or analyst is preparing financial statements for a farm operation organized as a sole proprietorship, partnership, S-corporation, or limited liability company and the personal financial statements of the owner(s) will not be available as a separate statement, it is recommended to include an estimate of the provision for income taxes on the income statement and estimated liabilities for income taxes payable and the current and non-current portions of deferred taxes on the balance sheet, when there is a reasonable basis for such calculation. If both business and personal assets are presented in appropriately segregated sections of a "combined" balance sheet, the corresponding income statement should only include an adjustment for income taxes when the amount of income tax attributable to the farm business can be reasonably estimated. In that case, the business portion of the provision for income taxes should be shown on the income statement and the personal portion shown on the statement of owner equity. If such an allocation cannot be made, the entire provision for income taxes should be shown on the statement of owner equity. Finally, if the owners have significant other business interest, personal assets, or other characteristics that make it difficult or impossible to estimate these amounts, then a personal financial statement should be obtained and no amounts for taxes shown on the farm business financial statements.

DEFINITION OF MARKET VALUE

Because of the predominance of balance sheets prepared using the market value approach for valuing capital assets, the FFSC decided to review and discuss an appropriate definition for this approach. The result was that a substantial majority of respondents favored defining market value as fair market value less selling costs rather than simply fair market value. For analysis purposes, the FFSC recommends, where capital assets are shown on a balance sheet at "market value," that market value be computed as fair market value less normal selling costs. Finally, the financial statements should include a footnote identifying the source for the estimate of market value: such as appraisal, auction, farmer estimate, etc.; and the estimate of selling costs.

DEPRECIATION

Depreciation, which is the allocation of the expense that reflects the "using up" of certain business assets employed by the entity, is subject to a number of different calculation approaches. GAAP recommends a book value method, which is the recommendation of these financial guidelines. Conceptually, this allocation is done over the useful life of the asset in a "systematic and rational" manner. Any difference between the net book value (original cost or other basis less the total of depreciation charged) and the actual value of the asset is not recognized until the asset is sold, and then it is shown as a gain or loss on disposal. A perfect depreciation method would result in the net book value of the asset being exactly equal to the market value of the asset at any time during its useful life. Although there are many alternative depreciation methods, it is very rare to achieve a zero gain or loss on disposal.

Agricultural operations may have substantial financial resources invested in four major types of depreciable assets:

1. Breeding livestock, that may be either purchased or raised;
2. Perennial crop development, such as vineyards, orchards, etc.;
3. Machinery and equipment; and
4. Buildings and real estate improvements.

Each category of asset has some unique issues related to depreciation. The remainder of this section will deal with the final two categories. Breeding livestock and perennial crop issues are discussed in separate sections.

Conceptually, in order to calculate the amount of depreciation that should be charged to earnings during any period of an asset's useful life, the following information is needed:

1. The original cost or other original basis that was used to reflect the value of the asset at the time it was put into service.
2. The depreciation method that will be used to determine how much of the asset was "used up" during the period. (Straight line methods result in an equal amount being charged each period, accelerated methods result in more being charged in the early part of the asset's useful life, and piece-rate methods result in the charge being directly related to the amount the asset was used during the period.)
3. The salvage value of the asset, which is an estimate of what the asset will be worth at the end of its useful life.

For example, if a tractor costing $50,000 was determined to have a seven-year useful life and an $8,000 salvage value at the end of the seven-year period, a straight line depreciation method would result in a depreciation charge on the tractor of $6,000 per year ([$50,000 minus $8,000 equals $42,000], divided by seven years).

Because of the capital-intensive nature of farm operations, depreciation expense is often a very significant item on the income statement. Further, merely the selection of different depreciation methods can have substantial effects on the earnings of two identical operations in any given year (over the long term, they will have the same earnings).

Tax Depreciation Methods. Because of the limitations of farm accounting systems, many analysts of farm financial statements have utilized depreciation methods used for tax purposes as the basis of the depreciation charge. At times this has resulted in a reasonable or at least acceptable estimate of depreciation expense for financial analysis. Unfortunately, there have been periods when very accelerated depreciation methods were allowed for tax purposes. These accelerated methods skew depreciation expense towards the initial part of the useful life and often allow estimates of useful life that are far removed from reality. Utilization of tax depreciation often results in an overstatement of the true economic cost of the depreciation of business assets and an understatement of earnings in the year of purchase and immediately after. Further, depreciation expense is significantly overstated and earnings significantly understated in any year involving a major purchase. (In the long run, however, cumulative reported earnings would be the same as would be reported using a more accurate depreciation method.) Other problems with use of tax depreciation methods for business analysis include:

- With most tax-based depreciation methods no salvage value is utilized. This often results in a very aggressive charge against earnings for depreciable asset use. This results in an understatement of earnings that could be substantial on operations with significant machinery and equipment utilization.

- Accelerated depreciation methods on smaller operations can cause significant “swings” in depreciation expense from year to year and similar fluctuation in earnings.

- Tax based depreciation methods are inconsistent with FFSC Management Accounting recommendations.

Market-Based Depreciation Methods. Because they considered tax-basis depreciation to be misleading, and because most agricultural producers were unwilling or unable to keep a separate record of depreciation for financial statement purposes, many lenders moved to a “market-based” approach of estimating depreciation expense. This method, utilized for machinery and equipment and buildings and improvements, estimates the current market value of the asset and then allocates a percentage charge for depreciation during the period. For example, if the market value of machinery and equipment on a farmer’s balance sheet was $200,000 at the beginning of the year, then ten percent or $20,000 would be used as the amount of depreciation expense. This method, although easy to use, has a number of significant problems, including:

- This approach bears no relation to the original cost of the asset. Therefore, in periods of rising equipment costs or optimistic asset valuations, it would be possible for the amount of total depreciation expense charged to be significantly more than the amount paid for the asset. While some argue that this allows for the build-up of working capital to replace the asset at the inflated price (which is true), it is implicitly making judgments about future economic

conditions, asset purchasing patterns, and asset utilization. While those judgments are certainly appropriate for an analyst, they should be reserved for the repayment analysis and not reflected in the financial statements when a much more certain amount (i.e., original cost) is available.

- In periods of rapid devaluation of assets, it would be possible to understate substantially the amount of depreciation. Since market value is the starting point for this depreciation calculation, any decline in market value from the previous year-end would not flow through the income statement. Accordingly, the depreciation change for the year could be understated to the extent the lower market value, when multiplied by the "standard" or "rule of thumb" percentage being used, produced a result that was lower than the true, economic depreciation of the business assets in that year.

- This approach aggregates machinery and equipment without allocating market values to individual assets. While simplicity of use is one of the most common reasons cited for adoption of this method, full financial statement analysis is possible only if individual asset records are kept that track the cumulative amount of depreciation charged for each asset. It is only with that information that an accurate gain or loss on disposal can be calculated. Since this information is usually not obtained, it is impossible to calculate a true net farm income or a retained earnings component of equity.

Book Depreciation Methods. Book depreciation methods depreciate assets over the useful life of the asset within the business and employ salvage values that estimate the value of an asset at the end of its useful life in the business. Any depreciation method can be used that reasonably expenses the original cost or other basis of the asset over the time that it is expected to be used by the owner. A discussion of book depreciation methods is beyond the scope of these financial guidelines. However, information on book depreciation methods can be found in most accounting textbooks. Users of these guidelines are encouraged to learn more about book depreciation methods and producers are encouraged to implement these methods for their operation.

Any system of accounting for depreciation must satisfy the definition: an allocation over time of the historical cost (or original cost), less salvage value, of a business asset having a limited useful life (i.e. machinery, buildings, purchased breeding livestock, etc.) by a noncash expense *periodically charged against income over the service, or useful life, of that asset in a rational and systematic manner.*

The FFSC conclusions and recommendations are:

1. The FFSC encourages producers to adopt book depreciation methods with appropriate useful lives and salvage values for the most accurate allocation of the purchase price of a depreciable asset over its useful life.

2. Depreciation expense is a significant component of total expense on most farm operations, and it is therefore important that it be treated in a manner that will provide results that are as consistent as possible and that allow for reasonable comparative analysis. No depreciation method is perfect, and it is important to note that depreciation is a method of allocation, not of valuation. Generally, methods which follow the "market-based" approach described above will not result in numbers that are consistent or comparable, and should not be used.

3. Depreciation expensing for specific assets may change as business plans change for the useful life and/or the expected salvage value of the asset.

4. The depreciation method utilized in preparing the financial statement should be clearly disclosed, either by identifying the method or by including supplementary schedules detailing the calculation.

TREATMENT OF INVENTORY ITEMS (OTHER THAN BREEDING LIVESTOCK)

Treatment of inventory items (other than breeding livestock) involves two separate issues. The first issue is how purchased inventories should be valued. The second issue is where the adjustments for changes in the amount/value of inventories should be shown on the income statement.

In general, GAAP requires that inventories be valued at cost, except when the market value of the goods is less than their cost, in which case, inventories should be valued at their market value (i.e., the lower of cost or market). In this context, inventories include finished goods, work-in-progress, and raw materials.

However, the AICPA Audit and Accounting Guide makes an exception to the cost method for agricultural producers. For inventories of harvested crops and livestock held for sale, agricultural producers may value those inventories at their current market value less cost of disposal (i.e., net realizable value) when **all** of the following conditions exist:

1. Reliable, readily determinable, and realizable market price,
2. Relatively insignificant and predictable costs of disposal, and
3. Available for immediate delivery.

The foregoing criteria for valuation at market value less cost of disposal is straightforward and clearly excludes developing animals as well as specialty crops that have an uncertain market demand, an uncertain market price, and/or significant disposal costs. Against this background, it is useful to segregate the discussion of inventories into four categories:

A. **Inventories Raised/Harvested for Sale.** This category includes inventories of harvested crops and raised livestock which are held for sale that clearly meet the criteria cited by the Audit Guide for valuation at net realizable value. Included in this category would be most traditional grain inventories not intended to be used for feed requirements; specialty crops for which the tests for market price and disposal cost can be met; and market livestock, but not including "developing" livestock or livestock being retained for breeding purposes.

B. **Inventories Raised/Harvested to be Used in the Production Process.** This category includes inventories of harvested crops that do not meet the criteria for valuation using net realizable value. This category of harvested crops would include all raised feedstuffs (crops to be fed). Although these may be the same kinds of crops as included in Category A, because these crops are intended to be fed and are not intended to be sold, they do not meet the criteria for valuation at net realizable value.

C. **Inventories Purchased for Resale.** This category includes those items that agricultural producers purchase as either "raw materials" (primarily feeder animals and feedstuffs) or as finished goods (e.g., corn purchases for PIK and Roll, vegetables a grower buys in order to fulfill contract requirements, etc.). This category of inventories could consist of some

purchased and some raised agricultural products which might be commingled and thus would result in an additional record keeping burden to require a valuation at the lower of cost or market. For inventories of items purchased for resale, there are conceptually two subcategories:

1. Those items (such as feeder livestock, and harvested crops, etc.) which are actually purchased with the intention of being resold in the same form (although the feeder livestock would be heavier when finally sold).
2. Those items, primarily feedstuffs, that are not purchased with the intent of being resold, but instead are intended to be consumed as an input in producing another item that will eventually be sold (e.g., feedstuffs that will be consumed by finishing livestock or that will be converted into milk, eggs, or other products); however, these purchased items could be resold in the same form as they were originally purchased.

D. **Inventories Purchased for Use in the Production Process.** This category would include seed, fertilizer, fuel, and other supplies which subsequently serve as raw materials in the production process.

The distinction between the Inventories Purchased for Resale (Category C) and Inventories Purchased for Use in the Production Process (Category D) is simply that the items included in the "purchases for resale" category represent items that many agricultural producers also raise or grow. Nevertheless, the practice has evolved to treat the raised/harvested inventory items in Categories A and B and the purchased inventory items in Category C all in the same manner, i.e., to value them all at their market value. Conceptually, however, Categories C and D include the items that are similar because they are both purchased raw materials that eventually are resold or otherwise used in the production process. Thus, treating Categories C and D differently is difficult to justify.

Based upon the preceding discussion and the FFSC objective of moving toward GAAP, it appears that the most accurate treatment of the inventories of specialty crops not meeting the net realizable value criteria and raised feedstuffs included in Category B would be to value them at cost. However, given the complexity of required accounting systems, the difficulties of comparability and reaction to applying the full cost absorption approach to valuing raised breeding livestock, this approach would not be achievable by most agricultural producers at this time.

Therefore, the FFSC recommends the following:

A. **Inventories Raised/Harvested for Sale.** For inventories of harvested crops and raised livestock held for sale (Category A) valuation should be at market value less the cost of disposal (i.e., net realizable value).

B. **Inventories Raised/Harvested to be Used in the Production Process.** For inventories of raised feedstuffs and crops not meeting the net realizable value criteria (Category B) the market valuation is acceptable but not preferred to the lower of cost or market. In addition to the movement toward consistency with GAAP, the preference for the lower of cost or market is based upon the fact that valuing these items at market can create large revenue (and income) swings that potentially distort the true financial performance of an agricultural operation. In the case of raised feedstuffs, using the market valuation method runs the risk of distorting income by reflecting "unrealized gains or losses" on products that are not intended to be, and probably will not be sold in their present form.

C. **Inventories Purchased for Resale.** For inventories of items purchased with the intended purpose of resale (Category C) there are conceptually two subcategories:

1. Those items (such as feeder livestock, crops, etc.) which are actually purchased with the intention of being resold in the same form (although feeder livestock would be heavier when finally sold);
2. Those items, primarily feedstuffs, that will not be resold but will instead be consumed as an input in producing another item that will eventually be sold (e.g., feed which is either consumed by finishing livestock or which will be converted into milk, eggs or other products); however, these purchased items could be resold in the same form as they were originally purchased.

For items of the first type, the market valuation is acceptable but not preferred to valuation using the lower of cost or market. The argument is the same as discussed regarding the raised items in Category B. For items of the second type, the lower of cost or market valuation method should be used. The FFSC believes that these items are clearly inputs and therefore equivalent to inventory items purchased for use in the production process (Category D).

D. **Inventories Purchased for Use in the Production Process.** For inventories of other purchased supplies (Category D) the FFSC position is that these items would be valued at cost. While GAAP would again recommend valuation at the lower of cost or market, in practice the FFSC position for this category is generally consistent with how these items are handled by most accountants who prepare financial reports for agricultural producers.

The main difficulty with the recommendation regarding inventories of items purchased for resale is that certain purchased input items (primarily feedstuffs) are often commingled with raised inventories on farms that both raise and purchase the same type of feedstuffs (e.g., corn, hay, silage, etc.). Short of full-blown inventory accounting, one alternative which would produce acceptable results in the case of commingled inventories would be to assume that all feedstuffs on hand at the end of the year were purchased and to value those feedstuffs at the lower of either the weighted average purchase cost or market (as long as the units purchased during the year exceeded the units remaining in inventory at year-end). If more units (e.g., bushels, pounds, bales, etc.) are in inventory at year-end than the total units purchased during the year, then the number of units which are valued using the "average cost" method would be limited to the number of units actually purchased during the year. Any remaining units clearly would have been raised and would be valued according to the agricultural producer's practice for valuing inventories raised/harvested to be used in the production process (Category B).

The two keys to inventory valuation practices are: 1) that the agricultural producer discloses the inventory valuation practices and follows those valuation practices consistently from one year to the next and 2) that a conservative valuation method be used for valuing any inventory items that will be consumed in the next business cycle. Any approach that allows the agricultural producer to value purchased input inventories at market prices runs the risk of creating an "unrealized gain" on product that was not intended to be, and probably will never be sold.

The foregoing revisions in the FFSC recommendations on inventory valuation dictate a change in where the inventory adjustments are to be reflected on the income statement and a modification to the adjustments made to Gross Revenue to calculate VFP. Following is a summary of the FFSC position on inventory adjustments.

1. All adjustments for raised inventory items (Categories A and B) would continue to be included in the revenue section of the income statement.

2. Inventory items in Category C include both items purchased for resale (primarily feeder livestock and crops to be resold) and items purchased to be used as inputs in the production process (primarily feedstuffs). Those items purchased for resale would be included on the balance sheet with the raised items to be sold. Therefore, the inventory adjustment would continue to be reflected in the revenue section of the income statement. However, those items purchased to be consumed as inputs in the production process, would need to be separated from the other crop inventory on the balance sheet, with the inventory adjustment being shown in the expense section of the income statement. It is this latter inventory adjustment (i.e., changes in inventories being shown as an adjustment to expenses) which would change the adjustments made to Gross Revenue to calculate VFP. The adjustment for the change in purchased feedstuffs inventory would have to be made below Gross Revenue and before VFP. Thus, VFP would be defined as follows:

   Gross Revenue
   Less:
   (i) cost of purchased livestock/poultry to be resold, ± the change in inventories of purchased livestock/poultry; and
   (ii) cost of purchased feed and grain, ± the change in inventories of purchased feedstuff.
   Equals: Value of Farm Production or VFP

See Appendix A for an illustration of this point.

TREATMENT OF RAISED BREEDING LIVESTOCK

Determining the asset value, for balance sheet purposes, of raised breeding livestock has for many years been a challenge in the preparation of financial statements (which have been adjusted to approximate cost basis) for agricultural producers. There are two central issues: 1) identifying the appropriate valuation of the asset (Should valuation be cost, cost less accumulated depreciation, tax basis, base value, market value or some other value?) to reflect on the balance sheet; and 2) determining the appropriate timing of recognition of income, expense, gain, or loss in the income statement.

For agricultural producers calculating taxable income on a cash basis, it is important to recognize that the cost of raising breeding livestock will have been expensed. Therefore, on the cash basis or tax basis balance sheet, those agricultural producers will have a "$0" basis for such raised breeding livestock.

The FFSC recommends that one of the following two approaches be used for recording the value of raised breeding livestock in financial reports (which have been adjusted to approximate cost basis) of agricultural producers, either:

1. the **full cost absorption method**; or

2. the **base value method**.

The FFSC does not recommend use of any quantity based, market value system. Market values of raised breeding livestock would be separately disclosed (in the notes or on the market value balance sheet) but would not be used in the calculation of net farm income.

Changes in the value of the breeding herd, flock, etc., due to changes in market prices of livestock are excluded from income regardless of whether the full cost absorption method or base value method of valuing raised breeding livestock is used.

The concepts regarding valuation of raised breeding animals are equally applicable regardless of whether the agricultural producer has livestock, such as hogs, beef cattle, sheep, dairy cattle, llamas, goats, horses, mink, or some other species of raised breeding animals. The critical issue is that the animal will be identified as breeding livestock for a period of time longer than one business cycle—usually one year.

FULL COST ABSORPTION METHOD

The full cost absorption method is in accordance with GAAP. Under the full cost absorption method, the agricultural producer would accumulate and allocate all costs associated with raising breeding livestock. Upon entry to the breeding herd, the accumulated costs of raising the animals would then be depreciated over the expected useful life of the animals. Market values of the breeding herd would be separately disclosed. While it is consistent with GAAP, this method of cost accumulation and then depreciation is in very limited use. In fact, the incorporation of a similar requirement in the Tax Reform Act of 1986 raised such overwhelming objection that it was later repealed. A reason for objection to such a government mandated method of accounting for raised breeding livestock is the very complex record keeping system needed to accurately and precisely accumulate the aggregate costs. With full cost absorption, the valuation of raised animals impacts the income statement only through (i) the depreciation of accumulated costs and (ii) the gain or loss at the time of sale of the breeding animal.

Advantages of Full Cost Absorption

1. It is consistent with generally accepted accounting principles (GAAP).

2. The expense associated with the breeding animal is recognized during the time the animal is being "used up" (in service) throughout its productive life, not just at the time the expense is incurred.

Disadvantages of Full Cost Absorption

1. Additional, complex record keeping is required to accumulate all costs (fixed and variable, cash and non-cash, etc.) and to maintain depreciation records.

2. The enterprise of raising replacement breeding livestock is not accounted for as a separate "profit center" in the farm business. No profit or loss is generated by the enterprise of raising replacement breeding livestock. Only net costs (in the form of depreciation) are reflected.

3. The assumption is that raised breeding livestock are "used-up" in the same way as machinery. There is no reflection of the fact that the change in the true economic value of raised breeding livestock may not necessarily be approximated by the depreciated values.

4. In periods of high inflation (such as the early 1980's), there is a delay in recognizing the effect on net income of the increases in the costs of raising replacements. The true opportunity cost of the resources (i.e., the replacement breeding animals which could otherwise have been sold) being used by retaining the animals for breeding purposes is not reflected in net income.

BASE VALUE METHOD

The base value method would ordinarily be used by an agricultural producer who maintains accounting records on a cash basis but, after the close of each accounting period, adjusts those cash basis records to approximate a matching of revenue with expenses incurred to create those revenues.

Under the base value method, a "base value" is established for various categories of raised breeding animals. As individual or groups of animals move through those categories in their normal life cycle, valuation would be according to the base value established for that particular category at the date valuation is being done. If multiple categories are used to identify the life cycle of the breeding animals, then there will be "multiple transfer points" with a change in valuation as the animals progress from one category into another. Both the change in value of raised breeding livestock (resulting from either increased age and thus movement to a category having a higher base value or an increased number of raised replacements) and the income or loss from the sale of animals are included in income; and the costs of raising replacement breeding animals are included in expenses. In years where there is a change in the base value of one or more categories of raised breeding animals, the income or loss resulting from that change would be included as a component of income or loss from the sale of capital assets.

Advantages of Base Value Approach

1. A base value can be selected which approximates the full cost of raising that breeding animal to each stage in its life cycle.

2. A valuation is assigned to raised breeding livestock that is similar to the cost of other assets, thus allowing for calculation of a rate of return on assets having an approximate cost basis that is more accurate than can be accomplished by using only the tax basis valuation of raised breeding livestock as the approximate cost basis.

3. Farm income from operations is not influenced by changes in market values of the raised breeding animals for which a base value has been established.

4. Sales of culled raised breeding livestock are treated as a normal on-going part of the business. Since most of the economic depreciation of breeding livestock occurs just before sale time, this procedure forces recognition of the loss (or gain) associated with sale into the normal profitability calculations for the business. This recognition is likely most important for dairy operations where the sale value can be $400 to $600 below any base value which might have been established to approximate full cost absorption and, therefore, the "implied" depreciation is a significant cost. It would be of less importance for beef operations where the base value and the values of culled animals are usually more closely aligned.

Disadvantages of the Base Value Approach

1. Net farm income is influenced by changes in the base value. Because the frequency of changes to the base values are usually kept to a minimum (maybe every 3 to 5 years), the income or loss resulting from a base value change could represent a significant adjustment to net farm income in the particular year a change is made to the base values. Part of this adjustment probably should have been attributed to net income of one or more of the past years. For example, if extreme inflation causes gradual but uneven increases in the cost of raising a replacement, a true reflection of costs could require frequent, possibly annual, changes in base values.

2. The approximated cost basis of the raised breeding livestock is not exactly comparable to the costs of other assets. The approximated cost for the raised breeding livestock represents a before tax value. The costs are not accumulated and then depreciated. In any cash basis tax reporting system, these approximated costs for raised breeding livestock have been used as deductions for tax purposes, while the cost investment in other assets is with after tax funds.

3. Base values, having some reasonable rationale, must be established.

4. Since base values are somewhat arbitrarily assigned, excessively conservative or inflated values could be selected. An extremely conservative base value would understate the adjustment to cash basis "Net Farm Income from Operations" from raised replacement breeding livestock and understate the approximated cost/base value balance sheet. Such understatements could result in calculation of cost based measurements (i.e., misstated ROA's calculated against assets valued at cost) which do not reasonably reflect financial position or financial performance.

See Appendix F: Methods for Applying Base Value System for Raised Breeding Livestock for a more detailed discussion of the methods which can be followed when using the base value method for valuation of raised breeding livestock.

ALTERNATIVE BASE VALUATION FOR YOUNGSTOCK – SINGLE TRANSFER POINT

An alternate approach for the valuation of raised breeding livestock involves valuing all young, or immature, breeding livestock as if they were market livestock until the time they are actually transferred (i.e., "single transfer point") into the breeding herd. For example, all beef or dairy youngstock would be valued along with the market animals until an animal freshens or is used for breeding service. A base value is established only for the mature breeding animals. In a dairy example, only the cows would have a base value. Since young raised breeding livestock would be valued at market value on the balance sheet, part of the adjustment to cash basis revenue from raising replacements is effectively reflected through that change in market value.

Advantages of a "single transfer point"

1. Only one base value must be established for the mature animals. Market values for the remaining youngstock must be established.

2. For herds where a significant proportion of the youngstock are sold (primarily as meat animals), records would not have to be maintained which separate breeding animals from market livestock until after the selected breeding animals have entered the breeding herd.

3. It is a relatively simple valuation system to maintain and use, being much less complex than a base value system with "multiple transfer points".

Disadvantages of a "single transfer point"

1. There is no separation on the balance sheet or in supporting schedules of the animals being held for breeding or actually bred. The absence of detail about the breeding animals on hand might cover up changes (intended or unintended) in management practices that could be important to an agricultural producer, a lender or other interested party.

2. All changes in the market prices of breeding youngstock are included as adjustments to cash basis revenue. Only changes in the market prices of the mature breeding animals would be excluded from net income.

3. Because the youngstock are not yet identified to be used as breeding animals, they would likely be recorded as current assets on the accrual adjusted balance sheet. Including youngstock with current assets of an operation potentially would inflate the current ratio when comparing it to an operation using "multiple transfer points".

TREATMENT OF PURCHASED BREEDING LIVESTOCK

The discussion in the preceding section addresses only raised breeding livestock. Purchased breeding livestock must be treated like any other purchased capital asset. The cost value on the balance sheet is the cost of the item minus the accumulated depreciation that has been taken (frequently called the undepreciated balance or remaining basis). The market value is established in the same manner as used for raised replacements and included in the market value column of a balance sheet or separate schedule where market values are reported.

On the income statement, annual depreciation of the purchased breeding livestock is included as an expense, along with the depreciation of other capital assets such as machinery and improvements to real estate. The actual purchase price of the breeding livestock is not itself recorded as an expense item. Gain or loss on the sale of purchased breeding livestock is calculated as the sale price minus the undepreciated balance at the time of sale. This gain or loss is included in the gross revenue section of the income statement.

REVENUE RECOGNITION – SALE OF BREEDING LIVESTOCK

The gain or loss on the sale of breeding livestock, regardless of whether purchased or raised, is included in gross revenue. This treatment recognizes the fact that the sale of breeding livestock, either as cull animals or as seed stock, is a normal, planned, and ongoing part of the business.

Note: The foregoing income statement treatment is only appropriate for normal/recurring sales of breeding livestock. If a material down sizing or complete liquidation of the herd occurs, the gain/loss on the sale should be reported on the income statement after Net Farm Income From Operations and before Net Farm Income, Accrual Adjusted.

For many businesses, the gain or loss from the sale of breeding livestock may be a significant determinant of the net returns of the business. Recognizing the gain (or loss) on sale of breeding livestock as part of a continuing business differs from recognizing the gain (or loss) on sale of real estate because the sale of real estate is an infrequent activity that is not normally considered a part of the ongoing operation of an agricultural business.

INVESTMENTS IN ENTITIES OTHER THAN MARKETING, SUPPLY, AND FARM CREDIT COOPERATIVES

This issue generated very little discussion, and the FFSC has basically adopted the GAAP approach as follows:

1. Cost method is recommended for all investments where the investor has no ability to exert significant influence over the operating and financial policies of the investee firm.

2. Equity method is recommended for all investments where the investor has the ability to exert significant influence over the operating and financial policies of the investee firm, but total ownership is no greater than fifty percent.

3. If total ownership of the investee firm is greater than fifty percent, consolidated financial statements should be prepared, unless:

    a. The total impact of the investee consolidation is immaterial to the financial statements of the investor (equity method acceptable); or

    b. The investor has no control over the investee operation (bankruptcy trustee, etc.), or control is likely to be temporary.

The issue of being able to exert significant influence over the operating and financial policies of the investee is up to the judgment of the preparer. Many analysts use general guidelines of twenty percent ownership. However, with the predominance of smaller firms represented in agriculture, a somewhat higher percentage might be appropriate. In both the cost and equity methods the carrying amount of investments should be reduced to reflect a loss in value that is other than temporary.

INVESTMENTS IN COOPERATIVES

There are three major types of cooperatives that have significant dealings with agricultural producers—supply/manufacturing cooperatives, the Farm Credit System (technically a supply cooperative), and marketing cooperatives.

1. *Supply/Manufacturing Cooperatives*. Supply and manufacturing cooperatives produce or purchase goods and materials for their members. Products are generally sold to the members at prices that approximate those charged by other suppliers of similar products. To the extent that sale proceeds exceed expenses, the cooperatives may distribute patronage refunds. These refunds are generally based on the volume of business conducted with the cooperative and may vary by product line.

2. *Farm Credit System*. Investments in Production Credit Associations (PCA), Federal Land Bank Associations (FLBA), Federal Land Credit Associations (FLCA) (which are Associations with long term lending authority) and Agricultural Credit Associations (ACA) (which are the result of the merger of a PCA and an FLBA) are similar to the investments in supply cooperatives and marketing cooperatives. An equity investment in a PCA, an FLBA, an FLCA, or an ACA must be purchased in order to obtain credit from that particular association. Owners of Farm Credit stock may receive dividends or distributions of earnings based on patronage if so declared by the board of directors of the PCA, FLBA, FLCA or ACA. Equities are redeemable only at the discretion of each association's board of directors.

3. *Marketing Cooperatives*. Marketing cooperatives provide sales outlets for the products of their members and patrons. For many of these cooperatives, the right of members to deliver products is based on the amount of stock ownership—one share of stock allows the patron to deliver one acre of sugar beets, for example. In those cases, the stock may have a perceived market value substantially higher than the cost, including allocated profits or losses. However, this stock is often restricted as to its transferability.

Consistent with GAAP, producers should account for investments in cooperatives at cost plus allocated equities and retains. The carrying amount of those investments should be reduced when the cooperatives allocate losses to the patron or if the patron is unable to recover the full carrying amount of the investment. (Losses incurred by the cooperative but not allocated to the patron may indicate such an inability to recover.)

Investments in cooperatives should be shown as a non-current asset on the balance sheet.

CAPITAL LEASES

For financial statement purposes, leases can be divided into two categories: capital leases and operating leases. Operating leases are also called rental arrangements. Operating leases usually have periods much shorter than the life of the asset being leased. For example, it is possible under an operating lease to rent a tractor for a month**,** land for a year, or a backhoe for three days. Operating leases are not entered on the balance sheet as assets or liabilities, but payments on operating leases are recorded as expenses in the income statement. Operating leases should appear as a note to the balance sheet to disclose the annual amount of minimum rental payments for which the agricultural producer is obligated**,** the general terms of the lease, and any other relevant information. For example, a three year lease on land might appear as a note indicating the amount of land leased, the duration of the lease and the annual lease payments.

A capital lease is a direct substitute for purchase of the asset with borrowed money. It is a noncancelable contract to make a series of payments in return for use of an asset for a specified period of time. It transfers substantially all the benefits and risks inherent in the ownership of the property to the lessee. For example, if the asset transfers to the agricultural producer at the end of the lease or the agricultural producer can buy the asset at the end of the lease for a bargain price, the asset is effectively being purchased and the agricultural producer has most of the benefits and risks of ownership of the asset.

Because of this ownership interest, the lease in question is accounted for as a financing arrangement, (i.e., a capital lease) whereby the ownership interest in the leased asset is financed by the lessor in the form of lease payments.

The FFSC recommends utilization of the GAAP approach to the identification and reporting of capital leases. However, special attention should be paid to the issue of materiality and whether capital lease obligations of a particular borrower are material enough to justify handling in accordance with GAAP. Further, for analytical purposes, the FFSC recommends that alternative methods of amortizing the lease obligation be allowed (GAAP allows only the effective interest method) where the results from those methods do not materially differ from the results of the effective interest method. See Appendix G: Accounting For Capital Leases for a discussion of the GAAP approach and acceptable alternatives.

PERENNIAL CROPS

Perennial crops (e.g., orchards, groves, vineyards, alfalfa, bush berries, etc.) are characterized by both development and productive phases. The productive phase starts when the plants reach commercial production. Development period costs (reduced by sales of partial crops) should be capitalized and depreciated over the estimated useful life of the plant. Assuming a cost approach to balance sheet valuation, the land and plants should be valued separately, with value for the latter placed at total capitalized costs minus accumulated depreciation. Both land and plants should be listed in the non-current portion of the balance sheet.

Once the orchard, vineyard, etc., has reached the productive phase, annual growing costs (e.g., cultivation, grazing, fertilizing, pruning, plant depreciation, etc.) should appear as a current asset (i.e., investment in growing crops) on an accrual adjusted balance sheet until such time as the crop is harvested and a market price is determinable. If a market value balance sheet is being prepared, the land and plants should be valued together, since they ordinarily would not be sold separately.

GOVERNMENT LOAN PROGRAMS

One of the major components of government farm programs is the opportunity to place crops under loan with the Commodity Credit Corporation (CCC) at a set "loan rate" for a period up to nine months. The producer has the option of either repaying the loan plus accrued interest or forfeiting the crop to the CCC and keeping the loan proceeds (no interest is charged). Because of this ability to forfeit the collateral in return for loan forgiveness, treatment of the loans on agricultural balance sheets has evolved into three basic approaches:

1. Inventory pledged as collateral on the loan is shown on the balance sheet at the *higher* of market value or the loan rate. The CCC loan principal amount is shown as a current liability. Accrued interest is shown only to the extent that market price of the collateral exceeds interest due.

2. Basically the same as approach number 1, except that loan and accrued interest are not shown as a current liability. They are netted against the inventory amount, and the resulting net equity, if any, is shown as inventory. The gross amount of inventory and the CCC amounts are usually disclosed as well.

3. The GAAP approach requires showing the CCC principal amount and total accrued interest as current liabilities. The inventory is shown at market value, unless that is less than the principal and interest owed. If it is, the inventory is written up to equal the total of the liabilities.

Proponents of the net equity approach, number 2, argue that it reduces distortions in the current ratio and other measures caused by heavy utilization of what is essentially "free" debt. They argue that many producers utilize the loan programs merely as a cash management tool and would not require that much outside debt funding. Further, since use is heaviest when market price is substantially below loan rates (implying large amounts of default), the loan is essentially a sale of product even though title has not yet passed.

For credit analysis purposes, the FFSC recommends adoption of approach number 1 as the acceptable method of handling CCC loans.

While the FFSC feels the GAAP approach, number 3, is the most desired method, it would create major problems for most systems utilizing a cash-to-accrual approach for deriving an accrual adjusted income statement. Since the write-up of inventory and the offsetting accrued interest charge will not be turned into cash transactions, it would have the effect of overstating both VFP and interest expense in the year the loan was reflected on the balance sheet, and then understating it in the following year. Or, conversely, it would require a continual tracking of the accrued interest amounts on individual loans that the producer may have no intention of repaying. Finally, with loan programs longer than nine months, such as the Farmer-Owned Reserve and CCC extensions, the accrued interest amount can become very large and even more potentially distorting.

The final issue related to government loan programs is the income treatment of the proceeds. There was strong agreement among the FFSC members that, for analysis purposes, CCC loan transactions should not be treated as a sale of inventory until title has passed (loan was forfeited), regardless of the "intent" of the producer or the tax treatment followed.

CLASSIFICATION OF CURRENT ASSETS AND CURRENT LIABILITIES

The current classification applies to those assets that will be realized in cash, sold, or consumed within one year (or operating cycle, if longer), and those liabilities that will be discharged by use of current assets or the creation of additional current liabilities within one year (or operating cycle, if longer). The current liability section of a balance sheet is also intended to include obligations that are due on demand or will be due on demand within one year from the balance sheet date, even though liquidation may not be expected within that period. Short-term obligations shall be excluded from current liabilities only if the enterprise intends to refinance the obligation on a long-term basis and has the demonstrated ability to consummate the financing.

The ordinary operations of a business involve a circulation of capital within the current asset group. Cash is expended for materials, labor, operating expenses, and other services, and such cash expenditures are included in the inventory value. Upon sale of the products or performance of services, the accumulated expenditures are converted into receivables and ultimately into cash again. The average period of time intervening between the cash-to-cash conversion is the operating cycle of the business. When the business has no clear operating cycle, or when the operating cycle is shorter than 12 months, a 12-month period should be used to segregate current assets.

This concept of the nature of current assets would exclude from that classification such resources as 1) cash and claims to cash that are restricted as to withdrawal or other use for current operations; 2) investments in securities (whether marketable or not) or advances that have been made for the purpose of control, affiliation, or other business advantage; 3) cash surrender value of life insurance; 4) depreciable assets; 5) long-term receivables; and 6) land.

For analytical purposes, specific recommendations of the FFSC are:

1. Principal debt due within 12 months, even on notes with monthly payments, should be included as a current liability.

2. Capital leases should be accounted for on the balance sheet, with the current portion of the principal due and the accrued interest shown as a current liability.

3. Cash value of life insurance should be a non-current asset.

4. Loans to family members should be treated based on the characteristics of the notes. (The amount of these loans should be separately disclosed, if material.)

5. PIK certificates should be treated as current assets.

6. Retirement accounts should be shown as non-current assets.

7. The current portion of both deferred tax assets and deferred tax liabilities are to be recorded as current assets or current liabilities.

DISCLOSURE BY NOTES

Financial reporting can generally be thought of as a disclosure of the financial position and financial performance of a business enterprise to interested parties (owner, lender, investor, etc.) Financial statements, which generally consist of account names and monetary amounts drawn from the accounting records, are the central feature of financial reporting. However, in the interest of full and complete disclosure, some very useful information is better provided, or can *only* be provided, by notes to the financial statements, or similar supplementary information. The use of notes and supplementary information provides the means to explain and document certain items which are either presented in the financial statements or otherwise affect the financial position and performance of the reporting enterprise. Without such disclosures, users of the financial statements who are uninformed about the operation of an entity and how its financial statements are compiled would have a difficult time accurately assessing the operation.

Several examples of the types of disclosures that can be made only through the use of notes would include:

Example 1: **Measurement Attributes.** Not all businesses prepare their financial statements using the same basis of accounting. A balance sheet prepared on an estimated current market basis will almost always be very different from a balance sheet prepared on a depreciated historical cost/base value basis. A statement of income prepared on a cash basis will likely be very different from one prepared on an accrual basis. A user of the financial statements can not realistically evaluate the financial position and performance of an entity without knowing the basis of accounting used in the preparation of those statements.

Example 2: **Nature of Operation.** In order for financial statements to be the most meaningful, the user needs to know the scope (number of different enterprises) and the scale (size of each enterprise) of the reporting entities. While sales dollars are often the benchmark used for *non*-farm operations, the extreme price variability of agricultural commodities requires that more information be given the user of farm financial statements. Providing information about the actual production units (i.e. number of brood cows, number of sows, acres of crop land, etc.) makes the financial statements much more meaningful to the users.

Example 3: **Existing Creditors.** The names of existing creditors and the terms of each loan are not necessarily required in financial statements. However, lenders are generally required to verify the financial statement information received from credit applicants. This verification process can be completed much quicker if names and amounts are readily available for comparison with information obtained from public records and credit bureau reports.

The following is a discussion of how disclosures should be presented and a list of the recommended minimum disclosures. The FFSC urges all preparers of financial statements to carefully consider all of the following items and any others that may aid in the understanding of the financial position and performance of an entity.

PRESENTATION

Notes should be arranged in the same order as the financial statement captions to which they refer. If notes are presented on a separate page or pages, they should be placed immediately following the basic financial statements, and each page should be titled with the name of the entity and the caption *NOTES TO FINANCIAL STATEMENTS*

MINIMUM DISCLOSURES

At a minimum, the following items shown in ***bold italics*** should be disclosed in the notes, unless they are addressed in the basic set of financial statements. The items listed which are *not* bolded are additional disclosures that should be considered.

Summary of Significant Accounting Policies

Generally, the first Note, either Note 1 or Note A, will list the general disclosures and the accounting policies. A summary of items that may be included follows. *This list should not be considered all inclusive.*

- **Basis of Accounting** - A brief description of the accounting methods, procedures, and policies used to prepare the financial statements including, that the income statement was prepared on an accrual-adjusted basis. Also, whether the balance sheet was prepared using market value and/or depreciated historical cost/base value.

- Basis of Inventory Valuation - Method of determining cost or value.
  - Lower of cost or market
  - Market
- Basis of Capital Asset Valuation
  - Cost net of depreciation
  - Market

  Any departures from GAAP are usually disclosed in the basis of accounting.

- **Nature of Operations** - A brief description of the operation, including the following items, should be disclosed:
  - Number of acres farmed or ranched
  - Type of crops or livestock produced
  - Number of acres owned vs. leased
  - Number of head raised, produced, milked, etc.
  - Any non-farm business activities
  - Form of business organization/entity/organizational structure
- Use of Estimates - Disclosure indicating that most financial statements require the use of estimates. Disclose major estimates used in the preparation of financial statements such as:
  - Measurements of grain bins
  - Estimating weights of livestock
  - Estimating prices of property and equipment
  - Any other material estimates
- Method of Consolidation (or Combination) - A detailed description of the entity or entities included in the financial statements. State whether the financial statements include all assets and liabilities of the owners, or just the farm assets and liabilities. State whether any other businesses of the owners are included in the financial statements.
- Revenue Recognition - Unique revenue recognition policies, such as: "Unsold crops and livestock are included in revenue at the market price as of the date of the balance sheet."
- **Depreciation Methods** - Number of years of depreciable life and depreciation methods used for each category.
- Other Important or Unusual Accounting Policies.

NOTE DISCLOSURES RELATED TO BALANCE SHEET AND INCOME STATEMENT CAPTIONS (REQUIRED)

Generally, any ***material*** item in the financial statements should be disclosed if the computation for the item is not clearly apparent. These items may include, but are not limited to, the following:

- Accounts and notes receivable – Should include a listing of all material accounts and notes receivable.
- Inventory - Categories, unit numbers and dollar amounts should be disclosed.
- Raised breeding livestock - Categories, unit numbers and dollar amounts should be disclosed, as well as whether market value, base value or full cost absorption is used.
- Land, buildings and improvements - For market value, categories and dollar amounts should be disclosed, along with how the value was determined. For historical cost, include cost, accumulated depreciation, and net book value. It is often helpful if each property is listed separately with a brief description.

- Machinery and equipment - Disclose categories and dollar amounts for market value, along with original cost and accumulated depreciation.
- Deferred income taxes - (Deferred and estimated). A detailed description or calculation of how the deferred taxes were computed.
- Notes payable and long-term debt - Should include terms, names of creditors, interest rates, amount of payments, due dates, collateral, and unused lines of credit.
- Contingent liabilities - Should include a detailed description of each.
- Leases
  - CAPITAL: Should include same items listed under Notes Payable.
  - OPERATING: If the lease covers more than one year, should include terms, name of lessor, assets leased, amount of payments, number of payments, and term of lease. If the lease covers just one year, should include assets leased, total amount of annual cost, and a statement that these leases cover only one year.
- Pension plans - Disclose how payments to the plan are determined, which employees are covered by the plan, and the amount of payments per year.

OTHER NOTE DISCLOSURES (OPTIONAL)

- Related party transactions.
- *Commitments:*
  - Sales contracts – hedge-to-arrive, forward cash, basis, etc.
  - Purchase contracts - for feed, fertilizer or other items.
- *Insurance:*
  - Life
  - Disability
  - Liability Umbrella
  - Etc.
- *Supplemental information - If the financial statements include other supplemental information, such as ratios, additional disclosures may be required to explain how this information was assembled. (Example - for liquidity or solvency ratios, state whether they include or exclude deferred taxes.)*

Detailed examples of many of the items listed above are provided in Appendix B.

Financial statements of agricultural producers are the central features of financial disclosure. However, for those financial statements to be meaningful and useful for analysis, additional information will almost always be necessary. A little extra time spent completing the note disclosure will save time when evaluating new capital investment opportunities or when discussing credit applications with a lender. At a minimum, adding the note disclosures to financial statements completes the historical record to provide a useful, historical reference in future years.

III. RECOMMENDATIONS ON UNIVERSAL FINANCIAL CRITERIA AND MEASURES

Five financial criteria are recommended in this Report: 1) liquidity, 2) solvency, 3) profitability, 4) repayment capacity, and 5) financial efficiency. Financial measures are recommended for each criterion. The computation of each measure is included, along with the interpretation and limitations of the measure. The limitations are included to ensure the user is aware of the limitations and is not misled by the results. The financial measures listed for each criterion are listed in the order of recommended use.

It is recognized that there will be agricultural producers who will be unable to implement the recommendations included in this Report (e.g., beginning farmers who do not have beginning and ending balance sheets). Others will not need to use the measures (e.g., farmers with small operations who have limited credit needs). Thus, the financial criteria and measures discussed in this Report are only recommendations. Also, the financial measures included in this Report are not intended to be all inclusive. Users may find it useful to calculate additional ratios. The knowledge, experience, and judgment of the user should also be used to analyze an agricultural business.

WHAT IS MEASURED

Financial analysis of an agricultural business must focus on both its present position (called "financial position") and the results of operations and past financial decisions (called "financial performance").

Financial position refers to the total resources controlled by a business and total claims against those resources, at a single point in time. Measures of financial position provide an indication of the capacity of the business to withstand risk from future farming operations and provide a benchmark against which to measure the results of future business decisions.

Financial performance refers to the results of production and financial decisions, over one or more periods of time. Measures of financial performance include the impact of external forces that are beyond anyone's control (drought, grain embargoes, etc.), and the results of operating and financing decisions made in the ordinary course of business.

WHY MEASURE

As an industry, agriculture has evolved from subsistence production to modern, sometimes complex, businesses utilizing land, labor, and capital with the expectation of generating a profit.

The need to measure financial position and financial performance increased when agricultural producers began to rely more on capital, either borrowed or invested, and less on labor and land.

Borrowed Capital. With borrowed capital (or debt), the farmer must demonstrate to a lender that the capital will be utilized in a way that assures the lender will be paid the agreed upon rate of interest (for "rent of the money") and repaid the entire amount of principal advanced. If the farmer's business is successful, the lender will receive only the principal with interest; therefore, the lender will seek a measure of assurance that there is a relatively low risk of failure to repay both principal and interest.

Invested Capital. Invested capital (or equity) is often viewed from two perspectives: capital invested by the farmer and capital invested by others not actively engaged in the farming operation (such as landlords, non-active stockholders, or partners in farming entities). For both active agricultural producers and passive investors there is a need to measure the return on the capital invested. Both have the choice of leaving their investment in agriculture or placing it elsewhere. However, each will use different criteria to make such decisions.

HOW TO MEASURE

Financial measures, particularly selected financial ratios, have been accepted as a method to measure financial position and financial performance. Simply stated:

> *Financial ratios* are the result of a comparison using two elements of financial data. A financial ratio may be expressed either as a *percent* (such as XX%) or as a *comparison to one* (such as XX:1), which is sometimes alternatively referred to as the "*number of times*".

Carefully selected financial measures will direct the attention of the reader to specific financial information, allowing the reader to focus on the most pertinent information instead of having to consider and evaluate all the financial information available about a particular business. Although they do not constitute comprehensive analysis, financial measures, if carefully selected, provide a means to focus attention on specific financial information in a disciplined fashion. It is this consistent, disciplined analysis that is the value of financial measures.

CATEGORIZATION OF FINANCIAL MEASURES

Financial measures can be grouped into five broad categories: Liquidity, Solvency, Profitability, Repayment Capacity, and Financial Efficiency. All measure either financial position or financial performance.

Liquidity measures the ability of a farm business to meet financial obligations as they come due in the ordinary course of business, without disrupting the normal operations of the business.

Solvency[1] measures the amount of borrowed capital (or debt), leasing commitments, and other expense obligations used by a business relative to the amount of owner equity invested in the business. Debt capital is interest bearing and/or has a date by which it must be paid. Therefore, solvency measures provide (a) an indication of the firm's ability to repay all financial obligations if all assets were sold (for the prices indicated), and (b) an indication of the ability to continue operations as a viable business after a financial adversity (such as drought), which typically results in increased debt or reduced equity.

Profitability measures the extent to which a business generates a profit from the use of land, labor, management, and capital.

Repayment capacity[2] measures the ability of a borrower to repay term farm debt from farm and non-farm income. Principal payments on term loans must come from net income (with depreciation added back) after owner withdrawals, income taxes, and Social Security taxes.

[1] RMA *Annual Statement Studies* uses the term "leverage" when describing the relationship between capital contributed by creditors and capital contributed by owners, or when measuring the extent to which owner equity (capital) has been invested in plant and equipment (fixed assets).
[2] RMA *Annual Statement Studies* uses the term "coverage" when measuring a firm's ability to service debt.

Financial efficiency[3] measures the intensity with which a business uses its assets to generate gross revenues and the effectiveness of production, purchasing, pricing, financing, and marketing decisions.

WORDS OF CAUTION

To this point, financial measures have been discussed in the context of making contributions to understanding the activities of a farm business. Unfortunately, a farm business does not exist in a perfect world where everything can be quantified precisely. Rather, business activities are carried on in a world of ever-changing economic uncertainty. Consequently, strict, rigid reliance upon financial measures as a sole determinant of financial position and financial performance is fraught with danger. Several of the major limitations of financial measures are discussed in this section.

To be informative and reliable, financial measures must be calculated from accounting data prepared in an appropriate and consistent manner. **The reliability and meaningfulness of financial measures are improved if changes in financial position are reconciled to the income statement.**

Type of Accounting Records. Financial measures are calculated using the accounting records of the business. The usefulness of a measure is influenced by the accuracy and reliability of the financial information and the method used to calculate the measure. In practice, agricultural producers often use different degrees of precision and consistency to record financial information and to prepare financial statements.

a. *Example of different asset valuation approaches—Book value versus market value*: In one year, a bare land section of crop ground may be valued at its historic cost (acquired ‘XX for $200 per acre); but, in a later year, that same bare land section may be valued at the owner’s estimate of its current market value (valued in 19YY at $1,800 per acre). Depending on the date of purchase and the date of market value, there may be a widely different value assigned to the same asset having exactly the same utility.

b. *Example of different treatments of costs incurred—Expense-as-incurred versus capitalize-as-an-asset*: Farmer A and Farmer B both invest $200,000 in planting the current year crop. Farmer A records on his balance sheet a $200,000 “investment in growing crops,” recognizing that the investment has been made, and with a normal growing season the investment would likely be recovered at harvest time. Farmer B, however, may record no “investment in growing crops” on his balance sheet, assuming that, even though the investment was made, there is no certainty that anything will be recovered at harvest time. Instead, Farmer B will record the $200,000 as expenses on the income statement.

c. *Example of different methods of liability recognition—Accrue-as-incurred versus recognize-when-billed*: Farmer A carefully records all accounts payable immediately when the liability is incurred. Farmer B, on the other hand, does not record the liability for an account payable until a bill is received from the supplier, even though the bill may not come for as long as sixty days after the obligation was incurred.

d. *Example of different methods of revenue recognition—Cash basis versus accrual basis*: Farmer A records revenues immediately upon being earned (such as the sale of grain), even though actual cash payment may not be received for several weeks. Farmer B, however, records revenue as income only at the time payment is received for products sold.

[3] RMA *Annual Statement Studies* uses the term “operating” when evaluating the management performance in a firm.

Different Business Enterprises. Every type of farming enterprise has its own set of risk factors: length of business cycle; requirements for machinery, equipment, and land; susceptibility to weather; sensitivity to the vagaries of nature; etc. The differences in farming enterprises are compounded because there are different degrees of diversification and economic integration found among farm operations. Thus, it might be unreasonable to use the same guidelines for particular financial measures to analyze the financial position and financial performance of an apple orchard, vineyard, cattle ranch, corn/soybean farm, dairy, turkey operation, broiler producer, citrus grove, peanut farmer, and cranberry producer.

Size. The use of financial ratios permits measurement of similarly sized firms on a "common denominator" basis. Ratios tend to remove size as an influencing factor. However, "big" is not necessarily better, nor is "small" necessarily optimal. Demonstrated performance is what is to be evaluated.

Point in Business Cycle. When comparing the financial measures of two different firms, the comparison is most meaningful when the information used for the calculations is taken at the same point in time or for the same period in a business cycle. This consistency is particularly important when evaluating a farming operation in a line of business that has variability in operating revenues and expenses, inventory build-up, and/or receivable build-up.

Length of Business Cycle. The numbers utilized for calculating financial measures are static. They are taken at a single point in time and often do not measure adequately the ebb and flow of cash that result from day-to-day business activity. Accordingly, measures must be analyzed with respect to the normal business cycle of the firm. For example, financial measures for a firm whose normal business cycle is fifteen days would be substantially different from the firm whose normal business cycle is sixty days or eighteen months.

Non-quantifiable Changes. Financial measures may not reflect, on a timely basis, the impact of major management changes or strategic direction changes that an agricultural producer has taken or contemplates taking. Normally, several accounting periods must pass before the results of those changes are reflected in the financial measures.

SELECTION AND USE OF FINANCIAL MEASURES

Throughout recorded history, people have felt the need to measure performance and compare the measure to a standard. Generally, this measurement takes the form of some quantitative factor. Because financial reporting uses numbers, it becomes relatively easy to perform much of the measurement of business activity by the use of financial ratios or other financial measures. It is through financial measures that one can systematically analyze a firm's past performance, assess the present financial position, and realistically determine the likely future performance. *However, financial measures used in a vacuum are absolutely meaningless.*

Financial measures enable the management of a firm to analyze past performance versus present performance, present performance versus budgeted performance, and a multi-year performance trend. When a firm is compared to itself, management and owners can very quickly identify the general trend. *However, care must be taken to not refine the measures used past the point where the accounting records realistically can support them.*

In addition, financial measures permit the management of a firm to measure relative position of the firm within an industry group of similarly sized firms (earnings, cash flow, and financial position). It would seem reasonable that if the financial measures of Firm A are more advantageous relative to those of competing firms within that industry, Firm A should be considered doing better than most. Intuitively, this conclusion is quite sensible and generally will stand the user of such information in reasonably good stead. *However, care must be exercised when measuring a firm's relative position within an industry. There have been times when the generally accepted wisdom of the industry has proven to be false*. The user must decide whether the financial ratios generally being exhibited by the entire industry are reasonable or instead are reflective of an industry experiencing unrealistic expectations.

CONCLUSION

Financial measures are not a substitute for informed judgment. Financial measures are simply a convenient way to evaluate large amounts of financial information and enable the user to compare the financial position and financial performance of an individual firm over time and to other firms within an industry.

Advice for users of financial measures:

1. Financial measures help in asking the right questions, but they do not provide answers.

2. Judgment and common sense should be linked to *informed* application of formula.

3. Be selective in the choice of financial measures. Different measures are appropriate in different industries or enterprises.

4. A benchmark is needed to assess a firm's financial performance and financial position. It is useful to compare financial measures with the firm's own measures from earlier years. While it is also useful to compare a firm's measures against other firms in the same industry group, be sure to compare "apples to apples" and "oranges to oranges."

5. Financial measures derived from incomplete or poorly prepared financial statements (balance sheets and income statements) are usually misleading and will frequently lead to bad business decisions by the owner and bad credit decisions by the lender.

RECOMMENDATIONS

Where appropriate, the following financial measures are recommended for use by agricultural producers, agribusinesses, and financial institutions. These financial measures adequately measure financial position and financial performance. Explanations of individual measures are presented to aid in understanding the use and limitations of the measures. All financial measures need not be calculated for every situation — the situation may not call for all financial measures, and the accounting information may not be available to calculate all financial measures. Finally, this list of financial measures is not exhaustive; and the user may calculate additional measures, if the accounting information is adequate and such other measures provide more insight.

Liquidity

1. Current Ratio
2. Working Capital
3. Working Capital/Gross Revenues Ratio

Solvency

4. Debt/Asset Ratio
5. Equity/Asset Ratio
6. Debt/Equity Ratio

Profitability

7. Rate of Return on Farm Assets
8. Rate of Return on Farm Equity
9. Operating Profit Margin Ratio
10. Net Farm Income
11. EBITDA

Repayment Capacity

12. Capital Debt Repayment Capacity
13. Capital Debt Repayment Margin
14. Replacement Margin
15. Term Debt and Capital Lease Coverage Ratio
16. Replacement Margin Coverage Ratio

Financial Efficiency

17. Asset Turnover Ratio
18. Operating Expense Ratio
19. Depreciation/Amortization Expense Ratio
20. Interest Expense Ratio
21. Net Farm Income from Operations Ratio

CURRENT RATIO

Computation: Total current farm assets ÷ Total current farm liabilities

Interpretation: This ratio (usually expressed as XX:1) indicates the extent to which current farm assets, if liquidated, would cover current farm liabilities. The higher the ratio, the greater the liquidity.

Limitations:

1. Current portion of deferred taxes should be included as current liabilities; failure to do so may overstate the current ratio.

2. The ratio is a static or "stock" concept of the financial resources available at a given point in time to meet the obligations at that time. It does not measure or predict the timing of future fund flows, nor does it measure the adequacy of future fund inflows in relation to outflows.

3. The ratio ignores committed lines of credit as financial resources available to assure timely payment of obligations.

4. The ratio does not recognize that many current farm assets could not be liquidated instantly, but at the same time many current farm liabilities are not due instantly. By convention, both current farm assets and current farm liabilities are based on a one-year time horizon.

5. The value of the ratio will be affected by the value placed on current farm assets.

6. There is no indication of the quality of the current assets and if they can be sold for the amount shown on the balance sheet.

7. The desired level for the ratio will vary by the type of business enterprise (i.e., a dairy with a monthly income, a fruit and vegetable farm with inventory levels that vary by season and with term debt obligations, a cash grain operation that can sell at harvest or store for later sale, etc.).

8. The value of the ratio can vary throughout the production cycle (i.e., planting versus harvest for feed grains, livestock farms with stored grain, etc.).

9. Businesses with very limited current assets and liabilities may have a strong current ratio, but limited liquidity.

WORKING CAPITAL

Computation: Total current farm assets – Total current farm liabilities

Interpretation: Working capital is a theoretical measure of the amount of funds available to purchase inputs and inventory items after the sale of current farm assets and payment of all current farm liabilities. The amount of working capital considered adequate must be related to the size of the farm business.

Limitations:

1. Current portion of deferred taxes should be included as current liabilities; failure to do so may overstate working capital.

2. The measure is a dollar amount (which may be positive or negative), so it is difficult to compare the measure across farm businesses. It is impossible to establish one standard for all farm businesses.

3. The measure is a static or "stock" concept of the financial resources available at a given point in time to meet the obligations at that time. It does not measure or predict the timing of future fund flows, nor does it measure the adequacy of future fund inflows in relation to outflows.

4. The measure ignores committed lines of credit as financial resources available to purchase inputs and inventories.

5. The measure does not recognize that many current farm assets could not be liquidated instantly, but at the same time many current farm liabilities are not due instantly. By convention, both current farm assets and current farm liabilities are based on a one-year time horizon.

6. The value of the measure will be affected by the value placed on current farm assets.

7. There is no indication of the quality of the current farm assets and whether those assets can be sold for the amount shown on the balance sheet.

8. The desired level for the measure will vary by the type of business enterprise (i.e., a dairy with a monthly income, a fruit and vegetable farm with inventory levels that vary by season and with term debt obligations, a cash grain operation that can sell at harvest or store for later sale, etc.).

WORKING CAPITAL TO GROSS REVENUES RATIO

Computation: Working capital ÷ Gross revenues

Interpretation: Working capital divided by Gross Revenues gives a relationship of the working capital to the size of the farm business. The higher the ratio, the greater the liquidity.

Limitations:

1. Current portion of deferred taxes should be included as current liabilities; failure to do so may overstate the working capital to gross revenue ratio.

2. The ratio is a static or "stock" concept of the financial resources available at a given point in time to meet the obligations at that time. It does not measure or predict the timing of future fund flows, nor does it measure the adequacy of future fund inflows in relation to outflows.

3. The ratio ignores committed lines of credit as financial resources available to assure timely payment of obligations.

4. The ratio does not recognize that many current farm assets could not be liquidated instantly, but at the same time many current farm liabilities are not due instantly. By convention, both current farm assets and current farm liabilities are based on a one-year time horizon.

5. The value of the ratio will be affected by the value placed on current farm assets.

6. There is no indication of the quality of the current assets and if they can be sold for the amount shown on the balance sheet.

7. The desired level for the ratio will vary by the type of business enterprise (i.e., a dairy with a monthly income, a fruit and vegetable farm with inventory levels that vary by season and with term debt obligations, a cash grain operation that can sell at harvest or store for later sale, etc.).

8. The value of the ratio can vary throughout the production cycle (i.e., planting versus harvest for feed grains, livestock farms with stored grain, etc.).

9. Gross revenues cover an accounting period while working capital represents the amount of liquid assets at a specific point in time.

DEBT/ASSET RATIO

Computation: Total farm liabilities ÷ Total farm assets[4]

Interpretation: This ratio measures financial position. The debt/asset ratio compares total farm debt obligations owed against the value of total farm assets. This ratio expresses what proportion of total farm assets is owed to creditors. In other words, it is the creditors' claims against the assets of a business. This ratio is one way to express the risk exposure of the farm business. It can be calculated using either the cost or market value approach to value farm assets. If the market value approach is used to value farm assets, then the deferred taxes with respect to the assets should be included as liabilities. This ratio is most meaningful for comparisons between farms when the market value approach is used to value farm assets. However, due to the impact of fluctuations in market values of farm assets, it is most meaningful for comparisons between accounting periods for an individual farm operation when the cost approach is used to value farm assets. The higher the ratio, the greater risk exposure of the farm business.

Limitations:

1. Deferred taxes should be included as liabilities; failure to do so may understate the debt/asset ratio.

2. The ratio is greatly influenced by the value placed on the farm assets. If current market value is used but no deferred or estimated tax liability is recognized, a higher level of "comfort" might be thought to exist than should actually exist. Book value, which is usually depreciated historical cost, may not accurately represent the true value of the farm assets nor be appropriate for analysis purposes. Finally, liquidation value may not be the appropriate value for analysis of a viable, on-going business.

3. A reasonable standard for the ratio varies from one type of enterprise to another and from one borrower to another. There is no single standard which is ideal for all types of farm businesses. The range of acceptable values will vary depending on the income variability, the proportion of owned land (or other assets) used in the farming operation, the risks associated with normal production, and the fluctuations in farm asset values that may occur due to changing demand for agricultural assets.

[4] The three solvency ratios recommended in this Report (debt/asset, equity/asset, and debt/equity) are algebraically related to one another and are not separate indicators of the solvency position of a farm. All three ratios are included in the Report because one is not preferred over the others by the members of the FFSC.

EQUITY/ASSET RATIO

Computation: Total farm equity ÷ Total farm assets[5]

Interpretation: This ratio measures financial position. Specifically, it measures the proportion of total farm assets financed by the owner's equity capital. In other words, it is the owner's claims against the assets of a business. This ratio can be calculated using either the cost or market value approach to value farm assets. If the market value approach is used to value farm assets, then the deferred taxes with respect to the assets should be included as liabilities. This ratio is most meaningful for comparisons between farms when the market value approach is used to value farm assets. However, due to the impact of fluctuations in market values of farm assets, it is most meaningful for comparisons between accounting periods for an individual farm operation when the cost approach is used to value farm assets. The higher the value of the ratio, the more total capital has been supplied by the owner(s) and less by the creditors.

Limitations:

1. Deferred taxes should be included as liabilities; failure to do so may overstate the equity/asset ratio.

2. The ratio is greatly influenced by the value placed on farm assets. If a current market value is used but no deferred or estimated tax liability is recognized, a higher level of "comfort" might be thought to exist than should actually exist. Book value, which is usually depreciated historical cost, may not accurately represent the true value of the farm assets nor be appropriate for analysis purposes. Finally, liquidation value may not be the appropriate value for analysis of a viable, on-going business.

3. A reasonable standard for the ratio varies from one type of enterprise to another and from one borrower to another. There is no single standard that is ideal for all types of farm businesses. The range of acceptable values will vary depending on the income variability, the proportion of owned land (or other assets) used in the farming operation, the risks associated with normal production, and the fluctuations in farm asset values that may occur due to changing demand for agricultural assets.

[5] The three solvency ratios recommended in this Report (debt/asset, equity/asset, and debt/equity) are algebraically related to one another and are not separate indicators of the solvency position of a farm. All three ratios are included in these guidelines because one is not preferred over the others by the members of the FFSC.

DEBT/EQUITY RATIO

Computation: Total farm liabilities ÷ Total farm equity[6, 7]

Interpretation: This ratio measures financial position and reflects the extent to which farm debt capital is being combined with farm equity capital. It can be calculated using either the cost or market value approach to value farm assets. If the market value approach is used to value farm assets, then the deferred taxes with respect to the assets should be included as liabilities. This ratio is most meaningful for comparisons between farms when the market value approach is used to value farm assets. However, due to the impact of fluctuations in market values of farm assets, it is most meaningful for comparisons between accounting periods for an individual farm operation when the cost approach is used to value farm assets. The higher the value of the ratio, the more total capital has been supplied by the creditors and less by the owner(s).

Limitations:

1. Deferred taxes should be included as liabilities; failure to do so may understate the debt/equity ratio.

2. The ratio is greatly influenced by the value placed on farm assets. If a current market value is used but no deferred or estimated tax liability is recognized, a higher level of "comfort" might be thought to exist than should actually exist. Book value, which is usually depreciated historical cost, may not accurately represent the true value of the farm assets nor be appropriate for analysis purposes. Finally, liquidation value may not be the appropriate value for analysis of a viable, ongoing business.

3. A reasonable standard for the ratio varies from one type of enterprise to another and from one borrower to another. There is no single standard that is ideal for all types of farm businesses. The range of acceptable values will vary depending on the income variability, the proportion of owned land (or other assets) used in the farming operation, the risks associated with normal production, and the fluctuations in farm asset values that may occur due to changing demand for agricultural assets.

[6] The three solvency ratios recommended in this Report (debt/asset, equity/asset, and debt/equity) are algebraically related to one another and are not separate indicators of the solvency position of a farm. All three ratios are included in these guidelines because one is not preferred over the others by the members of the FFSC.

[7] RMA *Annual Statement Studies* uses the term "debt/worth" when expressing the relationship between capital contributed by creditors and that contributed by owners. Debt/worth is computed as follows: total liabilities divided by tangible net worth.

RATE OF RETURN ON FARM ASSETS

Computation: (Net farm income from operations + Farm interest expense - Owner withdrawals for unpaid labor and management) ÷ Average total farm assets[8, 9, 10]

Interpretation: This ratio measures the rate of return on farm assets and is often used as an overall index of profitability. This ratio is most meaningful for comparisons between farms when the market value approach is used to value farm assets. However, due to the impact of fluctuations in market values of farm assets, it is most meaningful for comparisons between accounting periods for an individual farm operation when the cost approach is used to value farm assets. The higher the value, the more profitable the farming operation.

Limitations:

1. Owner withdrawals for unpaid labor and management must be correctly calculated, otherwise the result may be seriously understated or overstated. See Owner Withdrawals section (pages II-22 and II-23) for further discussion of this matter.

2. The rate of return on farm assets may seem low when compared to non-farm investments such as stocks and bonds. It should be recognized that neither realized nor unrealized gains on farm real estate and other assets are included as income.

3. The method used to value farm assets can affect the value of this ratio.

4. Net farm income from operations is calculated on a pre-tax basis.

5. Assets and income unrelated to the farm business should be excluded from the ratio, or care must be exercised to recognize their impact.

6. The value of the ratio can vary with the structural characteristics of the farm business, especially with the proportion of owned land (or other assets) used in the farming operation.

[8] This ratio can also be calculated using NFI. However, one must use caution in this approach because a gain/loss from the sale of a business asset, particularly farm real estate, can distort the result. In both approaches, the ratio is most meaningful for comparisons when calculated on a before-tax basis, allowing farms to be compared independently of taxes. This approach is recommended because the amount of tax owed for a particular year may be affected by losses from other years (e.g., net operating loss carryback and carryover, treatment of a net capital loss, etc.), special tax laws (e.g., investment tax credit) and the difficulty of separating taxes with respect to on-farm and non-farm earnings for sole proprietors with non-farm income.

[9] Many farm operations are organized as sole proprietorships, and do not pay compensation to the operator and family members for labor and management. A charge for unpaid operator and family labor and management must be subtracted to calculate the return to farm assets. For an economic analysis, the charge would be the opportunity cost for those factors of production. For a financial analysis, as discussed in this Report, there are two approaches available depending on the purpose of the analysis. The recommended approach is to use the amount removed from the business by the operator and family members—up to an amount representing the estimated value of unpaid labor and management. This amount is referred to as owner withdrawals for unpaid labor and management. Any additional withdrawals are treated as capital withdrawals for analysis purposes and should not be included in calculating this ratio. An alternative approach sometimes is used by record keeping services to prepare a comparative record summary. That approach is to calculate a charge based on either input usage or a measure of output. When that approach is used it should be noted and explained. Finally, the adjustment discussed above is not needed for a farm business organized as a corporation, since the operator and family members would receive compensation from the business.

[10] The return on farm assets should be associated with the investment that is available to the farm business over the period used to measure the return. The most practical method of averaging the investment for a farm business is to add the investment at the beginning of the year to that at the end of the year and divide the total by two. A more accurate, but less practical, method is to average month-end balances as follows: add the month-end investment balances and the beginning of the year investment balance, then divide the total by thirteen.

RATE OF RETURN ON FARM EQUITY

Computation: (Net farm income from operations - Owner withdrawals for unpaid labor and management) ÷ Average total farm equity[11, 12, 13]

Interpretation: This ratio measures the rate of return on equity capital employed in the farm business. It is most meaningful for comparisons between farms when the market value approach is used to value farm assets, and deferred taxes on these assets are included as liabilities. However, due to the impact of fluctuations in market values of farm assets, it is most meaningful for comparisons between accounting periods of an individual farm operation when the cost approach is used to value farm assets. The higher the value of the ratio, the more profitable the farming operation.

Limitations:

1. Deferred taxes should be included as liabilities; failure to do so may understate the rate of return on farm equity.
2. Owner withdrawals for unpaid labor and management must be correctly calculated, otherwise the result may be seriously understated or overstated. See Owner Withdrawals section (pages II-22 and II-23) for further discussion of this matter.
3. The rate of return may seem low when compared to non-farm investments such as stocks and bonds. It should be recognized that neither realized nor unrealized gains on farm real estate and other assets are included as income.
4. The method used to value farm assets can affect the value of this ratio.
5. Caution should be used when interpreting this ratio. A high ratio, normally associated with a profitable farm business, may also indicate an undercapitalized or highly leveraged farm business. A low ratio, which normally indicates an unprofitable farm business, may also indicate a more conservative, high equity farm business. This measure, like many of the other ratios, should be used in conjunction with other ratios when analyzing a farm business.
6. Net farm income from operations is calculated on a pre-tax basis.
7. Assets, liabilities, and income unrelated to the farm business should be excluded from the ratio, or care must be exercised to recognize their impact.
8. The value of the ratio can vary with the structural characteristics of the farm business, especially with the proportion of owned land (or other assets) used in the farming operation.

[11] This ratio can also be calculated using NFI. However, one must use caution in this approach because a gain/loss from the sale of a business asset, particularly farm real estate, can distort the result. In both approaches, the ratio is most meaningful for comparisons when calculated on a before-tax basis, allowing farms to be compared independently of taxes. This approach is recommended because the amount of tax owed for a particular year may be affected by losses from other years (e.g., net operating loss carryback and carryover, treatment of a net capital loss, etc.), special tax laws (e.g., investment tax credit), and the difficulty of separating taxes with respect to on-farm and non-farm earnings for sole proprietors with non-farm income.

[12] Many farm operations are organized as sole proprietorships, and do not pay compensation to the operator and family members for labor and management. A charge for unpaid operator and family labor and management must be subtracted to calculate the return to farm assets. For an economic analysis, the charge would be the opportunity cost for those factors of production. For a financial analysis, as discussed in this Report, there are two approaches available depending on the purpose of the analysis. The recommended approach is to use the amount removed from the business by the operator and family members—up to an amount representing the estimated value of unpaid labor and management. This amount is referred to as owner withdrawals for unpaid labor and management. Any additional withdrawals are treated as capital withdrawals for analysis purposes and should not be included in calculating this ratio. An alternative approach sometimes is used by record keeping services to prepare a comparative record summary. That approach is to calculate a charge based on either input usage or a measure of output. When that approach is used it should be noted and explained. Finally, the adjustment discussed above is not needed for a farm business organized as a corporation, since the operator and family members would receive compensation from the business.

[13] The return on equity should be associated with the average owner's equity that was available to the farm business over the period used to measure the return. The most practical method of averaging equity is to add the owner's equity at the beginning of the year to that at the end of the year and divide the total by two. A more accurate, but less practical, method is to average month-end balances as follows: add month-end equity balances and the beginning of the year equity balance, then divide the total by thirteen.

OPERATING PROFIT MARGIN RATIO

Computation: (Net farm income from operations + Farm interest expense - Owner withdrawals for unpaid labor and management) ÷ Gross revenues[14, 15]

Interpretation: This ratio measures profitability in terms of return per dollar of gross revenue. A farm business has two ways to increase profits—either by increasing the profit per unit produced or by increasing the volume of production (if the business is profitable). A relationship exists between the rate of return on farm assets, the asset turnover ratio, and the operating profit margin ratio. If the asset turnover ratio is multiplied by the operating profit margin ratio, the result is the rate of return on assets.

This relationship holds only (i) when gross revenue is used to calculate both operating profit margin and asset turnover or (ii) when the value of farm production is used to calculate both measures.

Limitations:

1. If net farm income from operations is not measured by matching, at least approximately, revenues and expenses incurred to create those revenues, then it can be grossly overstated or understated.

2. Owner withdrawals for unpaid labor and management must be correctly calculated, otherwise the result may be seriously understated or overstated. See Owner Withdrawals section (pages II-22 and II-23) for further discussion of this matter.

3. Net farm income from operations is calculated on a pre-tax basis.

[14] This ratio can also be calculated using NFI. However, one must use caution in this approach because a gain/loss from the sale of a business asset, particularly farm real estate, can distort the result. In both approaches, the ratio is most meaningful for comparisons when calculated on a before-tax basis, allowing farms to be compared independently of taxes. This approach is recommended because the amount of tax owed for a particular year may be affected by losses from other years (e.g., net operating loss carryback and carryover, treatment of a net capital loss, etc.), special tax laws (e.g., investment tax credit), and the difficulty of separating taxes with respect to on-farm and non-farm earnings for sole proprietors with non-farm income.

[15] Many farm operations are organized as sole proprietorships, and do not pay compensation to the operator and family members for labor and management. A charge for unpaid operator and family labor and management must be subtracted to calculate the return to farm assets. For an economic analysis, the charge would be the opportunity cost for those factors of production. For a financial analysis, as discussed in this Report, there are two approaches available depending on the purpose of the analysis. The recommended approach is to use the amount removed from the business by the operator and family members—up to an amount representing the estimated value of unpaid labor and management. This amount is referred to as owner withdrawals for unpaid labor and management. Any additional withdrawals are treated as capital withdrawals for analysis purposes and should not be included in calculating this ratio. An alternative approach sometimes is used by record keeping services to prepare a comparative record summary. That approach is to calculate a charge based on either input usage or a measure of output. When that approach is used it should be noted and explained. Finally, the adjustment discussed above is not needed for a farm business organized as a corporation, since the operator and family members would receive compensation from the business.

NET FARM INCOME, ACCRUAL-ADJUSTED

Computation: Net farm income, accrual-adjusted (NFI) is calculated by matching revenues with expenses incurred to create those revenues, plus the gain or loss on the sale of business assets, but before taxes.

Interpretation: NFI is the return to the farmer for unpaid labor, management, and owner equity.

Limitations:

1. The measure is a dollar amount (which may be positive or negative), therefore, it is difficult to compare across farm businesses. It is also impossible to establish one standard for all farm businesses.

2. The measure provides for a close approximation of matching revenues with the expenses incurred to create those revenues. If the income statement is prepared using cash basis accounting, then both beginning and ending accrual adjusted balance sheets are needed to make the necessary adjustments for changes in inventories, accounts receivable, accounts payable, prepaid expenses and accrued expenses. See Appendix E for further discussion on such adjustments.

3. NFI is calculated on a pre-tax basis.

4. The form of business organization can cause problems for interpretation of this amount. A corporation will include operator labor payments as a labor cost in their tax-based records unless adjustments are made. Inter-farm comparability must be made with caution whenever different forms of business organization are represented.

EBITDA

Computation: Earnings before interest, taxes, depreciation and amortization (EBITDA) is calculated as: Net farm income from operations + Interest expense + Depreciation expense+ Amortization expense.

Net farm income from operations
\+ Interest expense
= EBIT* Earnings before interest and taxes
\+ Depreciation and amortization expense
= EBITDA* Earnings before interest, taxes, depreciation and amortization

*** E** = Earnings, **B** = Before, **I** = Interest, **T** = Income Taxes, **D**= Depreciation, **A** = Amortization

Interpretation: EBITDA considers earnings prior to interest, income taxes depreciation and amortization. Commercial analysts often begin with EBITDA as the source of repayment capacity[16] and then compare this to total interest payments or principal and total interest payments in arriving at a debt coverage ratio. Recurring withdrawals and/or income taxes are often subtracted from EBITDA to arrive at the repayment capacity for commercial analysts.

Limitations:

1. There are differences in the computation EBITDA. A commercial analyst looks solely to the income statement and would therefore miss the removal of Owner withdrawals (net) or proxy for labor and management.

2. This measure is sometimes thought of as cash flow of the business, but it is not.

[16] The commercial repayment capacity discussed includes operating interest in the calculation and does not add in miscellaneous revenue as done in the Term Debt and Capital Lease Coverage Ratio.

CAPITAL DEBT REPAYMENT CAPACITY

Computation: Replacement and term debt repayment capacity:

	+	Net farm income from operations
	+/-	Total miscellaneous revenues/expenses
	+	Total non-farm income[17]
	+	Depreciation/amortization expense
	-	Total income tax expense
	-	Owner withdrawals (total)
	+	Interest expense on term debt
(a)	=	**Capital debt repayment capacity**
		Principal and interest on term debt:
	+	Prior year current portion on long-term debt (CPLTD)
	+	Prior year current portion of capital leases
	+	Interest expense on term debt
	=	**Total principal and interest on term debt**
	+	Payment on unpaid operating debt from a prior period (loss carryover)
	+	Total annual payments on personal liabilities (if not in withdrawals)[18]
(b)	=	Total uses of repayment capacity
(c = a-b)		**Capital debt repayment margin**
(d)	-	Replacement allowance/Unfunded capital expenditures
(e = c-d)	=	**Replacement margin**

Interpretation: This measure enables borrowers and lenders to evaluate the ability of the farm proprietor to generate funds necessary for debt repayment and asset replacement.

Limitations:

1. Interest Expense used in the above calculations is the accrual adjusted interest expense from the income statement. Usually, the amount of interest on term debt and capital leases will be readily available from the records of the agricultural producer.

2. All income and expense data used in the above calculations is accrual-adjusted data, not cash flow.

3. Replacement allowance/Unfunded capital expenditures is defined as: The net amount of cash used by investing activities minus any new financing provided to purchase those assets. The user should be able to substitute an allowance value to replace the actual unfunded capital expenditures when an abnormal non-recurring amount is reflected in the statement of cash flows.

4. The measure is a dollar amount, therefore, it is difficult to compare across farm businesses. It is also impossible to establish one standard for all farm businesses.

[17, 18] To evaluate the measure for the business only, these items should not be included. Certain adjustments may be necessary for the portion of income taxes and owner withdrawals that are paid by non-farm income.

CAPITAL DEBT REPAYMENT MARGIN

Computation: Capital debt repayment capacity minus Total uses of repayment capacity. Refer to the computation of the capital debt repayment capacity schedule above for subtotals and terms used in this calculation.

Interpretation: This measure enables borrowers and lenders to evaluate the ability of the farm proprietor to generate funds necessary to repay debts with maturity dates longer than one year and to replace business assets. It also enables users to evaluate the ability to acquire business assets or service additional debt and to evaluate the risk margin for capital replacement and debt service. This measure assumes that credit obtained for current-year operating expenses will be repaid in one year as a result of the normal conversion of farm production to cash. Unpaid operating debt from a prior period should exclude lines of credit and debt for livestock purchased in that period for sale in the current period (if part of the normal course of business).

Limitations:

1. The measure is a dollar amount (which may be positive or negative), so it is difficult to compare the measure between farm businesses. It is impossible to establish one standard for all farm businesses.

2. If net farm income from operations is not measured by at least approximately matching revenues and the expenses incurred to create those revenues, then net farm income from operations can be grossly overstated or understated.

3. If the repayment schedules for large amounts of term debt have interest-only periods in the early years of amortization (frequently one to three years for the major construction of new production facilities), the margin may be overstated.

4. The liquidation or build-up of inventories can make the interpretation of this measure incorrect in the short run, because net farm income from operations is calculated using an accrual-adjusted income statement. There may or may not be sufficient cash available to make payment(s) on a timely basis, due to changes in inventories. Thus, this measure should be used in conjunction with a projected cash flow statement.

5. The appropriate margin will vary from farm to farm depending on the production and price variability associated with the enterprise(s), the degree of diversification for farm and non-farm enterprises, and the financial and risk management abilities of the farmer.

6. The stability of the non-farm income may vary from borrower to borrower, depending on type of employment.

REPLACEMENT MARGIN

Computation: Capital debt repayment margin minus Replacement allowance/Unfunded capital expenditures. Refer to the computation of the capital debt repayment capacity schedule above for subtotals and terms used in this calculation.

Interpretation: This measure enables borrowers and lenders to evaluate the ability of the farm proprietor to generate funds necessary to repay debts with maturity dates longer than one year and to replace assets. It also enables users to evaluate the ability to acquire business assets or service additional debt and to evaluate the risk margin for capital replacement and debt service. This measure assumes that credit obtained for current-year operating expenses will be repaid in one year as a result of the normal conversion of farm production to cash.

Limitations:

1. The measure is a dollar amount (which may be positive or negative), so it is difficult to compare the measure between farm businesses. It is impossible to establish one standard for all farm businesses.

2. Some businesses normally borrow for most replacement needs while others finance all or a major share of asset replacement from operating income. If an asset replacement allowance is used, only the amount required from operating income should be included.

3. The true economic relationship between "depreciation" and "cash payments for business asset purchases" must be recognized. Some farm businesses must spend an amount equal to or in excess of the annual depreciation charge just to remain efficient and to keep buildings, machinery, and equipment up to current technological standards.

   Other farm businesses can enjoy the tax deduction of depreciation, but need not replace buildings, machinery, and equipment except after long periods of extended use.

TERM DEBT AND CAPITAL LEASE COVERAGE RATIO

Computation: Capital debt repayment capacity ÷ Total principal and interest on term debt[17] Refer to the computation of the capital debt repayment capacity schedule above for subtotals and terms used in this calculation.

Interpretation: The ratio provides a measure of the ability of the borrower to cover all term debt and capital lease payments before acquisition of unfunded assets. The greater the ratio, over 1:1, the greater the margin to cover the payments.

Limitations:

1. Even though the business may generate sufficient earnings (after matching revenues with the expenses incurred to create those revenues) to cover all term debt and capital lease payments, there may not be sufficient cash generated to actually make the payments on a timely basis. The liquidation or build-up of inventories can make the interpretation of the ratio incorrect in the short run. Also, there is no provision in this ratio for the replacement of business assets.

2. If the repayment schedules for large amounts of term debt have interest only periods in the early years of amortization (frequently one to three years for the major construction of new production facilities), the principal payments for term debt may be understated.

3. If revenues are not matched with the expenses incurred to create the revenues, the ratio may be greatly overstated or understated.

4. The stability of the non-farm income may vary from borrower to borrower, depending on type of employment.

5. The appropriate value for this ratio will vary depending on the production and price variability associated with the farm enterprise(s), the degree of diversification for farm and non-farm enterprises, and the financial and risk management abilities of the farmer.

6. This measure does not have much value for producers with little or no term debt payments.

REPLACEMENT MARGIN COVERAGE RATIO

Computation: Capital debt repayment capacity ÷ (Total uses of repayment capacity + Replacement allowance/Unfunded capital expenditures)

Interpretation: The ratio provides a measure of the ability of the borrower to cover all term debt and capital lease payments and recurring unfunded acquisitions. The greater the ratio, over 1:1, the greater the margin to cover the payments.

Limitations:

1. Even though the business may generate sufficient earnings (after matching revenues with the expenses incurred to create those revenues) to cover all term debt and capital lease payments and replacement of business assets, there may not be sufficient cash generated to actually make the payments on a timely basis. The liquidation or build-up of inventories can make the interpretation of the ratio incorrect in the short run.

2. If the repayment schedules for large amounts of term debt have interest only periods in the early years of amortization (frequently one to three years for the major construction of new production facilities), the principal payments for term debt may be understated.

3. If revenues are not matched with the expenses incurred to create the revenues, the ratio may be greatly overstated or understated.

4. The stability of the non-farm income may vary from borrower to borrower, depending on type of employment.

5. The appropriate value for this ratio will vary depending on the production and price variability associated with the farm enterprise(s), the degree of diversification for farm and non-farm enterprises, and the financial and risk management abilities of the farmer.

6. Some businesses normally borrow for most replacement needs while others finance all or a major share of asset replacement from operating income. If an asset replacement allowance is used, only the amount required from operating income should be included.

ASSET TURNOVER RATIO

Computation: Gross revenues ÷ Average total farm assets[19, 20]

Interpretation: The asset turnover ratio is a measure of how efficiently farm assets are being used to generate revenue. A farm business has two ways to increase profits — either by increasing the profit per unit produced or by increasing the volume of production (if the business is profitable). A relationship exists between the rate of return on farm assets, the asset turnover ratio, and the operating profit margin ratio. If the asset turnover ratio is multiplied by the operating profit margin ratio, the result is the rate of return on farm assets. Consequently, the same asset valuation approach should be used to calculate the asset turnover ratio as is used to calculate the rate of return on farm assets. The higher the ratio, the more efficiently assets are being used to generate revenue.

This relationship holds only (i) when gross revenue is used to calculate both operating profit margin and asset turnover or (ii) when the value of farm production is used to calculate both measures.

Limitations:

1. The usefulness of this ratio is heavily influenced by the value placed on the assets.

2. Gross revenues cover an accounting period while the average for farm assets generally represents only two points within that accounting period.

3. This ratio typically shows wide variations depending on the type of farm enterprise and the proportion of owned land (or other assets) used in the farming operation.

4. Assets unrelated to the farm business should be excluded from the denominator, or care must be exercised to recognize the impact of non-farm business related assets.

OPERATING EXPENSE RATIO

Computation: (Total operating expenses - Depreciation/amortization expense) ÷ Gross revenues

Interpretation: The operating expense ratio reflects the relationship of all operating expenses to gross revenues.

Limitations:

1. This ratio is very sensitive to the accuracy and reliability of the information used in the calculations.

[19] The asset turnover ratio should be associated with the investment that was available to the farm business over the period used to measure the return. The most practical method of averaging the investment for a farm business is to add the investment at the beginning of the year to that at the end of the year and divide the total by two. A more accurate, but less practical, method is to average month-end balances as follows: add the month-end investment balances and the beginning of the year investment balance, then divide the total by thirteen.

[20] RMA *Annual Statement Studies* uses the ratio "net sales/total assets" to measure a firm's ability to generate sales in relation to total assets. Net sales/total assets is computed as follows: net sales ÷ total assets.

DEPRECIATION/AMORTIZATION EXPENSE RATIO

Computation: Depreciation/amortization expense ÷ Gross revenues

Interpretation: This ratio reflects the relationship of depreciation and amortization expense to gross revenues.

Limitations:

1. This ratio is very sensitive to the accuracy and reliability of the information used in the calculations.

2. The depreciation/amortization expense ratio varies by farm type and by the depreciation/amortization methods used.

INTEREST EXPENSE RATIO

Computation: Total farm interest expense ÷ Gross revenues

Interpretation: This ratio reflects the relationship of interest expense to gross revenues.

Limitations:

1. This ratio is very sensitive to the accuracy and reliability of the information used in the calculations.

NET FARM INCOME FROM OPERATIONS RATIO

Computation: Net farm income from operations ÷ Gross revenues[21]

Interpretation: This ratio reflects the relationship of net farm income from operations to gross revenues.

Limitations:

1. This ratio is very sensitive to the accuracy and reliability of the information used in the calculations.

2. Net farm income from operations is calculated on a pre-tax basis.

[21] This ratio can also be calculated using NFI. However, one must use caution in this approach because a gain/loss from the sale of a business asset, particularly farm real estate, can distort the result. In both approaches, the ratio is most meaningful for comparisons when calculated on a before-tax basis, allowing farms to be compared independently of taxes. This approach is recommended because the amount of tax owed for a particular year may be affected by losses from other years (e.g., net operating loss carryback and carryover, treatment of a net capital loss, etc.), special tax laws (e.g., investment tax credit), and the difficulty of separating taxes with respect to on-farm and non-farm earnings for sole proprietors with non-farm income.

IV. RECOMMENDATIONS ON UNIVERSAL INFORMATION MANAGEMENT

(This section is unchanged from the original Report approved in November, 1990.) The FFSC established the Universal Information Management Subcommittee to provide a database design based on the financial guidelines specified by the two other FFSC subcommittees. This section contains a conceptual outline of that design. It is included in hopes that the potential users of this system will review it and provide suggestions to the FFSC as to how it might best serve the farm financial industry. After review of these suggestions, a final committee report can be issued for use by private firms who wish to consider development, marketing, and support of a national "Farm Financial Standards — Management Information System" (FFS-MIS) and associated products.

THE USE OF GUIDELINES IN SOFTWARE PRODUCTS AND EDUCATIONAL MATERIALS

There will be continual involvement of the FFSC with representatives of private firms in order to provide advisory support and ensure that information and/or services meet user needs. In addition, the FFSC has discussed implementation of a program for agricultural accounting software vendors who incorporate the guidelines into their software. This program could alert buyers of software products as to whether the calculations and financial reports are consistent with those recommended by the FFSC. As an added benefit, programs that comply could be allowed to generate data files that can be sent directly to the FFS-MIS database.

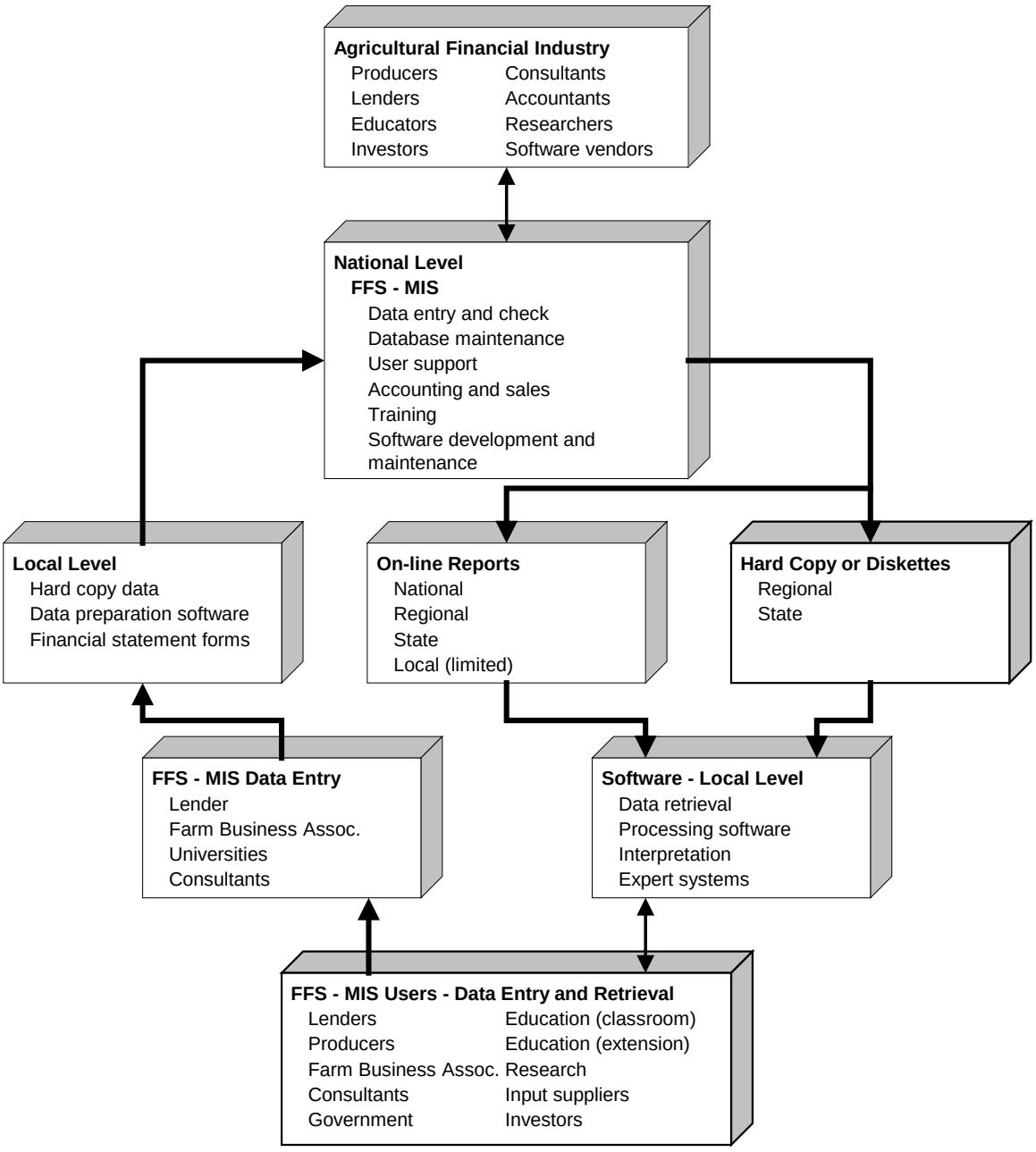
The FFSC recognizes that lender- and producer-level software products that incorporate the guidelines are being developed by individuals and firms who have the capability and funding sources. Furthermore, educational efforts using the guidelines are already underway in the ABA and the Extension Service USDA. Others have expressed an interest in developing educational materials that will utilize the guidelines. Presently the list of educational programs includes, but is not limited to, manuals, video tapes, and financial statement forms.

THE USE OF GUIDELINES IN A FINANCIAL DATABASE

The concept of assembling a financial database is not new. However, agriculture is certainly behind other sectors. An example of a well-established database is one assembled for the commercial sector by Risk Management Association (RMA), who publishes performance data on a great number of business firms. Agriculture can certainly learn from the experience and procedures of RMA (and others). Indeed, one of the FFSC members, an RMA representative, has already supplied insights into opportunities associated with a national financial performance database.

Improving financial performance evaluation in agriculture is a long-term proposition. The Financial Guidelines For Agricultural Producers are a start, and unity behind them will be beneficial to everyone in the agricultural industry. The sooner cooperative efforts lead to utilization of the guidelines, the sooner benefits will be realized. U.S. agricultural producers and lenders will be the ultimate beneficiaries of this effort. The challenge will then be to make an FFS-MIS a useful and profitable system for users and the firms that operate the system.

Figure 1. Farm Financial Standards Management Information System (FFS-MIS)



CAPABILITIES OF THE SYSTEM

An FFS-MIS will be implemented as an on-line (accessible twenty-four hours a day) computer system. The FFS-MIS could also accommodate mail-in data and generate annual hard copy reports.

Software will be developed that facilitates easy data entry into this national database and that will allow local users to retrieve information. The software would have the capability of allowing users to process their own data in a manner similar to the processing done at the national level. Local level software could allow for graphic presentation of data and could provide first level analysis and diagnostic interpretation. In recognition of different farm or ranch types, as well as regional and local differences, the national FFS-MIS would allow each user to sort data to meet his/her specific needs. However, the system would protect the identity of any specific farm or institution contributing to the database. Figure 1 provides a descriptive diagram of FFS-MIS.

Users of an on-line system would include lenders, consultants, educators, government, secondary market investors, researchers, and individual agricultural producers. Access to the on-line computerized FFS-MIS could be controlled through a centralized system. Each local user could be linked to the central system. No fee would be charged to enter data into the system, but a user fee may be assessed for retrieving data from the system. Users unable to access the system by computer could subscribe to hard copy printouts of the database.

There are major issues to be addressed before an FFS-MIS can be developed. These issues are the determination of the final set of financial data that is to be processed and the reporting format. Furthermore, all financial data to be collected, calculations, and definitions must be decided on before a database can be developed. A detailed manual will be written to provide specific instructions on how data is entered, calculated, retrieved, etc. An example format of a future report from the database is presented in Table 1.

FINANCIAL DATA STRATIFICATION

Census classifications, USDA classifications, and Standard Industrial Classification (SIC) codes for agriculture presently provide a possible basis for database reports using Farm Financial Guidelines. It will be the responsibility of the FFSC to poll database users in order to place parameters on what data from each farm might be included in the data set. The agricultural classifications combined with the collected farm data ultimately will determine the actual data sorts and reporting options.

The distribution of the number of farms by size (areas of land) and income level (greater than $10,000), based on the 1987 Census of Agriculture, is shown in Table 2. Acreage has been included in the table to emphasize the significance of the distribution of total farm income. The FFSC also believes this illustrates that acreage is not an adequate measure of farm size for the purposes of financial analysis data reporting.

Table 1. National Farm Financial Standards Report—Example of One Customer vs. Regional Standards Data

USER ID #: 123456789 — Fiscal year: 'XX

Region: Corn Belt States — SIC Type: 0241
Dairy farm, including dairy replacement — Observed #: 200
Income: greater than $40,000 — Customer ID: (Optional)

(Sort - All dairy farms in the Corn Belt Region with over $40,000 gross income.)

		.....Regional Data.....		
	Customer Data	**High Quartile Mean**	**Mid Quartile Mean**	**Low Quartile Mean**
Liquidity				
Current Ratio	XX	:	:	|
Solvency				|
Debt/Asset Ratio	XX	:	:	|
Equity/Asset Ratio	XX	:	:	|
Debt/Equity Ratio	XX	:	:	|
Profitability				|
Rate of Return on Farm Assets	XX	:	:	|
Rate of Return on Farm Equity	XX	:	:	|
Operating Profit Margin Ratio	XX	:	:	|
Net Farm Income (NFI)	XX	:	:	|
Repayment Capacity				|
Term Debt and Capital				|
Lease Coverage Ratio	XX	:	:	|
Financial Efficiency				|
Asset Turnover	XX	:	:	|
Operational Ratios				|
Operating Expense	XX	:	:	|
Depreciation/Amortization Expense	XX	:	:	|
Interest Expense	XX	:	:	|
NFI from Operations	XX	:	:	|

The distribution of farms by income level is illustrated by Table 3. It shows the percentage of the total number of U.S. farms for a given income level, and the percentage of the total U.S. farm income each income level controls. Comparisons are made between the distributions in 1976 and 1986.

Table 3 shows that by 1986, the number of farms with gross income greater than $250,000 almost doubled from the 1976 levels. Also, in 1986, approximately seventy-five percent of the value of U.S. farm income came from farms having income in excess of $100,000, while these farms represented less than fourteen percent of the number of farm operations in the U.S. This information provides evidence of a trend towards fewer, larger farm operations, controlling an increasing portion of the total U.S. farm income. Consequently, the FFSC believes it would be beneficial to provide stratification based on the level of farm income as a measure of farm size.

This stratification should be determined by the type of enterprise that results in the farm's greatest concentration of income. The USDA classifies farms into a specific farm type if fifty percent or more of the farm income is generated from the specified enterprise. These farm type classifications could follow the SIC codes (Office of Management and Budget, 1987), which provide for ten primary farm types with a subsequent division of twenty more under these categories. Table 4 provides a sample of these categories for your review.

Table 2. Classification of Farms by Size and Income in the 1987 Census

Size of Farm	Total Number of Farms	Number With Income Over $10,000	% of Total Over $10,000
1 to 9 acres	183,257	44,642	24
10 to 49 acres	412,437	73,465	18
50 to 179 acres	644,849	244,068	23
180 to 499 acres	479,294	356,450	75
500 to 999 acres	200,058	181,018	90
1,000 acres or more	168,864	159,938	95
Totals	2,087,759	1,059,573	

Source: *USDA 1987 Census of Agriculture-Advance Report*

Table 3. Farm Structure by Level of Income

Farm Structure
Distribution by number and income, 1976 vs. 1986

Farm Income Level (in $1,000's)	1976 Farm Numbers	1976 Gross Income	1986 Farm Numbers	1986 Gross Income
	..... Percent			
Under 40	80.5	24.3	72.9	11.2
40 to 99	13.0	23.2	13.3	14.7
100 to 249.99	4.3	16.3	9.5	24.0
250 above	2.3	36.2	4.3	50.1

Source: *Agriculture Today and Tomorrow: The Cooperative Challenge*

Table 4. Standard Industrial Classification Codes for Agriculture

Industry Group #	Industry #	Description		
011		**Cash Grain**		
	0111	Wheat		
	0112	Rice		
	0115	Corn		
	0116	Soybeans		
	0119	Other cash grains		
		Barley	Mustard seed	Oats
		Beans, dry	Buckwheat	Flax
		Cow peas	Lentil	Popcorn
		Rye	Safflower	Sorghum
		Peas, dry	Sunflower	Milo
		Other grain		
013		**Other Field Crops**		
	0131	Cotton		
	0132	Tobacco		
	0133	Sugar cane and beets		
	0134	Potatoes, except sweet and yams		
	0139	Other field crops		
		Alfalfa	Hops	Timothy
		Broomcorn	Mint	Yams
		Clover	Peanuts	Grasses
		Hay	Potatoes, sweet	
016		**Vegetables and Melons**		
	0161	Vegetables and melons		
		All, including sweet corn		
017		**Fruit and Nuts**		
	0171	Berry crops		
	0172	Grapes		
	0173	Tree nuts		
	0174	Citrus		
	0175	Deciduous tree fruit		
	0179	Other fruit and nuts		
		Avocado	Kiwi	Banana
		Olive	Coffee	Pineapple
		Date	Plantain	Fig
		Other tropical fruit		
018		**Horticultural Specialties**		
	0181	Ornamental floriculture and nursery products		
	0182	Food crops grown under cover		

Table 4. Standard Industrial Classification Codes for Agriculture — (Continued)

019		**General Farms, Primarily Crop**
	0191	Derive at least 50% of their income from crops or nursery enterprises of some sort, but less than 50% in a single 3-digit Industry Group
021		**Livestock, Except Dairy and Poultry**
	0211	Beef feedlots, confined for 30 days or more
	0212	Beef cattle, non-feedlot feeder (yearling operation) cow/calf
	0213	Hogs, all types including contract feeding feeder pig farrow-to-finish market hog
	0214	Sheep and goats
	0219	General livestock, except dairy and poultry Derive at least 50% of their income from livestock, but less than 50% in a single 3-digit Industry Group
024		**Dairy**
	0241	Dairy, including dairy replacement
025		**Poultry and Eggs**
	0251	Broiler, fryer, rooster
	0252	Chicken eggs
	0253	Turkey eggs
	0254	Poultry hatcheries
	0259	Poultry and eggs not previously classified Duck — Quail — Pigeon Pheasant — Geese — Squab Other eggs
027		**Animal Specialties**
	0271	Fur bearing animals
	0272	Horse and other equines
	0273	Animal agriculture
	0279	Animal specialties not previously classified
029		**General Farm, Primarily Livestock and Animal Specialties**
	0291	Derive at least 50% of their income from livestock and animal specialties of some sort, but less than 50% in any 3-digit Industry Group

Source: *Standard Industrial Classification Manual, 1987*

The FFSC believes that in order to make farm comparative data information from the FFS-MIS useful, it will be necessary to provide regional information. The best comparisons will be obtained when these regions exhibit homogeneous geographic, production, land, and market characteristics. Recently, the USDA published information suggesting a division of states into regions (Table 5).

Table 5. States in Farming Regions (48 States)

Northeast States	DE, MD, NJ, PA, NY, CT, RI, VT, NH, ME, MA
Appalachian States	WV, VA, NC, TN, KY
Southeast States	SC, GA, AL, FL
Delta States	LA, MS, AR
Corn Belt States	OH, IN, IL, MO, IA
Lake States	MI, WI, MN
North Plains States	ND, SD, NE, KS
South Plains States	OK, TX
Mountain States	NM, AZ, CO, UT, WY, MT, ID, NV
Pacific States	CA, OR, WA

Source: *USDA-Regional Farm Financial and Operating Characteristics by Sales and Farm Type*

These ten regions, as defined in the above table, represent a grouping of states with similarities in land values, soils, production yields, farm operations, and availability of markets. The FFSC recommends these regions for the purposes of reporting financial guidelines comparison data.

The reporting capabilities of FFS-MIS will be determined by the way data are identified and different ways that it can be classified. The user will have the option to control the way the data are presented in the reports (data sorts). The sorts chosen can be based on the financial data (e.g., assets, gross income, value of farm production), as well as descriptive information (type of farm, region, state, size, etc.). Sorts will be done at a central database and the user will select from a menu-driven set of options. Decisions on standardized, specific, published reports can be made through surveys of the FFSC members and on-going communication with users. The printed report format should be selected from the classifications that are most frequently requested.

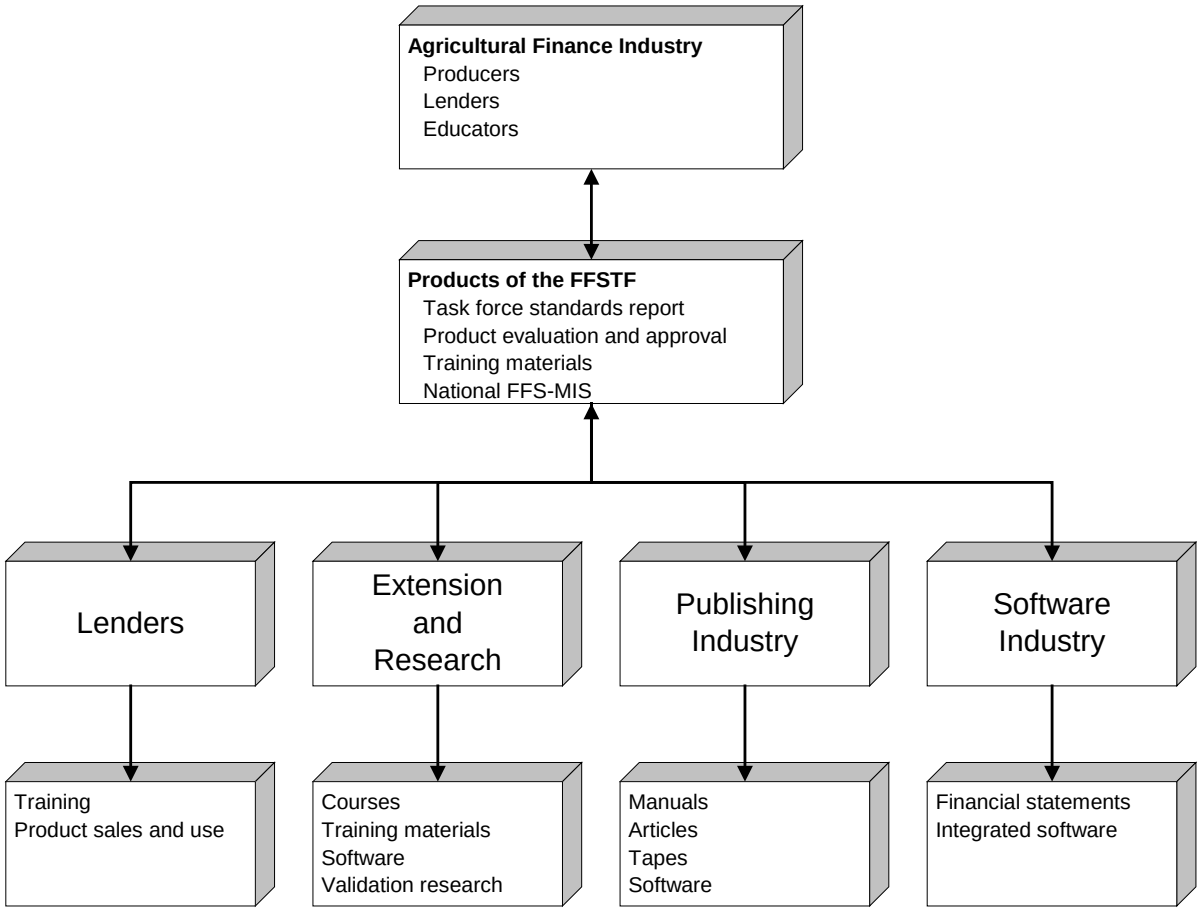
Eventually, software will be developed that allows the user to compare an individual farm with sorted data that is downloaded from the central data files or from specific presorted data available on diskettes that are obtained through subscription to a service. This software will give the user the capability of creating a data set from customers in the local market area for comparison with data from FFS-MIS.

POTENTIAL SUPPORTING PRODUCTS AND CONTRIBUTIONS

Many spin-off products can be developed and existing products enhanced with the Financial Guidelines For Agricultural Producers (see Figure 2). Extension and private sector publications, forms, and software can incorporate the guidelines. Furthermore, an enhanced data set can expand research data and expand our ability to enhance evaluation, advisory, and documentation procedures.

The FFSC recognizes that many of the things accountants, agricultural economists, and financial analysts do today are correct and are extremely valuable to producers and lenders. However, we must all accept the fact that our "good procedures and tools" are not widely utilized in agriculture. Thus, it is felt that any contributions that bring agriculture to a modern business financial analysis and management level will contribute to profitability and competitiveness of the sector.

Figure 2. Products and Participants



APPENDIX A: EXAMPLE FINANCIAL STATEMENTS

This Appendix contains an example of financial statement formats that are intended to assist the reader in the interpretation of the Report. It is impossible for the FFSC to offer example financial statements that would be directly usable by many of the diverse enterprises and operations in American agriculture. Therefore, we have tried to illustrate in this set of statements one way in which the reporting standards included in this document can be implemented.

The set of financial statements included in this Appendix illustrate one format for a "combined" set of financial statements that includes business and personal assets and liabilities.

While GAAP-based financial statements may be preferable, when such information is not available, alternative financial statement formats can be used. The FFSC expects numerous formats of financial statements will comply with the intent of the standards and, in practice, the exact appearance of any given format may be different from the statements here. For example, balance sheet presentation of cost basis values of capital assets can be disclosed in a secondary balance sheet (as shown here), in supporting schedules, in a double column format, or in parenthetical disclosure on the face of the financial statement. Certain preparers may choose to continue to utilize a three category balance sheet in the near term. The level of detail shown on the face of the financial statements may also vary based on the type of enterprise and overall complexity of the operation. However, we do feel that the attached statements represent, in most cases, an example of the amount of detail that would be acceptable.

The FFSC has included supporting schedules for the balance sheet — expecting that users would also utilize this type of format in some cases to provide additional detail on the income statement. The absence of such schedules for the income statement in this example is not meant to imply that they are not appropriate.

Finally, sample text for key notes to the financial statements have not been included. However, such notes are a critical component of the overall package and, at a minimum, should include:

1. Description of basic accounting policies, including practices for revenue and expense recognition procedures and depreciation/amortization methods.

2. Disclosure of the source for determination of market values for capital assets.

3. Disclosure of the terms of capital lease obligations.

4. Disclosure of commitments of the operation, including minimum payments due within the next twelve months and in total for all operating leases.

5. Disclosure of any contingent liabilities.

JOHN AND MARY FARMER
BALANCE SHEET (MARKET VALUE)
BUSINESS ASSETS AND LIABILITIES (WITH PERSONAL SEPARATED)
AS OF 12/31/X7 AND 12/31/X8

ASSETS	12/31/X8	12/31/X7	LIABILITIES	12/31/X8	12/31/X7
Cash	$ 101,743	$ 113,421	Accounts Payable	$ 6,578	$ 0
Accounts Receivable [Livestock]	14,300	11,835	Notes Due Within One Year (Sched. 5)	102,488	113,934
Accounts Receivable [Crops]	0	0	Current Portion of Term Debt (Sched. 5)	23,458	21,329
Inventories Livestock (Sched. 1)	103,005	78,879	Overdrafts	0	0
Inventories Crops (Sched. 1)	74,888	68,291	Accrued Interest, Current Loans (Sched. 5)	4,111	6,547
Inventories Feed & Supplies (Sched. 1)	2,688	2,387	Accrued Interest, Non-Current Loans (Sched. 5)	9,996	11,566
Prepaid Expenses	3,500	3,500	Income Taxes Payable	0	6,495
Cash Investment in Growing Crops	21,000	21,000	Current Deferred Income Tax (Sched. 6)	74,261	54,049
Other Current Assets	890	890	Other Accrued Expenses	0	0
			Other Current Liabilities	0	0
Total Current Assets	$ 322,014	$ 300,203	Total Current Liabilities	$ 220,892	$ 213,920
Breeding Livestock (Sched. 2)	18,850	13,400	Non-Current Portion - Notes Payable (Sched. 5)	25,785	36,645
Machinery & Equipment (Sched. 3)	216,500	235,000	Non-Current Portion - Real Estate Debt (Sched. 5)	166,180	178,779
Investments in Capital Leases	0	0	Non-Current Deferred Income Tax (Sched. 6)	142,482	140,714
Investments in Other Entities	0	0	Other Non-Current Liabilities	0	0
Investments in Cooperatives	27,650	27,650			
Real Estate (Sched. 4)	517,750	517,750			
Buildings & Improvements (Sched. 4)	5,000	7,000			
Other Assets	0	0			
Total Non-Current Assets	$ 785,750	$ 800,800	Total Non-Current Liabilities	$ 334,447	$ 356,138
			Total Liabilities	$ 555,339	$ 570,058
			Retained Capital	285,933	262,749
			Valuation Equity	266,492	268,196
			FARM BUSINESS EQUITY	552,425	530,945
Total Business Assets	$ 1,107,764	$ 1,101,003	Total Business Liabilities and Owner Equity	$ 1,107,764	$ 1,101,003
Personal Assets (Sched. 8)	$ 77,250	$ 73,500	Personal Liabilities and Related Taxes (Sched. 8)	$ 6,753	$ 5,818
			Total Liabilities	562,092	575,876
			Total Net Worth	622,922	598,627
Total Assets	$ 1,185,014	$ 1,174,503	Total Liabilities and Net Worth	$ 1,185,014	$ 1,174,503

NOTE: This Balance Sheet includes both personal and business assets and liabilities

JOHN AND MARY FARMER
BALANCE SHEET (BOOK VALUE)
BUSINESS ASSETS AND LIABILITIES
AS OF 12/31/X7 AND 12/31/X8

ASSETS	12/31/X8	12/31/X7
Cash	$ 101,743	$ 113,421
Accounts Receivable [Livestock]	14,300	11,835
Accounts Receivable [Crops]	0	0
Inventories Livestock (Sched. 1)	103,005	78,879
Inventories Crops (Sched. 1)	74,888	68,291
Inventories Feed & Supplies (Sched. 1)	2,688	2,387
Prepaid Expenses	3,500	3,500
Cash Investment in Growing Crops	21,000	21,000
Other Current Assets	890	890
Total Current Assets	$ 322,014	$ 300,203
Breeding Livestock (Sched. 2)	16,220	12,100
Machinery & Equipment (Sched. 3)	197,513	216,806
Investments in Capital Leases	0	0
Investments in Other Entities	0	0
Investments in Cooperatives	27,650	27,650
Real Estate (Sched. 4)	184,750	184,750
Buildings & Improvements (Sched. 4)	5,000	7,000
Other Assets	0	0
Total Non-Current Assets	$ 431,133	$ 448,306
Total Business Assets	$ 753,147	$ 748,509

LIABILITIES	12/31/X8	12/31/X7
Accounts Payable	$ 6,578	$ 0
Notes Due Within One Year (Sched. 5)	102,488	113,934
Current Portion of Term Debt (Sched. 5)	23,458	21,329
Overdrafts	0	0
Accrued Interest, Current Loans (Sched. 5)	4,111	6,547
Accrued Interest, Non-Current Loans (Sched. 5)	9,996	11,566
Income Taxes Payable	0	6,495
Current Deferred Income Tax (Sched. 6)	74,261	54,049
Other Accrued Expenses	0	0
Other Current Liabilities	0	0
Total Current Liabilities	$ 220,892	$ 213,920
Non-Current Portion - Notes Payable (Sched. 5)	25,785	36,645
Non-Current Portion - Real Estate Debt (Sched. 5)	166,180	178,779
Non-Current Deferred Income Tax (Sched. 6)	54,357	56,416
Other Non-Current Liabilities	0	0
Total Non-Current Liabilities	$ 246,322	$ 271,840
Total Liabilities	$ 467,214	$ 485,760
Retained Capital	285,933	262,749
FARM BUSINESS EQUITY	285,933	262,749
Total Business Liabilities and Owner Equity	$ 753,147	$ 748,509

JOHN AND MARY FARMER
BALANCE SHEET
SUPPLEMENTARY SCHEDULES
AS OF 12/31/X7 AND 12/31/X8

Schedule 1 -- Inventories

		12/31/X8			12/31/X7		
Commodity	Units	Number	Price/Unit	Total	Number	Price/Unit	Total
Corn for Sale	Bushels	32,560.00	$ 2.30	$ 74,888	29,691.60	$ 2.30	$ 68,291
Total Crop Inventories				$ 74,888			$ 68,291
Commodity	Units	Number	Cost/Unit	Total	Number	Price/Unit	Total
Feed Supplement	Tons	5.20	335.00	1,742	4.30	335.00	1,441
Diesel Fuel	Gallons	860.00	1.10	946	860.00	1.10	946
Total Feed & Supply Inventories				$ 2,688			$ 2,387
Commodity	Units	Number	Price/Unit	Total	Number	Price/Unit	Total
Market Cattle/Heifers/1000 lbs	CWT	45.00	68.00	30,600	45.00	68.00	30,600
Market Cattle/Steers/1150 lbs	CWT	57.00	70.00	45,885	35.00	70.53	28,389
Feeder Cattle/Steers/850 lbs	CWT	40.00	78.00	26,520	30.00	78.00	19,890
Total Market Livestock Inventories				$103,005			$ 78,879

Schedule 2 -- Breeding Livestock

	As of 12/31/X8							As of 12/31/X7						
Type	Number	Base Value Per Head	Total Cost/Base	Acc Depr	Total Book Value	Mkt Value Per Head	Total Market	Number	Base Value Per Head	Total Cost/Base	Acc Depr	Total Book Value	Mkt Value Per Head	Total Market
Purchased Breeding Stock														
Angus Bulls	3	N/A	$ 7,400	$ 3,680	$ 3,720	$ 1,700	$ 5,100	2	N/A	$ 4,600	$ 2,500	$ 2,100	$ 1,700	$ 3,400
Raised Breeding Stock														
Stock Cows	25	500	12,500	N/A	12,500	550	13,750	20	500	10,000	N/A	10,000	500	10,000
Total Breeding Livestock	28		$ 19,900	$ 3,680	$ 16,220	N/A	$18,850	22		$ 14,600	$ 2,500	$ 12,100	N/A	$13,400

Schedule 3 -- Machinery & Equipment

	As of 12/31/X8				As of 12/31/X7			
Type	Cost	Acc Depr	Net Book	Mkt Value	Cost	Acc Depr	Net Book	Mkt Value
Vehicles	$ 32,500	$ 17,500	$ 15,000	$ 16,500	$ 32,500	$ 14,000	$ 18,500	$ 20,000
Machinery	248,759	72,746	176,013	193,000	229,969	45,994	183,975	200,000
Livestock Equipment	45,653	39,153	6,500	7,000	45,653	31,322	14,331	15,000
Total Machinery and Equipment	$ 326,912	$129,399	$197,513	$216,500	$308,122	$ 91,316	$216,806	$235,000

Schedule 4 -- Real Estate & Improvements

		As of 12/31/X8					As of 12/31/X7				
Type	Acquired	Cost	Acc Depr	Net Book	Mkt Value Per Acre	Total Market	Cost	Acc Depr	Net Book	Mkt Value Per Acre	Total Market
Land											
Johnson Farm -- 235 Acres	Y5	$ 152,750		$152,750	$ 1,250	$293,750	$152,750		$152,750	$ 1,250	$293,750
Section 18 Farm -- 160 Acres	Y1	32,000		32,000	1,400	224,000	32,000		32,000	1,400	224,000
Improvements											
Feedlot	Y9	78,000	73,000	5,000		5,000	78,000	71,000	7,000		7,000
Total Real Estate & Improvements		$ 262,750	$ 73,000	$189,750		$522,750	$262,750	$ 71,000	$191,750		$524,750

JOHN AND MARY FARMER
BALANCE SHEET
SUPPLEMENTARY SCHEDULES
AS OF 12/31/X7 AND 12/31/X8

Schedule 5 -- Debt Schedule -- 'X8

						During 'X8					As of 12/31/X8			
Creditor	Purpose	Original Term	Inception	Maturity	Original Amount	Interest Paid (Cash)	Principal Paid	Payment Date	Interest Rate	Est. Amount of Next Payment	Current Principal (Within 12 Mo)	Non-Current Principal	Total Principal	Accrued Interest
Notes Due Within One Year														
FNB of Anytown*	Operating	1 Yr	3/1/X8	3/1/X9	*	$ 8,458	$ 87,000	28-Feb	12%V	N/A	$ 75,895	$ 0	$ 75,895	$ 3,549
CCC	Inventory	9 Mo	10/15/X8	5/1/X9	$ 26,593	1,472	35,644	15-May	7.75%V	N/A	26,593	0	26,593	562
Total Notes Due Within One Year						9,930	122,644				102,488	0	102,488	4,111
Non-Real Estate Debt														
FNB of Anytown	Machinery	5 Yr	2/1/X6	2/1/X11	55,000	5,561	9,697	15-Feb	12%V	$ 15,258	10,860	25,785	36,645	3,843
Total Non-Real Estate Debt						5,561	9,697			15,258	10,860	25,785	36,645	3,843
Real Estate Debt														
FLBA of CountySeat	Home Farm	20 Yr		'X22	120,000	12,174	3,391	15-Nov	11.5%V	15,565	3,781	98,691	102,472	1,485
ABC Insurance	Johnson Farm	20 Yr		'X15	150,000	5,918	8,241	15-Feb	7.0%F	14,159	8,817	67,489	76,306	4,668
Total Real Estate Debt						18,092	11,632			29,724	12,598	166,180	178,778	6,153
Grand Total -- All Debt						$ 33,583	$ 143,973			$ 44,982	$ 125,946	$ 191,965	$ 317,911	$ 14,107

* This note is a revolving line of credit, with a total available balance of $150,000

Schedule 5 -- Debt Schedule -- 'X7

						During 'X7			As of 12/31/X7			
Creditor	Purpose	Original Term	Inception	Maturity	Original Amount	Interest Paid (Cash)	Principal Paid		Current Principal (Within 12 Mo)	Non-Current Principal	Total Principal	Accrued Interest
Notes Due Within One Year												
FNB of Anytown*	Operating	1 Yr	3/1/X7	3/1/X8	**	$ 8,458	$ 52,000		$ 78,290	$ 0	$ 78,290	$ 6,120
CCC	Inventory	9 Mo	10/15/X7	5/1/X8	$ 26,593	0	0		35,644	0	35,644	427
Total Notes Due Within One Year						8,458	52,000		113,934	0	113,934	6,547
Non-Real Estate Debt												
FNB of Anytown	Machinery	5 Yr	2/1/X6	2/1/X11	55,000	6,600	8,658		9,697	36,645	46,342	4,860
Total Non-Real Estate Debt						6,600	8,658		9,697	36,645	46,342	4,860
Real Estate Debt												
FLBA of CountySeat	Home Farm	20 Yr		'X22	120,000	12,524	3,041		3,391	102,472	105,863	1,534
ABC Insurance	Johnson Farm	20 Yr		'X15	150,000	6,457	7,702		8,241	76,307	84,548	5,172
Total Real Estate Debt						18,981	10,743		11,632	178,779	190,411	6,706
Grand Total -- All Debt						$ 34,039	$ 71,401		$ 135,263	$ 215,424	$ 350,687	$ 18,113

** This note is a revolving line of credit, with a total available balance of $150,000

JOHN AND MARY FARMER
BALANCE SHEET
SUPPLEMENTARY SCHEDULES
AS OF 12/31/X7 AND 12/31/X8

Schedule 6 -- Deferred Taxes

	'X8			'X7		
Current Portion of Deferred Taxes	Value	Tax Basis	Difference	Value	Tax Basis	Difference
Deferred Income Items						
Inventories	$ 180,581	$ 0	$ 180,581	$ 149,557	$ 0	$ 149,557
Accounts Receivable	14,300	0	14,300	11,835	0	11,835
Prepaid Expenses	3,500	0	3,500	3,500	0	3,500
Cash Investment in Growing Crops	21,000	0	21,000	21,000	0	21,000
Excess of Carrying Value over Tax Basis of Current Assets			219,381			185,892
Deferred Income liability on Crop Insurance, Disaster Payments and Contracts			50,000			12,000
Total Deferred Income			269,381			197,892
Deferred Expense Items						
Accounts Payable			6,578			0
Accrued Interest			14,107			18,113
Income Taxes Payable, NOL & other deductions			23,671			22,748
Other Accrued Expenses			0			0
Total Deferred Expenses			44,356			40,861
Net Deferred Income Subject to Income Tax			$ 225,025			$ 157,031
Estimated Federal and State Income Tax		24.85%	55,920		23.91%	37,553
Estimated Self-Employment Tax			18,341			16,496
(a) Total Deferred Tax Liability Related to Current Assets and Current Liabilities			$ 74,261			$ 54,049
(b) Total deferred tax liability related to valuation of current assets			0			0

Non-Current Portion of Deferred Taxes Related to Base Value Treatment of Raised Breeding Livestock & Book Value of Assets

	Book Value	Tax Basis	Difference	Book Value	Tax Basis	Difference
Raised Breeding Livestock	$ 12,500	$ 0	$ 12,500	$ 10,000	$ 0	$ 10,000
Purchased Breeding Livestock	3,720	0	3,720	2,100	0	2,100
Machinery and Equipment	197,513	0	197,513	216,806	0	216,806
Real Estate and Improvements	189,750	184,750	5,000	191,750	184,750	7,000
Net Deferred Income Subject to Income Tax			$ 218,733			$ 235,906
Estimated Tax Rate		x	24.85%		x	23.91%
(c) Total Deferred Tax Liability Related to Book Value of non-current assets			**$54,357**			**$56,416**

Non-Current Portion of Deferred Taxes Related to Valuation Equity

	Market Value	Book Value/ Base Value	Difference	Market Value	Book Value/ Base Value	Difference
Raised Breeding Livestock	$ 13,750	$ 12,500	$ 1,250	$ 10,000	$ 10,000	$ 0
Purchased Breeding Livestock	5,100	3,720	1,380	3,400	2,100	1,300
Machinery and Equipment	216,500	197,513	18,987	235,000	216,806	18,194
Real Estate and Improvements	522,750	189,750	333,000	524,750	191,750	333,000
Deferred Taxable Income Related to Excess of Market Values Over Base Values/Book Value of Non-current Assets			$ 354,617			$ 352,494
Estimated Tax Rate		x	24.85%		x	23.91%
(d) Total Deferred Tax Liability Related to Valuation Equity			**$88,125**			**$84,298**
Total Non-Current Portion of Deferred Taxes (c + d)			**$ 142,482**			**$ 140,714**

Estimated Taxes on Personal Assets

	Market Value	Tax Basis	Difference	Market Value	Tax Basis	Difference
Personal Assets	$ 77,250	$ 61,800	$ 15,450	$ 73,500	$ 60,800	$ 12,700
Estimated Taxable Income Related to Personal Assets/Liabilities			15,450			12,700
Estimated Tax Rate		x	0%		x	0%
Total Estimated Tax Expense Related to Personal Assets/Liabilities			$ 0			$ 0

Reconciliation of Total Change in Deferred Taxes

	'X8	'X7	Change
Current Portion of Deferred Tax Liability (a)	$ 74,261	$ 54,049	$20,212
Non-Current Portion of Deferred Tax Liability Related to Income (c)	54,357	56,416	(2,059)
Total Increase (Decrease) in Deferred Tax Liability Used in calculating Total Income Tax Expense in 'X8 (see Income Statement)			18,153
Non-Current Portion of Deferred Tax Liability Related to Valuation Equity (d) (see Statement of Owner Equity)	88,125	84,298	(3,827)
Total Increase (Decrease) in Deferred Tax Liability			$ 14,326

JOHN AND MARY FARMER
BALANCE SHEET
SUPPLEMENTARY SCHEDULES
AS OF 12/31/X7 AND 12/31/X8

Schedule 7 -- Valuation Equity

	'X8			'X7		
Description	Market Value	Book Value	Difference	Market Value	Book Value	Difference
Raised Breeding Livestock	$ 13,750	$ 12,500	$ 1,250	$ 10,000	$ 10,000	$ 0
Purchased Breeding Livestock	5,100	$ 3,720	1,380	3,400	2,100	1,300
Machinery & Equipment	216,500	197,513	18,987	235,000	216,806	18,194
Real Estate and Improvements	522,750	189,750	333,000	524,750	191,750	333,000
Non - Current Portion -- Deferred Taxes	(88,125)		(88,125)	(84,298)		(84,298)
Total Valuation Equity			$ 266,492			$ 268,196

Schedule 8 -- Personal Assets/Liabilities

	'X8		'X7	
Personal Assets	Market	Estimated	Market	Estimated
Description	Value	Cost*	Value	Cost*
Savings Bonds	$ 7,500	$ 7,500	$ 4,500	$ 4,500
Marketable Securities	24,750	18,300	23,000	18,300
Retirement Accounts	22,000	13,000	20,000	12,000
'X0 Oldsmobile	11,000	11,000	14,000	14,000
Household Goods	12,000	12,000	12,000	12,000
Total Personal Assets	$ 77,250	$ 61,800	$ 73,500	$ 60,800

Personal Liabilities	Market	Market
Description	Value	Value
Credit Cards	$ 750	$ 750
Estimated Taxes on Personal Assets	5,253	4,318
Accrued Income Tax Expense -- Non-Business Income	750	750
Total Personal Liabilities	$ 6,753	$ 5,818

*This amount is used for calculation of estimated taxes only -- since losses on the sale of personal assets are not deductible, this amount is the lower of estimated cost or market value.

JOHN AND MARY FARMER
TAX DEPRECIATION REPORT
FOR THE PERIODS JANUARY 1, 'X8 THRU DECEMBER 31, 'X8

Asset	Property Description	Date Acquired	Tax Method	Tax Period	Tax Sec 179 Exp	Tax Cost	Tax Prior Depreciation	Tax Current Depreciation	Tax End Depr	Tax Net Book Value
IMPROVEMENTS										
	Feedlot	1/01/X0	150DB	5	10,000	70,000	70,000	0	70,000	0
	Feedlot 1	1/01/X7	150DB	5	4,000	4,000	4,000	0	4,000	0
	Feedlot 2	1/01/X7	150DB	5	4,000	4,000	4,000	0	4,000	0
	Total Improvements				18,000	78,000	78,000	0	78,000	0
LAND										
	Land	1/01/83	Land	0	0	32,000	0	0	0	32,000
	Land	1/01/X6	Land	0	0	152,750	0	0	0	152,750
	Total Land				0	184,750	0	0	0	184,750
LIVESTOCK EQUIPMENT										
	Cattle Trailer	1/01/X4	150DB	7	15,653	15,653	15,653	0	15,653	0
	Cattle Equipment	1/01/X4	150DB	7	15,000	15,000	15,000	0	15,000	0
	Cattle Equipment	1/01/X4	150DB	7	15,000	15,000	15,000	0	15,000	0
	Total Livestock Equipment				45,653	45,653	45,653	0	45,653	0
MACHINERY										
	Tractor	1/01/X5	150DB	7	97,600	100,000	100,000	0	100,000	0
	Combine	1/01/X7	150DB	7	92,000	129,969	129,969	0	129,969	0
	Tillage	1/01/X8	150DB	7	18,790	18,790		18,790	18,790	0
	Total Machinery				208,390	248,759	229,969	18,790	248,759	0
PURCHASED LIVESTOCK										
	Bull	1/01/X4	150DB	5	2,200	2,200	2,200	0	2,200	0
	Bull	1/01/X5	150DB	5	2,400	2,400	2,400	0	2,400	0
	Bull	1/01/X8	150DB	5	2,800	2,800		2,800	2,800	0
	Total Purchased Livestock				7,400	7,400	4,600	2,800	7,400	0
VEHICLES										
	Truck	1/01/X4	150DB	5	12,500	12,500	12,500	0	12,500	0
	Car	1/01/X4	150DB	5	10,000	10,000	12,500	0	10,000	0
	Pickup	1/01/X4	150DB	5	10,000	10,000	12,500	0	10,000	0
	Total Vehicles				32,500	32,500	37,500	0	32,500	0
	Grand Total				311,943	597,062	395,722	21,590	412,312	184,750

JOHN AND MARY FARMER
BOOK DEPRECIATION REPORT
FOR THE PERIODS JANUARY 1, 'X8 THRU DECEMBER 31, 'X8

Asset	Property Description	Date Acquired	Book Method	Book Period	Book Cost	Book Prior Depreciation	Book Current Depreciation	Book End Depr	Book Net Book Value
IMPROVEMENTS									
	Feedlot	1/01/X0	S/L	3	70,000	69,000	0	69,000	1,000
	Feedlot 1	1/01/X7	S/L	3	4,000	1,000	1,000	2,000	2,000
	Feedlot 2	1/01/X7	S/L	3	4,000	1,000	1,000	2,000	2,000
	Total Improvements				78,000	71,000	2,000	73,000	5,000
LAND									
	Land	1/01/83	Land	0	32,000	0	0	0	32,000
	Land	1/01/X6	Land	0	152,750	0	0	0	152,750
	Total Land				184,750	0	0	0	184,750
LIVESTOCK EQUIPMENT									
	Cattle Trailer	1/01/X4	S/L	5	15,653	10,522	2,631	13,153	2,500
	Cattle Equipment	1/01/X4	S/L	5	15,000	10,000	2,500	12,500	2,500
	Cattle Equipment	1/01/X4	S/L	5	15,000	10,800	2,700	13,500	1,500
	Total Livestock Equipment				45,653	31,322	7,831	39,153	6,500
MACHINERY									
	Tractor	1/01/X5	S/L	5	100,000	30,000	10,000	40,000	60,000
	Combine	1/01/X7	S/L	5	129,969	15,994	15,994	31,988	97,981
	Tillage	1/01/X8	S/L	5	18,790		758	758	18,032
	Total Machinery				248,759	45,994	26,752	72,746	176,013
PURCHASED LIVESTOCK									
	Bull	1/01/X4	S/L	5	2,200	1,360	340	1,700	500
	Bull	1/01/X5	S/L	5	2,400	1,140	380	1,520	880
	Bull	1/01/X8	S/L	5	2,800	0	460	460	2,340
	Total Purchased Livestock				7,400	2,500	1,180	3,680	3,720
VEHICLES									
	Truck	1/01/X4	S/L	5	12,500	6,000	1,500	7,500	5,000
	Car	1/01/X4	S/L	5	10,000	4,000	1,000	5,000	5,000
	Pickup	1/01/X4	S/L	5	10,000	4,000	1,000	5,000	5,000
	Total Vehicles				32,500	14,000	3,500	17,500	15,000
	Grand Total				597,062	164,816	41,263	206,079	390,983

JOHN AND MARY FARMER
FARM INCOME STATEMENT
FOR THE PERIODS JANUARY 1, 'X8 THRU DECEMBER 31, 'X8

Revenues			
Crop Revenues [cash]	149,644		
Increase/(Decrease) in Crop Inventories	*6,597*		
Increase/(Decrease) in Crop Accounts Receivable	*0*		
Total Crop Revenues		*156,241*	
Market Livestock [cash]	49,624		
Livestock Products [cash]	0		
Increase (Decrease) in Market Livestock Inventories	*24,126*		
Increase (Decrease) in Livestock Accounts Receivable	*2,465*		
Total Market Livestock Revenues		*76,215*	
Raised Breeding Livestock Sales [cash]	0		
Increase/(Decrease) in Base Value of Raised Breeding Livestock	*2,500*		
Purchased Breeding Livestock Sales [cash]	0		
Cost Basis of Purchased Breeding Livestock Sales	*0*		
Total Breeding Livestock Revenues		*2,500*	
Crop Insurance Proceeds	50,000		
Ag Program Payments	18,978		
Other Operating Income	765		
Increase (Decrease) in Other receivables	*0*		
Total Other Operating Revenues		69,743	
Gross Revenues			**304,699**
Operating Expenses			
Operating Expenses [cash]	164,776		
Cost of Purchased Feed [cash]	1,995		
(Increase)/Decrease Feed & Supplies Inventories	*(301)*		
Cost of Feeder Livestock Purchased [cash]	6,505		
(Increase)/Decrease Prepaid Expenses	0		
(Increase)/Decrease Cash Investment in Growing Crops	0		
(Increase)/Decrease Other Current Assets	0		
Increase/ (Decrease) Accounts Payable	*6,578*		
Increase/(Decrease) Other Accrued Expenses	*0*		
Depreciation Expense (Book Depreciation)	41,263		
Amortization of Capital leases	0		
Total Operating Expenses		*220,816*	
Operating Margin			***83,883***
Financing Expenses			
(Interest Income)	0		
Interest, current loans [cash]	9,930		
Increase/(Decrease) in Interest Payable on current loans	*(2,436)*		
Interest, noncurrent loans [cash]	23,653		
Increase/(Decrease) in Interest Payable on noncurrent loans	*(1,570)*		
Interest on capital leases	0		
Amortization of loan fees	0		
Total Financing Expenses		*29,577*	
Net Farm Income from Operations			***54,306***
Other Revenue & Expense			
Cash Received from Dispostion of Property, Equipment etc.	0		
Less: Net Book Value of Farm Assets Sold	0		
Total Gain (Loss) on Sale of Assets		0	
Miscellaneous Revenue [with accrual changes if any]	150		
Miscellaneous Expense [with accrual changes if any]	0		
Net Miscellaneous Revenue and Expense		*150*	
Net Farm Income, Accrual Adjusted			***54,456***
Income tax expense			
Income Tax Expense [cash] less tax on extraordinary items	6,495		
Increase/(Decrease) in Accrued Income Tax	*(6,495)*		
Increase/(Decrease) in Current Deferred Taxes related to income (Schedule 6)	*20,212*		
Increase/(Decrease) in Non-Current Deferred Taxes related to income (Schedule 6)	*(2,059)*		
Income Tax Expense		*18,153*	
Net Income Before Extraordinary Items			***36,303***
Extraordinary Items after tax		0	
Net Income, Accrual Adjusted			***$36,303***

JOHN AND MARY FARMER
STATEMENT OF FARM BUSINESS CASH FLOWS
FOR THE PERIODS JANUARY 1, 'X8 THRU DECEMBER 31, 'X8

Cash Flows from Operating Activities	
Cash Provided--Production Income	$199,268
Cash Used for Feeder Livestock, Purchased Feed, and Other Items for Resale	(8,500)
Cash Used for Operating Expenses	(164,776)
Cash Used for Interest	(33,583)
Net Cash Used for Income and Social Security Taxes	(6,495)
Net Cash Provided -- Other Operating Income	69,743
Net Cash Provided -- Other Miscellaneous Revenue	150
Net Cash Provided (Used) by Operating Activities	**$55,807**
Cash Flows from Investing Activities	
Cash Provided from Disposition of Breeding Livestock	0
Cash Provided from Disposition of Machinery and Equipment	0
Cash Provided from Disposition of Real Estate and Buildings	0
Cash Provided from Disposition of Marketable Securities	0
Cash Used for Acquisition of Breeding Livestock	(2,800)
Cash Used for Acquisition of Machinery and Equipment	(18,790)
Cash Used for Acquisition Real Estate and Buildings	0
Cash Used for Acquisition Marketable Securities	0
Net Cash Provided (Used) in Investing Activities	**($21,590)**
Cash Flows from Financing Activities	
Cash Provided by Operating Loans	111,198
Cash Provided by Term Debt Financing	0
Cash Provided -- Capital Contributions, Gifts, Inheritances	0
Cash Used for Principal on Term Debt	(21,329)
Cash used for Principal on Capital Lease Obligations	0
Cash Used to Repay Operating and CCC Loans	(122,644)
Owner Withdrawals (net statement of owner equity)	(13,120)
Dividends and Capital Distributions	0
Net Cash Provided (Used) by Financing Activities	**($45,895)**
Net Increase (Decrease) in Cash/Cash Equivalents	**($11,678)**
Cash/Equivalents at Beginning of Year	**$113,421**
Cash/Equivalents at End of Year	**$101,743**
Reconciliation of Net Income to Net Cash Provided by Operating (Used) Activities:	
Net Income, Accrual Adjusted	$36,303
Adjustments to Reconcile Net Income to Net Cash Provided (Used) by Operating Activities:	
Depreciation	41,263
(Increase)/Decrease in Crop Inventory	(6,597)
(Increase)/Decrease in Market Livestock Inventory	(24,126)
(Increase)/Decrease in Breeding Livestock Inventory	(2,500)
(Increase)/Decrease in Accounts Receivable	(2,465)
(Increase)/Decrease in Purchased Feed	(301)
(Increase)/Decrease in Purchased Feeder Cattle	
Increase/(Decrease) in Accounts Payable	6,578
Increase/(Decrease) in Accrued Interest	(4,006)
Increase/(Decrease) in Income Tax	(6,495)
Increase/(Decrease) in Deferred Taxes	18,153
Total Adjustments	$19,504
Net Cash Provided by Operating Activities	**$55,807**

JOHN AND MARY FARMER
STATEMENT OF OWNER EQUITY
FOR THE PERIODS JANUARY 1, 'X8 THRU DECEMBER 31, 'X8

Net Worth, Beginning of Period (Market Value)				$ 598,627
Net Income/Loss (Business Income Statement)		$ 36,303		
Withdrawals for Labor and Management	(25,000)			
Other Withdrawals	(4,620)			
Non-Farm Income contributed to the farm business	16,500			
Owner Withdrawals (Net)		$ (13,120)		
Other Capital Contributions/Gifts/Inheritances		$ 0		
Capital Distributions/Gifts Made		$ 0		
Additions and Reductions in Retained Capital			$ 23,183	
Change in Excess of Market Value over Book Value of Farm Assets and Unrealized Gains on Inventory Valuation		$ 2,123		
Change in Non-Current Portion -- Deferred Taxes related to Valuation		$ (3,827)		
Total Change in Valuation Equity			$ (1,704)	
Total Change in Farm Business Owner Equity				21,479
Increase in Value of Personal Assets (Market Value)		$ 3,750		
Less: Increase in Personal Liabilities		$ 935		
Net Worth Change due to Changes in Amounts of Personal Assets and Liabilities				2,815
Net Worth, Ending of Period				$ 622,921

APPENDIX B: EXAMPLE OF ACCOUNTANT PREPARED FINANCIAL STATEMENTS

This Appendix includes an example of a CPA prepared financial statement including an accountant's review report. An accountant's review provides limited assurance that the financial statements are fairly stated. A producer could request the accountant provide an audited report, however, this would be more expensive. Conversely an accountant could also provide a compilation report. A compilation involves using the producer's information to compile a financial statement without audit or review. This would be the least expensive, but would provide no assurances with respect to the financial statements being fairly stated. Regardless of the level of assurance selected, the financial statements would be formatted in exactly the same manner. The only difference would be in the accountant's report.

The FFSC has drafted the illustrative report in this Appendix assuming that this financial statement conforms to Generally Accepted Accounting Principles (GAAP) except for the way feed inventory and raised dairy and breeding livestock are valued. These exceptions are discussed in Note 1. A farming operation with a sophisticated accounting system, or an operation which does not have livestock, may be able to produce a financial statement in accordance with GAAP without these exceptions. However, the FFSC believes a large percentage of agricultural producers would not have the accounting systems to keep the required records. Also, depending on the nature of the agricultural producer, other exceptions not covered in this example may need to be added to an accountant's report.

In order to provide an example for a large number of producers, the FFSC tried to include a number of different types of enterprises into this example. The second paragraph of Note 1 describes these activities. The FFSC regrets not being able to show examples of every type of farming enterprise, but believes many of the formats and principals can be applied to various types of operations.

This financial statement has been prepared for a hypothetical farmer named Freddie Farmer and his wife Frieda. A number of years ago Freddie and Frieda's farming operation was incorporated for income tax purposes. Freddie and Frieda own 100% of the stock in the corporation named F & F Farms, Inc. This corporation holds title to most of the current assets and the machinery and equipment, along with the related liabilities. Freddie and Frieda decided not to transfer their farmland into the corporation and therefore, have another entity titled Freddie Farmer's Land Rental Proprietorship which holds title to all the farmland and the related liabilities. All of Freddie and Frieda's farmland is rented to the corporation, F & F Farms, Inc.

The corporation and the proprietorship each have their own separate accounting system. Freddie and Frieda also have a personal checking account. Freddie receives a weekly wage from the corporation which is deposited into the personal checking account. Freddie also withdraws a small amount from the proprietorship to pay the property taxes on the couple's cottage, which is a personal asset.

Freddie's banker had become concerned about the large amount of debt Freddie had outstanding and was uncomfortable with the complex multiple entity structure. He asked Freddie and Frieda to have their accountant prepare a reviewed combined financial statement on the accrual basis, along with a market value balance sheet. Their accountant informed them that they had a couple of different formats they could use to prepare their statements. First, they could prepare a combined accrual basis business only financial statement in accordance with GAAP, along with a personal financial statement, which would include all of the Farmer's personal assets at estimated current values and the

value of the farm business included as one line item. The second option included the combined accrual basis business only financial statements in accordance with GAAP along with, as supplementary information, a combining statement of Assets, Liabilities and Net Worth using the estimated current value and notes explaining how the values were determined. Freddie was concerned that his banker was accustomed to having all the assets and liabilities, both personal and business, included on one statement. Therefore, the Farmers chose the second option. Using the second option, pages 6 through 21 of this example include the combined business financial statements in accordance with GAAP. To better inform the user of these financial statements a comparative format has been used, therefore, the financial statements include amounts for the current year as well as the previous year.

The fixed assets on the Combined Balance Sheets on pages 7 and 8 are valued at cost and adjusted annually for depreciation. Because the Farmers used many types of accelerated depreciation methods for tax purposes, they chose not to use the tax depreciation schedules for financial statement purposes. These accelerated depreciation methods would cause significant fluctuations in depreciation expense and related earnings. Instead they have used a straight line method for all depreciable assets. The depreciation periods used are discussed in Note 1. The Combined Statements of Income on pages 9 and 10 include Freddie Farmer's weekly wage as an operating expense. This inclusion of the weekly wage as an operating expense should be noted in the event a comparison is made to a sole proprietorship which would not treat the owner withdrawals as an expense. The Combined Statements of Owner Equity on page 11 details the capital structure of both the corporation and proprietorship, including the breakdown of net income between the two. The Combined Statements of Cash Flows on pages 12 and 13 has been presented using the direct method. However, it may be more efficient to use the indirect method in practice.

The schedules on pages 23 and 24 have been included to offer the users of the financial statements a better understanding of the treatment of the fixed assets and raised dairy and breeding livestock. These schedules are not a required part of the financial statements under GAAP, but the FFSC believes they could be useful information. To simplify the financial statements, these schedules could be included in the notes.

The Combining Statement of Assets, Liabilities, and Net Worth included on pages 25 and 26 has been set up to show the total net worth, as well as the net worth for each individual entity. Since this statement is not in accordance with GAAP, it is the FFSC understanding that the term "Balance Sheet" cannot be used in a CPA prepared financial statement. However, it is currently the practice in agriculture to use the term "Balance Sheet" for a market value statement. This segregation of net worth may be useful for bankers in determining to which entity they are actually loaning the money and where the equity is. The segregation of net worth may also be useful for estate planning. The section at the bottom of page 26 recaps the prior year balances. In practice it may not be necessary to include this schedule if the prior year financial statements are available. This section was included since the example does not include the prior year financial statements. The prior year information is important when calculating the ratios in Appendix D.

The sample financial statements included in this appendix are intended to provide only a general example of CPA prepared statements for farm clients. The format would need to be modified to fit various types of farming enterprises throughout the country. This sample is presented as a general example and is not a substitute for the CPA's professional judgment.

F & F FARMS AND AFFILIATES

COMBINED FINANCIAL INFORMATION
DECEMBER 31, 'X2 and 'X1

F & F FARMS AND AFFILIATES
TABLE OF CONTENTS

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INDEPENDENT ACCOUNTANT'S REVIEW REPORT

To the Owners
F & F Farms
Rural Town, USA

We have reviewed the accompanying combined balance sheets of F & F Farms and Affiliates as of December 31, 'X2 and 'X1, and the related combined statements of income, changes in owners' equity, and cash flows for the years then ended. A review includes primarily applying analytical procedures to the Owners' financial data and making inquiries of the Owners. A review is substantially less in scope than an audit, the objective of which is the expression of an opinion regarding the financial statements as a whole. Accordingly, we do not express such an opinion.

The Owners are responsible for the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America and for designing, implementing, and maintaining internal control relevant to the preparation and fair presentation of the financial statements.

Our responsibility is to conduct the review in accordance with Statements on Standards for Accounting and Review Services issued by the American Institute of Certified Public Accountants. Those standards require us to perform procedures to obtain limited assurance that there are no material modifications that should be made to the financial statements. We believe that the results of our procedures provide a reasonable basis for our report.

Based on our review, with the exception of the matter described in the following paragraph, we are not aware of any material modifications that should be made to the accompanying financial statements in order for them to be in conformity with accounting principles generally accepted in the United States of America.

As disclosed in Note 1 to the financial statements, accounting principles generally accepted in the United States of America require that feed inventory be valued at the lower of cost or market and dairy livestock be valued at cost less accumulated depreciation. The Owners have informed us that the feed inventory is valued at market and dairy livestock is not being depreciated, but is valued at cost. The effects of this departure from accounting principles generally accepted in the United States of America on financial position, results of operations, and cash flows have not been determined.

Our review was made for the purpose of expressing a conclusion that there are no material modifications that should be made to the financial statements in order for them to be in conformity with accounting principles generally accepted in the United States of America. The information included on pages 22 through 33 is presented only for purposes of additional analysis and has not been subjected to the inquiry and analytical procedures applied in the review of the basic financial statements, but was compiled from information that is the representation of the Owners, without audit or review. Accordingly, we do not express an opinion or any other form of assurance on the supplementary information.

SMITH & JONES, P.C.
CERTIFIED PUBLIC ACCOUNTANTS

January 20, 'X3

COMBINED FINANCIAL STATEMENTS

F & F FARMS AND AFFILIATES

COMBINED BALANCE SHEETS

	DECEMBER 31,	
	'X2	'X1
ASSETS		
CURRENT ASSETS:		
Cash	$ 71,125	$ 5,000
Hedging accounts	526	828
Commodity receivables	130,471	152,011
Inventory (Note 2)	252,714	270,342
Prepaid expenses	115,446	19,668
Current portion of other receivables	12,000	12,000
TOTAL CURRENT ASSETS	582,282	459,849
PROPERTY, EQUIPMENT, DAIRY AND BREEDING LIVESTOCK (NOTE 1):		
Land	600,000	600,000
Buildings	400,000	400,000
Machinery and equipment	520,000	500,000
Tiling	117,000	117,000
Purchased Breeding Livestock	3,000	3,000
Raised Breeding Livestock (Note 3)	79,885	80,040
TOTAL PROPERTY, EQUIPMENT, DAIRY AND BREEDING LIVESTOCK	1,719,885	1,700,040
Accumulated depreciation	(465,000)	(405,000)
NET PROPERTY, EQUIPMENT, DAIRY AND BREEDING LIVESTOCK	1,254,885	1,295,040
OTHER ASSETS (NOTE 1):		
Investments in cooperatives	62,970	61,930
Other receivables	24,000	25,000
TOTAL OTHER ASSETS	86,970	86,930
TOTAL ASSETS	$1,924,137	$1,841,819

See accompanying notes and Independent Accountant's Review Report.

F & F FARMS AND AFFILIATES

COMBINED BALANCE SHEETS
(continued)

	DECEMBER 31,	
	'X2	'X1
LIABILITIES AND OWNERS' EQUITY		
CURRENT LIABILITIES:		
Current portion of long-term debt (Note 6)	$ 108,000	$ 90,252
Short term notes payable (Note 5)	93,225	217,301
Accrued income tax payable	3,090	3,600
Accrued interest	21,620	50,880
Accounts payable	9,000	31,792
Other liabilities and accrued expenses	4,000	13,379
Current deferred tax liability (Note 4)	64,280	56,400
TOTAL CURRENT LIABILITIES	303,215	463,604
LONG-TERM DEBT (NOTE 6)	873,000	938,748
NONCURRENT DEFERRED TAX LIABILITY (NOTE 4)	13,130	13,010
TOTAL LIABILITIES	1,189,345	1,415,362
OWNERS' EQUITY	734,792	426,457
TOTAL LIABILITIES AND OWNERS' EQUITY	$1,924,137	$1,841,819

See accompanying notes and Independent Accountant's Review Report.

F & F FARMS AND AFFILIATES

COMBINED STATEMENTS OF INCOME

	YEARS ENDED DECEMBER 31,	
	'X2	'X1
REVENUE FROM OPERATIONS:		
Agriculture program payments	$ 23,000	$ 22,000
Cattle	589,420	619,800
Corn	24,000	20,060
Edible beans	120,000	75,000
Hogs	26,000	25,200
Milk	125,000	120,000
Oats		16,800
Raised dairy and breeding livestock (Note 3)	20,580	20,200
Soybeans	5,600	5,500
Sugar beets	128,000	125,000
Wheat	24,000	22,200
Patronage dividends	3,610	4,280
Custom machine work	1,500	1,200
TOTAL REVENUE FROM OPERATIONS	1,090,710	1,077,240
OPERATING COSTS AND EXPENSES:		
Cost of cattle sold	230,000	300,000
Accounting fees	2,250	250
Breeding fees	1,800	1,900
Chemicals	19,800	23,180
Custom hire	2,200	2,600
Depreciation/Amortization	80,000	81,000
Dues and subscriptions	200	180
Employee benefits	9,000	8,400
Feed	16,500	17,000
Fertilizers	35,000	40,000
Freight and trucking	7,000	6,500
Gas and oil (net of fuel tax refunds of $2,100 and $2,200)	4,900	5,000
Insurance	8,800	8,300
Labor – General	35,000	40,000
Labor - Officer wages	31,200	30,000
Legal fees	1,000	2,100
Office expense and supplies	540	340
Pension expense	11,000	9,200
Rent (Note 8)	63,000	55,000
Repairs and maintenance	20,000	20,000
Seed	42,000	42,000
Storage	1,900	1,300
Supplies	7,665	6,400
Taxes (net of refunds of $13,200 and $13,105)	7,800	7,704
Truck expense	2,100	2,200
Utilities	6,400	6,300
Veterinary cost	2,300	2,200
TOTAL OPERATING COSTS AND EXPENSES	649,355	719,054

(CONTINUED)

F & F FARMS AND AFFILIATES

COMBINED STATEMENTS OF INCOME
(continued)

	YEARS ENDED DECEMBER 31,	
	'X2	'X1
INTEREST EXPENSE	50,000	75,000
INCOME FROM OPERATIONS BEFORE OTHER INCOME AND INCOME TAX	391,355	283,186
OTHER INCOME:		
Interest income	730	850
Gain on sale of assets		2,000
TOTAL OTHER INCOME	730	2,850
INCOME BEFORE INCOME TAX (NET FARM INCOME)	392,085	286,036
INCOME TAX EXPENSE (BENEFIT) (NOTE 4):		
Current	6,750	3,600
Deferred	52,000	40,000
TOTAL INCOME TAX EXPENSE	58,750	43,600
NET INCOME	$ 333,335	$ 242,436

See accompanying notes and Independent Accountant's Review Report.

F & F FARMS AND AFFILIATES

COMBINED STATEMENTS OF OWNER EQUITY
YEARS ENDED DECEMBER 31, 'X2 AND 'X1

	F & F FARMS, INC.			FREDDIE FARMER'S LAND RENTAL PROPRIETORSHIP	TOTAL EQUITY
	Common Stock*	Additional Paid in Capital	Retained Earnings	Owners' Equity	
Balance 12-31-X0	$ 5,000	$ 15,000	$ 38,202	$ 150,819	$ 209,021
Owners' withdrawals				(25,000)	(25,000)
Net income			207,072	35,364	242,436
Balance 12-31-X1	5,000	15,000	245,274	161,183	426,457
Owners' withdrawals				(25,000)	(25,000)
Net income			297,635	35,700	333,335
Balance 12-31-X2	$ 5,000	$ 15,000	$ 542,909	$ 171,883	$ 734,792

* $1 par value, 50,000 shares authorized; 5,000 issued and outstanding

See accompanying notes and Independent Accountant's Review Report.

F & F FARMS AND AFFILIATES

COMBINED STATEMENTS OF CASH FLOWS

	YEARS ENDED DECEMBER 31,	
	'X2	'X1
CASH FLOWS FROM OPERATING ACTIVITIES:		
Cash received from operations	$1,123,176	$1,092,449
Interest received	730	850
Cash paid for operating cost and expenses	(714,551)	(831,047)
Officer wages paid	(31,200)	(30,000)
Interest paid	(69,880)	(73,800)
Corporate income tax paid	(7,200)	(1,200)
NET CASH PROVIDED BY OPERATING ACTIVITIES:	301,075	157,252
CASH FLOWS FROM INVESTING ACTIVITIES		
Proceeds from revolvement of allocated patronage	1,126	220
Repayment of note receivable	1,000	1,000
Proceeds from sale of assets		2,000
Purchase of machinery and equipment		(20,000)
Purchase of land		(80,000)
Construction of building		(30,000)
NET CASH PROVIDED (USED) BY INVESTING ACTIVITIES	2,126	(126,780)
CASH FLOWS FROM FINANCING ACTIVITIES:		
Net increase (decrease) in short-term debt	(124,076)	26,000
Proceeds from long-term debt		244,000
Repayment of long-term debt	(88,000)	(275,000)
Owners Withdrawals	(25,000)	(25,000)
NET CASH PROVIDED (USED) BY FINANCING ACTIVITIES	(237,076)	(30,000)
NET INCREASE (DECREASE) IN CASH	66,125	472
CASH AT BEGINNING OF YEAR	5,000	4,528
CASH AT END OF YEAR	$ 71,125	$ 5,000
CASH AND CASH EQUIVALENTS INCLUDE THE FOLLOWING:		
Cash	$ 71,125	$ 5,000

(CONTINUED)

F & F FARMS AND AFFILIATES

COMBINED STATEMENTS OF CASH FLOWS

	YEARS ENDED DECEMBER 31,	
	'X2	'X1
RECONCILIATION OF NET INCOME TO NET CASH PROVIDED BY OPERATING ACTIVITIES:		
Net income	$ 333,335	$ 242,436
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation/Amortization	80,000	81,000
Noncash portion of patronage dividends	(2,166)	(3,000)
Gain on sale of assets		(2,000)
Deferred income taxes	8,000	6,000
(Increase) Decrease in dairy and breeding livestock	155	(8,000)
(Increase) Decrease in current assets:		
Hedging accounts	302	3,700
Commodity receivables	21,540	(12,025)
Inventory	17,628	(40,907)
Prepaid expenses	(95,778)	(2,998)
Increase (Decrease) in current liabilities:		
Accounts payable	(22,792)	(116,000)
Accrued interest	(29,260)	1,200
Other liabilities and accrued expenses	(9,379)	5,446
Accrued income taxes	(510)	2,400
NET CASH PROVIDED BY OPERATING ACTIVITIES	$ 301,075	$ 157,252
NONCASH INVESTING AND FINANCING TRANSACTIONS:		
Acquisition of machinery and equipment	($40,000)	$0
Amount financed	$40,000	$0

See accompanying notes and Independent Accountant's Review Report.

F & F FARMS AND AFFILIATES

NOTES TO COMBINED FINANCIAL STATEMENTS
DECEMBER 31, 'X2 AND 'X1

NOTE 1 — SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES:

Basis of Accounting — The accounting policies of F & F Farms combined financial statements conform to generally accepted accounting principles except for the way F & F Farms, Inc. ("Corporation") values its feed inventory and raised breeding livestock. Generally accepted accounting principles of the United States of America require feed inventory to be valued at the lower of cost or market and raised breeding livestock to be valued at cost less accumulated depreciation. The Corporation values its grown feed inventory at market which may exceed cost and raised breeding livestock at a predetermined base value, which may exceed cost less accumulated depreciation. The effect of these departures from generally accepted accounting principles of the United States of America has not been determined.

Use of Estimates — The preparation of financial statements in conformity with generally accepted accounting principles of the United States of America requires the Company to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. The Company estimates the quantities of inventory. The inventory is estimated by measuring the volume of grain in the bins, however, when the grain is sold it is measured by weight. Therefore, the quantities of inventory may differ from the actual amounts. These differences may be material.

Business Activity — Freddie and Frieda Farmer operate a 1,400 acre cash crop farm along with milking 60 head of dairy cows, feeding out 800 feeder cattle, and farrowing and finishing 300 feeder pigs. Freddie and Frieda own 800 tillable acres and cash rent another 600 acres. Principal cash crops include sugar beets, soybeans, wheat, oats, corn, and all types of edible beans. Corn, oats, and hay are also grown for feed.

Basis of Combination — The combined financial statements of F & F Farms include those accounts of the Corporation and those of Freddie Farmer's Land Rental Proprietorship ("Proprietorship"). These combined business financial statements do not include any personal assets of Freddie and Frieda Farmer. Freddie and Frieda Farmer own 100% of the outstanding stock of the Corporation which holds title to most of the current assets and the machinery and equipment in these financial statements. The Proprietorship holds title to all the land, buildings, and improvements along with having the primary obligation for the related outstanding liabilities included in these financial statements. All material intercompany transactions have been eliminated.

Cash and Cash Equivalents — For the purpose of reporting the statements of cash flows, the Company considers all cash amounts, which are not subject to withdrawal restrictions or penalties, and all highly liquid debt instruments purchased with a maturity of three months or less to be cash equivalents.

(CONTINUED)

NOTE 1 — SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES: (CONTINUED)

Trade Accounts and Other Receivables — Generally accepted accounting principles of the United States of America require a company to report the amount of accounts, notes and other forms of receivables at the amount the owners expect to collect from balances outstanding at the balance sheet date. The amount collectible is to be estimated using historical performance, projections of trends and known information regarding the financial condition of the customer or other obligor. The difference between the book balance and the amount estimated to be uncollectible is deducted from the book balance by means of an allowance for doubtful accounts. Based on the Owners' assessment of the outstanding receivable balances at the balance sheet date, any potential realization losses will be immaterial and therefore no allowance for doubtful accounts is recorded on the balance sheet.

Property, Equipment and Livestock — The farm premises, equipment and purchased livestock are stated at cost. Depreciation is computed using the straight line method as follows:

Livestock—Hogs	3 years
Livestock—Dairy cows	5 years
Machinery and equipment	3-10 years
Buildings	15-30 years
Land improvements	15-30 years

Depreciation for tax purposes is computed by using the straight line, declining balance, accelerated cost recovery system, and modified accelerated cost recovery system methods; therefore, temporary differences exist between the depreciation for tax purposes and that used in these financial statements.

Investments in Cooperatives — The Company follows the practice of investing in cooperatives with which it does business. Investments in cooperatives are carried on the books net of a reserve. Such investments are valued at cost and adjusted annually for allocated patronage dividends net of cash distributions and net of the reserve.

Revenue Recognition — Revenue includes the cash sale of commodities produced in the current year. Revenue also includes the commodities held for resale that were unsold at year end. These are included in income at the market prices that were in effect as of the balance sheet date. Any difference between the market value and the subsequent cash price is recognized at the time of the cash sale.

(CONTINUED)

NOTE 1 — SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES: (CONTINUED)

Income Taxes — Income taxes are provided for the tax effects of transactions reported in the financial statements and consist of taxes currently due, plus deferred taxes. Deferred taxes are recognized for differences between the basis of assets and liabilities for financial statement and income tax purposes. The deferred tax assets and liabilities represent the future tax return consequences of those differences, which will either be taxable or deductible when the assets and liabilities are recovered or settled.

The Proprietorship's income and expenses are combined with the income and expenses of Freddie and Frieda Farmer, individually, from other sources and reported in the individual federal and state income tax returns of the Farmers. The Proprietorship is not a taxpaying entity for purposes of federal and state income taxes, and thus, no income taxes have been recorded in the combined financial statements for the Proprietorship.

In the preparation of tax returns, tax positions are taken based on interpretation of Federal, state and local income tax laws. The Owners periodically review and evaluate the status of uncertain tax positions and make estimates of amounts, including interest and penalties, ultimately due or owed. No amounts have been identified, or recorded, as uncertain tax positions. The Company is no longer subject to U.S. Federal, state and local income tax examinations by tax authorities for years before 20xx.

Crop Pricing Agreements — During the normal course of business, the Company enters into crop pricing agreements, futures contracts, and option contracts for the sale of commodities. At the balance sheet date, any unsettled pricing agreements, futures contracts, and option contracts for the current year's commodities are used to value the current year's unsold commodities. Any pricing agreements, futures contracts, and option contracts for future crop years are included in other comprehensive income.

Subsequent Events — The Owners have evaluated subsequent events through January 20, 20x3, the date which the financial statements were available to be issued.

NOTE 2 — INVENTORY:

Inventory consists of the following:

	DECEMBER 31,	
	'X2	'X1
Livestock held for resale - At market	$ 206,843	$ 225,100
Feed raised - At market	44,051	43,242
Feed purchased - At lower of cost or market	1,820	2,000
Total Inventory	$ 252,714	$ 270,342

(CONTINUED)

NOTE 3 — RAISED DAIRY AND BREEDING LIVESTOCK:

The Corporation utilizes a method that is commonly referred to as the "group base value" approach for valuing raised breeding livestock. Under this method, an arbitrary value deemed by management to be a conservative estimate of cost per animal is assigned to each category of raised dairy and breeding livestock. Revenue is recognized to the extent there is any change in the number of animals in each category by multiplying the change in quantity of animals times the base value amount, plus the cash sales amount received from animals sold. Expenses associated with these animals are not capitalized, but flow through the income statement. The base value amount is not depreciated. In the financial statements revenue has been recognized as follows:

	DECEMBER 31,	
	'X2	'X1
Cash sale of raised dairy and breeding livestock	$ 20,735	$ 20,000
Base value of raised dairy and breeding livestock sold	(22,885)	(22,290)
Gain (loss) on sale of culled breeding livestock	(2,150)	(2,290)
Revenue due to change in quantity of raised dairy and breeding livestock	22,730	22,490
Total Revenue	$ 20,580	$ 20,200

NUMBER OF ANIMALS 12/31/X1	BASE VALUE PER HEAD	TOTAL BASE VALUE
32	$ 110	$ 3,520
61	1,000	61,000
16	625	10,000
23	240	5,520
		$ 80,040

NUMBER OF ANIMALS 12/31/X2	BASE VALUE PER HEAD	TOTAL BASE VALUE
34	$ 110	$ 3,740
60	1,000	60,000
17	625	10,625
23	240	5,520
		$ 79,885

NOTE 4 — DEFERRED INCOME TAXES:

For December 31, 'X2 and 'X1, it is reasonably certain that all the deductible temporary differences and taxable temporary differences will reverse in future years. Therefore, no valuation allowance is needed.

The Corporation's deductible temporary differences are unpaid expenses at the balance sheet date that when paid will be deductible for tax purposes and taxable temporary differences consist of items that are included as income for book purposes and not for tax or items that have been deducted for tax purposes but not for book purposes.

(CONTINUED)

NOTE 4 — DEFERRED INCOME TAXES: (CONTINUED)

	DECEMBER 31,	
	'X2	**'X1**
Deductible temporary differences:		
Accrued interest	$ 21,620	$ 50,880
Accounts payable	9,000	31,792
Other liabilities	4,000	13,379
Reserve for possible uncollectible allocated patronage dividends	6,334	6,334
Total deductible temporary differences	$ 40,954	$ 102,385
Tax rate	15%	15%
Total deferred tax assets	$ (6,143)	$ (15,350)
Taxable temporary differences:		
Commodity receivables	$130,471	$ 152,011
Inventory	252,714	300,342
Prepaid expense	115,446	19,668
Raised breeding livestock	79,885	80,040
Accumulated depreciation on property and equipment	14,000	13,000
Total taxable temporary differences	$592,516	$ 565,061
Tax rate	15%	15%
Total deferred tax liabilities	$ 83,553	$ 84,760
Net deferred tax liabilities	$ 77,410	$ 69,410

These amounts have been presented in the combined financial statements as follows:

	DECEMBER 31,	
	'X2	**'X1**
Current deferred tax liability	$ 64,280	$ 56,400
Non current deferred tax liability	13,130	13,010
Net deferred tax liabilities	$ 77,410	$ 69,410

NOTE 5 — SHORT TERM NOTES PAYABLE:

	DECEMBER 31,	
	'X2	**'X1**
Operating line of credit from Local Ag Bank due January 31, 'X2 and 'X1, with interest at the bank's variable rate currently at 5%. This line of credit is secured by all crops, and has an authorized limit of $300,000.	$ 65,190	$ 217,301

(CONTINUED)

NOTE 5 — SHORT TERM NOTES PAYABLE: (CONTINUED)

	DECEMBER 31, 'X2	DECEMBER 31, 'X1
Note payable to Rural Cooperative due on or before June 30, 'X2 with interest at 2.25%. This note is secured by 3,115 cwt of navy beans held at the Cooperative under a price later agreement.	28,035	0
Total	$ 93,225	$ 217,301

NOTE 6 — LONG-TERM DEBT:

	DECEMBER 31, 'X2	DECEMBER 31, 'X1
Note payable to Equipment Finance Co. due in annual installments of $12,500 each November 30, until 'X5. This note is secured by a money purchase security interest in a Four Wheel Drive tractor. The interest rate is variable, currently at 4%.	$ 40,000	
Machinery and equipment note payable, dated March 31, 'X0, to Local Ag Bank with annual installments including interest of $95,000, until March 31, 'X3. This note is secured by all machinery and equipment and carries the bank variable interest rate, currently at 4.5%.	180,000	$ 244,000
Mortgage note payable to Local Ag Bank with a fixed interest rate of 4.25% due in annual installments of $25,000 including interest until December 31, 'X5, collateralized by 200 acres of farmland.	196,000	200,000
Mortgage note payable to Farm Credit Services with a fixed interest rate of 4.25% due in annual installments of $45,000 including interest until December 31, 'X6, collateralized by 404 acres of farmland. This mortgage is subject to prepayment penalties if paid before maturity.	380,000	385,000
Land contract payable to John Smith with interest at 4% due in annual principal payments of $5,000 plus interest each December 31, until paid in full. This land contract is secured by 79 acres of farmland located in Section 2 of Township F of Rural county.	70,000	75,000
Land contract payable to James Jones with interest at 4.3% due in annual principal payments of $5,000 plus interest each December 31, until paid in full. This land contract is secured by 38 acres of farmland located in Section 4 of Township G of Rural county.	35,000	40,000

(CONTINUED)

NOTE 6 — LONG-TERM DEBT:

	DECEMBER 31, 'X2	DECEMBER 31, 'X1
Land contract payable to Freddie's father, Frank Farmer, with interest at 4.5% due in annual principal payments of $5,000 plus interest each December 31, until paid in full. This land contract is secured by 79 acres in Section 6 of Township H of Rural county.	80,000	85,000
Total	981,000	1,029,000
Less: Current portion of above notes	108,000	90,252
Total long-term debt	$ 873,000	$ 938,748

Current portion of above notes consist of:

	Current Portion	Long-term Portion	Total
Note payable - Equipment Finance Co.	$ 8,000	$ 32,000	$ 40,000
Machinery and equipment note payable - Local Ag. Bank	75,000	105,000	180,000
Mortgage - Local Ag Bank	5,000	191,000	196,000
Mortgage - Farm Credit Services	5,000	375,000	380,000
Land contracts	15,000	170,000	185,000
Totals	$ 108,000	$ 873,000	$ 981,000

Maturities of long-term debt are as follows:

Year ending December 31,	Amount
'X3	$ 108,000
'X4	160,000
'X5	72,000
'X6	75,000
'X7	456,000
Thereafter	110,000
Total	$ 981,000

Interest expense on long-term debt amounted to $50,000 and $75,000, respectively, for the years ended December 31, 'X2 and 'X1.

(CONTINUED)

F & F FARMS AND AFFILIATES

NOTES TO COMBINED FINANCIAL STATEMENTS
DECEMBER 31, 'X2 AND 'X1

NOTE 7 — PENSION PLAN:

The Corporation sponsors a pension and profit sharing plan covering substantially all full time employees. Contributions are decided by the board of directors each year, however, contributions can not exceed 15% of each covered employee's salary. Contributions amounted to $11,000 and $9,200 for the years ended December 31, 'X2 and 'X1, respectively.

NOTE 8 — OPERATING LEASES:

The Corporation leases farmland from various individuals. The leases are renewable between one and five years. The lease expense is reported in rent expense.

	DECEMBER 31,	
	'X2	'X1
300 acres of farmland, lease expires December 31, 'X7	$60,000	$52,000
15 acres of farmland, lease renewable annually	3,000	3,000
Total	$63,000	$55,000

SUPPLEMENTARY INFORMATION

F & F FARMS AND AFFILIATES

SCHEDULE OF PROPERTY, EQUIPMENT AND PURCHASED BREEDING LIVESTOCK
DECEMBER 31, 'X2

	COST			
	BALANCE AT DECEMBER 31, 'X1	ADDITIONS	DISPOSITIONS	BALANCE AT DECEMBER 31, 'X2
PROPERTY AND EQUIPMENT:				
Land	$ 600,000			$ 600,000
Buildings	400,000			400,000
Machinery and equipment	500,000	$ 40,000	$ (20,000)	520,000
Tiling	117,000			117,000
Breeding livestock	3,000			3,000
TOTAL PROPERTY AND EQUIPMENT	$ 1,620,000	$ 40,000	$ (20,000)	$ 1,640,000

	ACCUMULATED DEPRECIATION			
	BALANCE AT DECEMBER 31, 'X1	PROVISION FOR DEPRECIATION	DISPOSITIONS	BALANCE AT DECEMBER 31, 'X2
ACCUMULATED DEPRECIATION:				
Buildings	$ 140,000	$ 20,000		$ 160,000
Machinery and equipment	205,000	56,000	$ (20,000)	241,000
Tiling	59,000	3,000		62,000
Breeding livestock	1,000	1,000		2,000
TOTAL ACCUMULATED DEPRECIATION	$ 405,000	$ 80,000	$ (20,000)	$ 465,000

See Independent Accountant's Review Report.

F & F FARMS AND AFFILIATES

SCHEDULE OF RAISED DAIRY AND BREEDING LIVESTOCK
DECEMBER 31, 'X2

RAISED DESCRIPTIONS	NUMBER OF ANIMALS 12/31/X1	BORN OR TRANSFERRED IN	TRANSFERRED OUT	SOLD	DIED	NUMBER OF ANIMALS 12/31/X2	BASE VALUE PER HEAD	TOTAL BASE VALUE
Sows	32	18		(15)	(1)	34	$ 110	$ 3,740
Milking cows	61	17		(17)	(1)	60	1,000	60,000
Heifers over one year old	16	23	(17)	(5)		17	625	10,625
Heifers under one year old	23	23	(23)			23	240	5,520
Total								$ 79,885

ANIMALS SOLD	NUMBER OF ANIMALS	BASE VALUE	TOTAL BASE VALUE	TOTAL CASH RECEIVED	NET GAIN (LOSS)
Sows	15	$ 110	$ 1,650	$ 2,010	$ 360
Milking cows	17	$ 1,000	17,000	15,300	(1,700)
Heifers over one year old	5	$ 625	3,125	3,425	300
ANIMALS DIED					
Sows	1	110	110		(110)
Milking cows	1	1,000	1,000		(1,000)
Total			$ 22,885	$ 20,735	$ (2,150)

	BORN OR TRANSFERRED IN	BASE VALUE INCREASE	
Revenue from increase in quantities:			
Sows	18	$ 110	$ 1,980
Milking cows	17	375	6,375
Heifers over one year old	23	385	8,855
Heifers under one year old	23	240	5,520
Total revenue from increase in quantities			22,730
TOTAL REVENUE FROM RAISED DAIRY AND BREEDING LIVESTOCK			$ 20,580

F & F FARMS AND AFFILIATES

COMBINING STATEMENT OF ASSETS, LIABILITIES AND NET WORTH
ESTIMATED CURRENT VALUE DECEMBER 31, 'X2

	F & F FARMS, INC.	FREDDIE FARMER'S LAND RENTAL PROPRIETORSHIP	TOTAL	FREDIE AND FRIEDA FARMER PERSONAL EFFECTS	TOTAL ESTIMATED CURRENT VALUE
ASSETS					
CURRENT ASSETS					
Cash	$ 71,125		$ 71,125		$ 71,125
Hedging accounts	526		526		526
Commodity receivables (Note B)	130,471		130,471		130,471
Inventory (Note C)	252,714		252,714		252,714
Prepaid expenses (Note D)	115,446		115,446		115,446
Other current assets		$ 12,000	12,000		12,000
TOTAL CURRENT ASSETS	570,282	12,000	582,282		582,282
PROPERTY, EQUIPMENT AND LIVESTOCK:					
Land, buildings and tiling (Note F)		3,218,000	3,218,000		3,218,000
Machinery and equipment (Note G)	400,000		400,000		400,000
Livestock (Note H)	97,870		97,870		97,870
TOTAL PROPERTY, EQUIPMENT AND LIVESTOCK	497,870	3,218,000	3,715,870		3,715,870
OTHER ASSETS:					
Investments in cooperatives (Note I)	47,595		47,595		47,595
Other receivables (Note E)		24,000	24,000		24,000
TOTAL OTHER ASSETS	47,595	24,000	71,595		71,595
PERSONAL ASSETS: (NOTE J):					
Cash				$ 800	800
Cash value of life insurance				33,000	33,000
Personal residence				68,000	68,000
Cottage				120,000	120,000
Personal effects				25,000	25,000
100% vested interest in pension plan				19,000	19,000
TOTAL PERSONAL ASSETS				265,800	265,800
TOTAL ASSETS	1,115,747	3,254,000	4,369,747	265,800	4,635,547

(CONTINUED)

F & F FARMS AND AFFILIATES

COMBINING STATEMENT OF ASSETS, LIABILITIES AND NET WORTH
ESTIMATED CURRENT VALUE DECEMBER 31, 'X2

	F & F FARMS, INC.	FREDDIE FARMER'S LAND RENTAL PROPRIETORSHIP	TOTAL	FREDIE AND FRIEDA FARMER PERSONAL EFFECTS	TOTAL ESTIMATED CURRENT VALUE
LESS: LIABILITIES					
CURRENT LIABILITIES:					
Current portion of long-term debt	83,000	25,000	108,000		108,000
Short-term notes payable	93,225		93,225		93,225
Accounts payable and other accrued expenses	37,710		37,710		37,710
Current deferred tax liability	64,280		64,280		64,280
TOTAL CURRENT LIABILITIES	278,215	25,000	303,215		303,215
LONG-TERM DEBT (NOTE F)	137,000	736,000	873,000		873,000
PERSONAL LIABILITIES:					
Accounts payable and other accrued expenses				3,500	3,500
Mortgage payable on cottage (Note J)				39,000	39,000
Note payable on auto (Note J)				4,500	4,500
TOTAL PERSONAL LIABILITIES BEFORE TAXES				47,000	47,000
Noncurrent deferred tax liability	13,130		13,130		13,130
Estimated income taxes (Note K)	146,824	463,470	610,294	6,105	616,399
TOTAL LIABILITIES	575,169	1,224,470	1,799,639	53,105	1,852,744
NET WORTH	$ 540,578	$ 2,029,530	$2,570,108	$ 212,695	$ 2,782,803

Combining Summary of Prior Year Statement of Assets, Liabilities and Net Worth
DECEMBER 31, X1

	F & F FARMS, INC.	FREDDIE FARMER'S LAND RENTAL PROPRIETORSHIP	TOTAL	FREDIE AND FRIEDA FARMER PERSONAL EFFECTS	TOTAL ESTIMATED CURRENT VALUE
TOTAL ASSETS	$ 818,047	$ 3,075,000	$ 3,893,047	$ 265,650	$ 4,158,697
TOTAL LIABILITIES	718,191	1,280,200	1,998,391	47,000	2,045,391
NET WORTH	$ 99,856	$ 1,794,800	$ 1,894,656	$ 218,650	$ 2,113,306

See Independent Accountant's Review Report.

F & F FARMS AND AFFILIATES

NOTES TO COMBINING STATEMENT OF ASSETS, LIABILITIES AND NET WORTH DECEMBER 31, 'X2

NOTE A — BASIS OF PRESENTATION:

This information is presented on an estimated current value basis as determined by the owners and does not present financial position and results of operations in accordance with generally accepted accounting principles. Information prepared on an estimated current value basis is characterized by greater subjectivity and imprecision than conventional historical cost information. In addition, the supplemental current value financial statements do not purport to present the net realizable, liquidation, or market value of F & F Farms as a whole. Furthermore, amounts ultimately realized by F & F Farms from the disposal of properties may vary significantly from the current values presented.

NOTE B — COMMODITY RECEIVABLES:

Estimated crop receivables consist of the following:

Commodity receivable held under price later agreements at a local elevator:

Commodity	Quantity	Price	December 31, 'X2
Navy beans	3,115 cwt.	$ 13.00	$ 40,495
Corn	11,314 bu.	$ 2.20	24,891
Black beans	1,310 cwt.	$ 15.00	19,650
Soybeans	845 bu.	$ 5.84	4,935
Less: Storage and other charges on above commodities			(2,516)
Total price later receivable			87,455

Other commodity receivables:

Commodity	Quantity	Price	
Sugar beets	3,210 tons	$ 12.00	38,520
Pooled black beans	3,752 cwt.	$ 1.00	3,752
Pooled wheat	3,720 bu.	$ 0.20	744
Total commodity receivables			$ 130,471

(CONTINUED)

F & F FARMS AND AFFILIATES

NOTES TO COMBINING STATEMENT OF ASSETS, LIABILITIES AND NET WORTH
DECEMBER 31, 'X2

NOTE C — INVENTORY:

Inventory is valued at market and consists of the following:

Livestock inventory:

Livestock Type	Number of Head	Average Weight	Market Price Per Pound	December 31, 'X2
Feeder cattle over 400 lbs	381	850 lbs	$ 0.58	$ 187,833
Feeder cattle under 400 lbs	20	275 lbs	$ 0.72	3,960
Feeder hogs	240	125 lbs	$ 0.41	12,300
Feeders	110	25 lbs	$ 1.00	2,750
Total livestock held for resale				206,843

Feed inventory:

Type	Quantity	Price	December 31, 'X2
Baled hay	2,300 bales	$ 1.85	4,255
Silage	640 tons	$ 26.00	16,640
High moisture corn	1,900 bu.	$ 1.99	3,781
Haylage	325 tons	$ 58.00	18,850
Straw	35 tons	$ 15.00	525
Total feed inventory – At market			44,051
Feed supplement purchased – Valued at lower of cost or market			1,820
Total Inventory			$ 252,714

NOTE D — PREPAID EXPENSES:

Prepaid expenses consist of the following:

	December 31, 'X2
Growing wheat-70 acres @ $35/acre	$ 2,450
Fall applied fertilizer	58,600
Prepaid fertilizer for spring	53,000
Gasoline	395
Diesel Fuel	1,001
	$ 115,446

(CONTINUED)

F & F FARMS AND AFFILIATES

NOTES TO COMBINING STATEMENT OF ASSETS, LIABILITIES AND NET WORTH DECEMBER 31, 'X2

NOTE E — OTHER RECEIVABLES:

Other receivables consist of a land contract which calls for annual principal payments of $1,000 plus interest at 10%. This land contract is secured by a home located in Township F.

NOTE F — LAND, BUILDINGS AND TILING:

Land, buildings and tiling are valued as of December 31, 'X2 at estimated current value based on [1]appraisal, [2]cost value or [3]on a multiple of the state equalized value used for property tax assessment purposes, appraisal and cost value. Most of this land is used as collateral for various loans. The land and the related debt are as follows:

Township	Section	Number of Acres	Estimated Current Value	Mortgagor	Amount of Debt
Township A [1]	1	80	$ 328,000		
Township B [1]	3	120	492,000		
			820,000	Local Ag. Bank	$ 196,000
Township C [2]	5	119	487,900		
Township D [2]	6	125	512,500		
Township E [2]	7	160	656,000	Farm Credit	
			1,656,400	Services	380,000
Township F [3]	2	79	323,900	John Smith	70,000
Township G [3]	4	38	155,800	James Jones	35,000
Township H [3]	6	79	329,900	Frank Farmer	80,000
*Less: Value of personal residence			(68,000)		
Total land, buildings and tiling			$ 3,218,000		761,000
Add: machinery and equipment debt:					
Note payable to Local Ag. Bank					180,000
Note payable to Equipment Finance Co.					40,000
Total machinery and equipment debt					220,000
Less current portion					(108,000)
Total long-term debt					$ 873,000

[1] These parcels are valued at their appraisal values as per the January 'X2 appraisal by Appraisal, Inc.
[2] These parcels are valued at their original purchase price and were purchased in 'X0.
[3] These parcels are valued at twice the state equalized value that is used to assess property taxes.

(CONTINUED)

F & F FARMS AND AFFILIATES

NOTES TO COMBINING STATEMENT OF ASSETS, LIABILITIES & NET WORTH
DECEMBER 31, 'X2

NOTE G — MACHINERY AND EQUIPMENT:

Machinery and equipment was valued by the owners as follows:

	Cost	Accumulated Depreciation	Net Book Value	Estimated Current Value
Four wheel drive tractor	$ 90,000	$ (45,000)	$ 45,000	$ 75,000
Front wheel assist tractor	75,000	(20,000)	55,000	70,000
Loader tractor	15,000	(6,000)	9,000	10,000
Combine	80,000	(40,000)	40,000	70,000
Chopper	30,000	(18,000)	12,000	25,000
Semi-truck	30,000	(9,000)	21,000	25,000
Tandem stake truck	20,000	(6,000)	14,000	15,000
Beet harvester	40,000	(21,000)	19,000	30,000
Beet topper	15,000	(9,000)	6,000	10,000
Field cultivator	15,000	(9,000)	6,000	5,000
8 row planter	20,000	(8,000)	12,000	14,000
8 row cultivator	8,000	(5,000)	3,000	6,000
8 row puller and windrower	20,000	(9,000)	11,000	10,000
6 bottom plow	12,000	(3,000)	9,000	10,000
Manure spreader	10,000	(4,000)	6,000	5,000
Silo un-loaders	20,000	(17,000)	3,000	5,000
Pickup	20,000	(12,000)	8,000	15,000
Total Machinery and Equipment	$ 520,000	$ (241,000)	$ 279,000	$ 400,000

NOTE H — LIVESTOCK HELD FOR DAIRY AND BREEDING PURPOSES:

Type	Number of Head	Average Market Value	December 31, 'X2
Raised dairy and breeding livestock:			
Sows	34	$ 130	$ 4,420
Milking cows	60	1,100	66,000
Heifers over 1 year old	17	800	13,600
Heifers under 1 year old	23	550	12,650
Total Raised Dairy and Breeding Livestock			96,670
Purchased breeding livestock:			
Boars	4	300	1,200
Total Livestock Held for Dairy and Breeding Purposes			$ 97,870

(CONTINUED)

F & F FARMS AND AFFILIATES

NOTES TO COMBINING STATEMENT OF ASSETS, LIABILITIES & NET WORTH
DECEMBER 31, 'X2

NOTE I — INVESTMENTS IN COOPERATIVES:

	Book Value	Estimated Current Value
Rural Cooperative	$ 29,160	$ 18,714
Ag Livestock Exchange	13,760	8,831
Farm Milk Producers	6,334	
Total allocated patronage dividends	49,254	27,545
Less: Reserve for possible uncollectable dividends	(6,334)	
Net allocated patronage dividends	42,920	
Farm Credit Services stock	20,000	20,000
Rural Cooperative stock	50	50
Total investments in cooperatives	$ 62,970	$ 47,595

Rural Cooperative and Ag Livestock Exchange are presently on a ten year revolvement of allocated patronage and have no unallocated losses. The book value amount of these allocated dividends has been reduced to an estimated current value using a discounted future cash flow method, assuming the ten year revolvement will continue and using a discount rate of 9%. Farm Milk Producers has not revolved patronage during the past few years. In addition, Farm Milk Producers has unallocated losses. Since collection of these allocated dividends is uncertain, no reasonable estimate of the current value can be calculated.

NOTE J — PERSONAL ASSETS AND LIABILITIES:

The Farmers' personal assets and liabilities consist of the following:

			DECEMBER 31, 'X2
ASSETS:			
Cash in a personal checking account.			$ 800
$500,000 life insurance policy on Freddie Farmer with a cash value of $33,000 with Rock Solid Insurance Co. Local Ag Bank is named as beneficiary.			33,000
Personal residence located in Section 7 of Township E, valued by the Farmers.			68,000
Cottage at 800 Sunny Lane, Anytown, USA purchased in 'X1, valued at cost.			120,000
Personal effects:			
Household items valued at the insured amount.	$ 15,000		
'X0 automobile with 30,000 miles valued at blue book.	10,000		
Total personal effects			25,000
Freddie Farmer's 100% vested interest in F & F Farms, Inc. employees' pension and profit sharing plan.			19,000
TOTAL ASSETS			$ 265,800

(CONTINUED)

NOTE J — PERSONAL ASSETS AND LIABILITIES: (CONTINUED)

LIABILITIES:		
VISA credit card with charges through December 30, 'X1 not due until January 15, 'X2. The minimum payment due on this credit card is $175 with interest charged on the unpaid balance at 14.9%.	$	3,500
Mortgage Note payable to Lakeville Bank with monthly payments of principal and interest of $370, with an 8% fixed interest rate until December 30, 'Y9. This mortgage is secured by a cottage at 800 Sunny Lane, Lakeville, Michigan.		39,000
Note payable to GMAC with monthly payments of principal and interest of $200 until December 30, 'X3. This note has a fixed interest rate of 7% and is secured by a 'X0 automobile.		4,500
Estimated income tax (See Note K)		6,105
TOTAL LIABILITIES	$	53,105

NOTE K — ESTIMATED INCOME TAXES:

Estimated income taxes have been provided on the excess of the estimated current values of assets and liabilities over their tax basis as if the estimated current values of the assets and liabilities had been realized on the statement date, using applicable tax laws and regulations. The provision will probably differ from the amounts of income taxes that eventually might be paid because those amounts are determined by the timing and method of disposal or realization and the tax laws and regulations in effect at the time of disposal or realization.

The estimated current values of assets net of liabilities exceeded the tax basis of Freddie and Frieda Farmer, individually, by $2,342,078 at December 31, 'X2, resulting in estimated income tax of $447,475 at December 31, 'X2 on this excess as follows:

Freddie Farmer's Land Rental Proprietorship and Personal Effects

The Farmer's estimated current values of assets net of liabilities for buildings and tiling exceeded the tax value by $222,000 at December 31, 'X2, based on a 29% tax, this excess would result in estimated income tax of	$	64,280
The Farmer's estimated current values of assets net of liabilities for land exceeded the tax value by $2,101,000 at December 31, 'X2, based on a 19% tax, this excess would result in estimated income tax of		399,190
Total estimated income taxes - Land Rental Proprietorship	$	463,470
The Farmer's estimated current values of assets net of liabilities for their pension plan exceeded the tax value by $19,078 at December 31, 'X2, based on a 32% tax, this excess would result in estimated income tax of	$	6,105
Total estimated income taxes - Personal Effects	$	6,105

(CONTINUED)

F & F FARMS AND AFFILIATES

NOTES TO COMBINING STATEMENT OF ASSETS, LIABILITIES & NET WORTH
DECEMBER 31, 'X2

NOTE K — ESTIMATED INCOME TAXES: (CONTINUED)

	DECEMBER 31, 'X2
The Corporation's estimated current values of assets net of liabilities exceeded the book value by $123,610 at December 31, 'X2, this excess would result in estimated income tax as follows:	
Machinery and equipment	$ 121,000
Livestock	17,985
Investments in cooperatives	(15,375)
Total excess	123,610
Tax rate	34%
Tax	42,027
In addition, if the Corporation were to dissolve on December 31, 'X2, there would be additional tax due to the difference in the deferred tax rate of 15% and the top corporate tax rate of 34%, amounting to an additional estimated income tax as follows:	
Total net taxable liabilities over taxable assets	551,562
Tax rate	19%
Tax	104,797
Total corporate estimated taxes	$ 146,824

NOTE L — RECONCILIATION OF NET WORTH

	RETAINED CAPITAL	VALUATION/ PERSONAL ASSET EQUITY	TOTAL NET WORTH
Beginning balance - December 31, 'X1	$ 426,457	$ 1,686,849	$ 2,113,306
Net income	333,335		333,335
Owner withdrawals	(25,000)		(25,000)
Increase in value of personal assets over liabilities		(5,955)	(5,955)
Increase in value of land rental assets		179,000	179,000
Change in excess of estimated current value over cost basis of capital assets		215,382	215,382
Increase in estimated income taxes		(27,265)	(27,265)
Net change	308,335	361,162	669,497
Ending balance - December 31, 'X2	$ 734,792	$ 2,048,011	$ 2,782,803

See Independent Accountant's Review Report.

APPENDIX C: EXAMPLE CALCULATIONS OF THE RECOMMENDED FINANCIAL MEASURES USING DATA FROM APPENDIX A

CALCULATION METHODS

Financial ratios are the result of a comparison using two elements of financial data. A financial ratio may be expressed either as a *percent* (such as XX%) or as a *comparison to one* (such as XX:1), which is sometimes alternatively referred to as the "*number of times*." Following is a brief description of how to perform the actual calculations for the financial measures recommended in this Report. Ordinarily, it is up to a user to determine the actual number of decimal places to be used for any calculation.

Percentages: Expressing a financial measure as a percent is a two-step process:

First, divide one data element by a second data element to arrive at a decimal. (Usually, decimals will result, but if the first number is larger than the second, whole numbers will result. Whole numbers mean the result will be greater than one hundred percent.)

Second, multiply the decimal by one hundred to convert the decimal to a number that is then written with a percent sign.

Write the percent as XX%.

Example: Two hundred and ten thousand (210,000) represents what percent of four hundred thousand (400,000)?

First, 210,000 ÷ 400,000 = 0.525

Second, 0.525 x 100 = 52.5

Write the percent as 52.5%.

Comparison to One: Expressing financial ratios as a comparison to one or "number of times" is really only a single-step process.

First, divide the first data element by the second data element to arrive at a decimal or whole number and decimal.

Write (a) the comparison to one as XX:1, or

(b) the "number of times" as XX times.

Example: *The first number is 247,000; the second number is 95,000.*

As compared to one, how does the first number compare to the second?

First, *247,000 ÷ 95,000 = 2.60*

Write *(a) the comparison to one as 2.60:1.*

(b) the "number of times" as 2.60 times.

EXAMPLE CALCULATIONS

The examples in this appendix are calculations of the recommended financial measures, based on data from the financial statements found in Appendix A.

The calculations are based on the following conventions:

1. The financial measures have been calculated for the farm business. Therefore, except as noted, personal assets, liabilities, income, and expense items have been deducted before completing the calculation.

2. All decimals have been carried out five decimal places, and then the answer is rounded to two decimal places (i.e., hundredths).

3. Certain financial measures are not expressed as financial ratios, but in terms of dollar amounts.

4. If data are not available to calculate average balances, the calculations use only period-ending balances.

5. Dollar signs are not shown for computation numbers.

6. Principal and interest payments on term debt or capital leases are based on amounts paid or accrued in the period for which the financial measure is being calculated, not on amounts expected to be paid or expected to accrue in a future period.

As calculated, the financial measures shown in Appendix C reflect past financial performance and current financial position. However, for purposes of analyzing expected future financial performance and future financial position, it is quite useful to calculate the same financial measures using financial data taken from a projected income statement, a projected statement of cash flows, and a projected balance sheet.

LIQUIDITY

CURRENT RATIO

Computation: Total current farm assets ÷ Total current farm liabilities

Actual Data: 322,014 ÷ 220,892 = 1.45779

Round to 1.46

Write the **Current Ratio** as 1.46:1 (a comparison to one).

WORKING CAPITAL

Computation: Total current farm assets - Total current farm liabilities

Actual Data: 322,014 – 220,892 = 101,122

Write the **Working Capital** as $101,122 (a dollar amount).

WORKING CAPITAL TO GROSS REVENUES RATIO

Computation: Working capital ÷ Gross revenues

Actual Data: 101,122 ÷ 304,699 = 0.33188

Multiply by 100 and round to 33.19%

Write the **Working Capital to Gross Revenues Ratio** as 33.19% (a percent).

SOLVENCY

DEBT/ASSET RATIO

Computation: Total farm liabilities ÷ Total farm assets (Market-Basis or Cost-Basis)

	Market-Basis	Cost-Basis
Actual Data:	555,339 ÷ 1,107,764 = 0.50132	467,214÷ 753,147 = 0.62035
	Multiply by 100 and round to 50.13	Multiply by 100 and round to 62.03
	Write the **Debt/Asset Ratio** as 50.13% (a percent).	Write the **Debt/Asset Ratio** as 62.03% (a percent).

EQUITY/ASSET RATIO

Computation: Total farm equity ÷ Total farm assets (Market-Basis or Cost-Basis)

	Market-Basis	Cost-Basis
Actual Data:	552,425 ÷ 1,107,764 = 0.49868	285,933 ÷ 753,147 = 0.37965
	Multiply by 100 and round to 49.87	Multiply by 100 and round to 37.97
	Write the **Equity/Asset Ratio** as 49.87% (a percent).	Write the **Equity/Asset Ratio** as 37.97% (a percent).

DEBT/EQUITY RATIO

Computation: Total farm liabilities ÷ Total farm equity (Market-Basis or Cost-Basis)

	Market-Basis	Cost-Basis
Actual Data:	555,339 ÷ 552,425 = 1.00527	467,214÷ 285,933 = 1.634
	Round to 1.01	Round to 1.63
	Write the **Debt to Equity Ratio** as 1.01:1 (a comparison to one).	Write the **Debt to Equity Ratio** as 1.63:1 (a comparison to one).

PROFITABILITY

RATE OF RETURN ON FARM ASSETS

Computation: (Net farm income from operations + Farm interest expense – Owner withdrawals for unpaid labor and management) ÷ Average total farm assets (Market-Basis or Cost-Basis).

Market-Basis

Actual Data:

Net farm income from operations	+ 54,306
Farm interest expense	+ 29,577
Withdrawals for unpaid labor and management	- 25,000
	58,883

58,883 ÷ ([1,107,764 + 1,101,003] ÷ 2) =
58,883 ÷ 1,104,384 = 0.05332

Multiply by 100 and round to 5.33

Write the Market-Basis **Rate of Return on Farm Assets** as 5.33% (a percent).

Cost-Basis

58,883 ÷ ([748,509 + 753,147] ÷ 2) =
58,883 ÷ 750,828 = 0.07842

Multiply by 100 and round to 7.84

Write the Cost-Basis **Rate of Return on Farm Assets** as 7.84% (a percent).

RATE OF RETURN ON FARM EQUITY

Computation: (Net farm income from operations – Owner withdrawals for unpaid labor and management) ÷ Average total farm equity (Market-Basis or Cost-Basis).

Market-Basis

Actual Data: (54,306 – 25,000) ÷ ([552,425 + 530,945] ÷ 2) =
29,306 ÷ 541,685 = 0.0541

Multiply by 100 and round to 5.41

Write the Market-Basis **Rate of Return on Farm Equity** as 5.41% (a percent).

Cost-Basis

Actual Data: (54,306 – 25,000) ÷ ([262,750 + 285,933] ÷ 2) =
29,306 ÷ 274,341 = 0.10682

Multiply by 100 and round to 10.68

Write the Cost-Basis **Rate of Return on Farm Equity** as 10.68% (a percent).

OPERATING PROFIT MARGIN RATIO

Computation: (Net farm income from operations + Farm interest expense – Owner withdrawals for unpaid labor and management) ÷ Gross revenues

Actual Data: (54,306 + 29,577 – 25,000) ÷ 304,699 =
58,883 ÷ 304,699 = 0.19325

Multiply by 100 and round to 19.32

Write the **Operating Profit Margin Ratio** as 19.32% (a percent).

NET FARM INCOME

Computation: Net farm income is calculated by matching revenues with expenses incurred to create those revenues, plus the gain or loss on the sale of farm capital assets.

Actual Data: From the accrual adjusted income statement, net farm income was reported as $54,456.

Write the **Net Farm Income** as $54,456 (a dollar amount).

EBITDA

Computation: Net income from operations
+ Interest expense
= EBIT **(**Earnings before interest and taxes)
+ Depreciation and amortization expense
= EBITDA (Earnings before interest, taxes, depreciation and amortization**)**

Actual Data:	Net income from operations	+	54,306
	Interest expense	+	29,577
	EBIT	**=**	**83,883**
	Depreciation[22] and amortization expense	+	41,263
	EBITDA	**=**	**125,146**

[22] May also include depletion of certain natural resources.

REPAYMENT CAPACITY

CAPITAL DEBT REPAYMENT CAPACITY

Please note the following when computing Capital Debt Repayment Capacity:

1. Consider only term debt identified as non-real estate debt and real estate debt. In Appendix A, cash used for principal payments on all term debt in 'X8 was $21,329 which was the same as the current portion in 'X7 but this is not always the case (see Statement of Cash Flows and Balance Sheet).

2. Interest Expense used in the above calculations is the accrual adjusted Interest expense from the income statement. Usually, the amount of interest on term debt and capital leases will be readily available from the records of the agricultural producer.

3. All Income and Expense data used in the above calculations is accrual-adjusted data, not cash flow.

4. Replacement allowance/Unfunded capital expenditures is defined as: The net amount of cash used by investing activities minus any new financing provided to purchase those assets. The user should be able to substitute an allowance value to replace the actual Unfunded Acquisition when an abnormal non-recurring amount is reflected in the statement of cash flows.

Computation:		Net farm income from operations
	+/-	Total miscellaneous revenues/expenses
	+	Total non-farm income*
	+	Depreciation/amortization expense
	-	Total income tax expense
	-	Owner withdrawals (total)
	+	Interest expense on term debt
a	=	**Capital debt repayment capacity**
		Prior year current portion on long-term debt (CPLTD)
	+	Prior year current portion of capital leases
	+	Interest expense on term debt
	=	**Total principal and interest on term debt**
	+	Payment on unpaid operating debt from a prior period (loss carryover)
	+	Total annual payments on personal liabilities (if not included in withdrawals)*
b	=	**Total uses of repayment capacity**
c = a-b		**Capital debt repayment margin**
d	-	Replacement allowance/Unfunded capital expenditures
e = c-d	=	**Replacement margin**

To evaluate the measures for the business only, the items marked above with an asterisk (*) should not be included. In that case certain adjustments may be necessary for the portion of income taxes and owner withdrawals that are paid by non-farm income.

Actual Data:	Net farm income from operations	+	54,306
	Total miscellaneous revenues/expenses	+	150
	Total non-farm income	+	16,500
	Depreciation/amortization expense	+	41,263
	Total income tax expense	-	18,153
	Owner withdrawals (total)	-	29,620
	Interest expense on term debt	+	22,083
a.	**Capital debt repayment capacity**		**86,529**
	Prior year current portion on long-term debt (CPLTD)		21,329
	Prior year current portion of capital leases	+	0
	Interest expense on term debt	+	22,083
	Total principal and interest on term debt		**43,412**
	Payment on unpaid operating debt from prior period (loss carryover)	+	0
	Total annual payment on personal liabilities	+	0
b.	**Total uses of repayment capacity**		**43,412**
c = a-b	**Capital debt repayment margin**	+	**43,117**
d	Replacement allowance/Unfunded capital expenditures	-	21,590
e = c-d	**Replacement margin**		**21,527**

Write the **Capital debt repayment capacity** as $86,529 (a dollar amount).
Write the **Capital debt repayment margin** as $43,117 (a dollar amount).
Write the **Replacement margin** as $21,527 (a dollar amount).
Note: These numbers can be either positive or negative.

TERM DEBT AND CAPITAL LEASE COVERAGE RATIO

Note: Numbers needed for this ratio are included in the computation of Capital Debt Repayment Capacity above.

Computation: Capital debt repayment capacity ÷ Total principal and interest on term debt

Actual Data: 86,529 ÷ 43, 412 = 1.99321

Round to 1.99

Write the **Term Debt and Capital Lease Coverage Ratio** as 1.99:1 (coverage ratios are expressed as "number of times").

REPLACEMENT MARGIN COVERAGE RATIO

Note: Numbers needed for this ratio are included in the computation of Capital Debt Repayment Capacity above.

Computation: Capital debt repayment capacity ÷ (Total uses of repayment capacity plus Replacement allowance/Unfunded capital expenditures)

Actual Data: 86,529 ÷ (44, 162 + 21,590) =
86,529 ÷ 65,002 = 1.33117

Round to 1.33

Write the **Replacement Margin Coverage Ratio** as 1.33:1

FINANCIAL EFFICIENCY

ASSET TURNOVER RATIO

Computation: Gross revenues ÷ Average total farm assets (Market-Basis or Cost-Basis)

Market-Basis

Actual Data: 304,699 ÷ ([1,107,764 + 1,101,003] ÷ 2) =
304,699 ÷ 1,104,384 = 0.2759

Round to 0.28

Write the Market-Basis **Asset Turnover Ratio** as 0.28 times (turnover ratios are expressed as "number of times").

Cost-Basis

Actual Data: 304,699 ÷ ([748,509 + 753,147] ÷ 2) =
304,699 ÷ 750,828 = 0.40582

Round to 0.41

Write the Cost-Basis **Asset Turnover Ratio** as 0.41 times (turnover ratios are expressed as "number of times").

OPERATING EXPENSE RATIO

Computation: (Total operating expenses - Depreciation/amortization expense) ÷ Gross revenues

Actual Data: (220,816 - 41,263) ÷ 304,699 =

179,553 ÷ 304,699 = 0.58928

Multiply by 100 and round to 58.93

Write the **Operating Expense Ratio** as 58.93% (a percent).

DEPRECIATION/AMORTIZATION EXPENSE RATIO

Computation: Depreciation/amortization expense ÷ Gross revenues

Actual Data: 41,263 ÷ 304,699 = 0.13542

Multiply by 100 and round to 13.54

Write the **Depreciation Expense Ratio** as 13.54% (a percent).

INTEREST EXPENSE RATIO

Computation: Total interest expense ÷ Gross revenues

Actual Data: 29,577 ÷ 304,699 = 0.09707

Multiply by 100 and round to 9.71

Write the **Interest Expense Ratio** as 9.71% (a percent).

NET FARM INCOME FROM OPERATIONS RATIO

Computation: Net farm income from operations ÷ Gross revenues

Actual Data: 54,306 ÷ 304,699 = 0.17823

Multiply by 100 and round to 17.82

Write the **Net Farm Income from Operations Ratio** as 17.82% (a percent).

APPENDIX D: EXAMPLE CALCULATIONS OF THE RECOMMENDED FINANCIAL MEASURES USING DATA FROM APPENDIX B

Remember: These measures of financial position and financial performance are based on the agricultural business. Therefore, use the data from the combined financial reports of F & F Farms for the year ending December 31, 'X2.

CALCULATION METHODS

Financial ratios are the result of a comparison using two elements of financial data. A financial ratio may be expressed either as a *percent* (such as XX%) or as a *comparison to one* (such as XX:1), which is sometimes alternatively referred to as the "*number of times*."

Following is a brief description of how to perform the actual calculations for the financial measures recommended in this Report. Ordinarily, it is up to a user to determine the actual number of decimal places to be used for any calculation.

Percentages: Expressing financial ratios as a percent is a two-step process:

First, divide one data element by a second data element to arrive at a decimal. (Usually, decimals will result, but if the first number is larger than the second, whole numbers will result. Whole numbers mean the result will be greater than one hundred percent.)

Second, multiply the decimal by one hundred to convert the decimal to a number that is then written with a percent sign.

Write the percent as XX%.

Example: Two hundred and ten thousand (210,000) represents what percent of four hundred thousand (400,000)?

First, 210,000 ÷ 400,000 = 0.525

Second, 0.525 x 100 = 52.5

Write the percent as 52.5%.

Comparison to One: Expressing financial ratios as a comparison to one or "number of times" is really only a single-step process.

First, divide the first data element by the second data element to arrive at a decimal or whole number and decimal.

Write (a) the comparison to one as XX:1, or

(b) the "number of times" as XX times.

Example: *The first number is 247,000; the second number is 95,000.*

As compared to one, how does the first number compare to the second?

First, *247,000 ÷ 95,000 = 2.60*

Write *(a) the comparison to one as 2.60:1, or*

(b) the "number of times" as 2.60 times.

EXAMPLE CALCULATIONS

The examples in this appendix are calculations of the recommended financial measures, based on data from the financial statements found in Appendix B.

The calculations are based on the following conventions:

1. The financial measures have been calculated for the farm business. Therefore, except as noted, personal assets, liabilities, income, and expense items have been deducted before completing the calculation.

2. All decimals have been carried out five decimal places, then the answer is rounded to two decimal places (i.e., hundredths).

3. Certain financial measures are not expressed as financial ratios, but in terms of dollar amounts.

4. If data are not available to calculate average balances, the calculations use only period-ending balances.

5. Dollar signs are not shown for computation numbers.

6. Principal and interest payments on term debt or capital leases are based on amounts paid or accrued in the period for which the financial measure is being calculated, not on amounts expected to be paid or expected to accrue in a future period.

As calculated, the financial measures shown in Appendix D reflect past financial performance and current financial position. However, for purposes of analyzing expected future financial performance and future financial position, it is quite useful to calculate the same financial measures using financial data taken from a pro forma income statement, a pro forma statement of cash flows, and a pro forma balance sheet.

LIQUIDITY

CURRENT RATIO

Computation: Total current farm assets ÷ Total current farm liabilities

Actual Data: 582,282 ÷ 303,215 = 1.92036

Round to 1.92

Write the **Current Ratio** as 1.92:1 (a comparison to one).

WORKING CAPITAL

Computation: Total current farm assets - Total current farm liabilities

Actual Data: 582,282 ÷ 303,215 = 279,067

Write the **Working Capital** as $279,067 (a dollar amount).

WORKING CAPITAL TO GROSS REVENUE RATIO

Computation: Working Capital ÷ Gross revenue

Actual Data: $279,067 ÷ 1,090,710 = 0.25585

Write the **Working Capital to Gross Revenue Ratio** as 25.59% (a percent).

SOLVENCY

DEBT/ASSET RATIO

Computation: Total farm liabilities ÷ Total farm assets (Market-Basis or Cost-Basis)

	Market-Basis	Cost-Basis
Actual Data:	1,799,639 ÷ 4,369,747 = 0.41184	1,189,345 ÷ 1,924,137 = 0.61811
	Multiply by 100 and round to 41.18	Multiply by 100 and round to 61.81
	Write the **Debt/Asset Ratio** as 41.18% (a percent).	Write the **Debt/Asset Ratio** as 61.81% (a percent).

EQUITY/ASSET RATIO

Computation: Total farm equity ÷ Total farm assets (Market-Basis or Cost-Basis)

	Market-Basis	Cost-Basis
Actual Data:	2,570,108 ÷ 4,369,747 = 0.58815	734,792 ÷ 1,924,137 = 0.38188
	Multiply by 100 and round to 58.82	Multiply by 100 and round to 38.19
	Write the **Equity/Asset Ratio** as 58.82% (a percent).	Write the **Equity/Asset Ratio** as 38.19% (a percent).

DEBT/EQUITY RATIO

Computation: Total farm liabilities ÷ Total farm equity (Market-Basis or Cost-Basis)

	Market-Basis	Cost-Basis
Actual Data:	1,799,639 ÷ 2,570,108 = 0.70022	1,189,345 ÷ 734,792 = 1.61861
	Round to 0.70	Round to 1.62
	Write the **Debt to Equity Ratio** as 0.70:1 (a comparison to one).	Write the **Debt to Equity Ratio** as 1.62:1 (a comparison to one).

PROFITABILITY

RATE OF RETURN ON FARM ASSETS

Computation: (Net farm income from operations + Farm interest expense – Owner withdrawals for unpaid labor and management) ÷ Average total farm assets (Market-Basis or Cost-Basis).

Market-Basis

Actual Data:

Net farm income from operations	+ 391,355
Farm interest expense	+ 50,000
Withdrawals for unpaid labor and management	- 25,000
	416,355

416,355 ÷ ([3,893,047 + 4,369,747] ÷ 2) =
416,355 ÷ 4,131,397 = 0.10078

Multiply by 100 and round to 10.08

Write the Market-Basis **Rate of Return on Farm Assets** as 10.08% (a percent).

Cost-Basis

416,355 ÷ ([1,841,819 + 1,924,137] ÷ 2) =
416,355 ÷ 1,882,978 = 0.22112

Multiply by 100 and round to 22.11

Write the Cost-Basis **Rate of Return on Farm Assets** as 22.11% (a percent).

RATE OF RETURN ON FARM EQUITY

Computation: (Net farm income from operations – Owner withdrawals for unpaid labor and management) ÷ Average total farm equity (Market-Basis or Cost-Basis).

Market-Basis

Actual Data: (391,355 – 25,000) ÷ ([1,894,656 + 2,570,108] ÷ 2) =
366,355 ÷ 2,232,382 = 0.16411

Multiply by 100 and round to 16.41

Write the Market-Basis **Rate of Return on Farm Equity** as 16.41% (a percent).

Cost-Basis

Actual Data: (391,355 – 25,000) ÷ ([426,457+ 734,792] ÷ 2) =
366,355 ÷ 580,625 = 0.63097

Multiply by 100 and round to 63.10

Write the Cost-Basis **Rate of Return on Farm Equity** as 63.10% (a percent).

OPERATING PROFIT MARGIN RATIO

Computation: (Net farm income from operations + Farm interest expense - Owner withdrawals for unpaid labor and management) ÷ Gross revenues

Actual Data: (391,355 + 50,000 - 25,000) ÷ 1,090,710 =

416,355 ÷ 1,090,710 = 0.38173

Multiply by 100 and round to 38.17

Write the **Operating Profit Margin Ratio** as 38.17% (a percent).

NET FARM INCOME

Computation: Net farm income is calculated by matching revenues with expenses incurred to create those revenues, plus the gain or loss on the sale of farm capital assets.

Actual Data: Net farm income (shown as Income before Income Tax) was reported as $392,085.

Write the **Net Farm Income** as $392,085 (a dollar amount).

EBITDA

Computation: Net income from operations (accrual-adjusted)
+ Interest expense
= EBIT (Earnings before interest and taxes)
+ Depreciation and amortization expense
= **EBITDA** (Earnings before interest, taxes, depreciation and amortization)

Actual Data:			
	Net income from operations	+	391,355
	Interest expense	+	50,000
	EBIT	=	**441,355**
	Depreciation[23] and amortization expense	+	80,000
	EBITDA	=	**521,355**

[23] May also include depletion of certain natural resources.

REPAYMENT CAPACITY

CAPITAL DEBT REPAYMENT CAPACITY

Please note the following when computing Capital Debt Repayment Capacity:

1. Consider only term debt identified as non-real estate debt and real estate debt. In Appendix B, cash used for principal payments on all term debt in 'X2 was $88,000 which was not the same as the current portion in 'X1 $90,252 but this is not always the case (see Statement of Cash Flows and Balance Sheet).

2. All Income and Expense data used in the above calculations are accrual, not cash.

3. Replacement allowance/Unfunded capital expenditures is defined as: The net amount of cash used by investing activities minus any new financing provided to purchase those assets. The user should be able to substitute an allowance value to replace the actual Unfunded Acquisition when an abnormal non-recurring amount is reflected in the statement of cash flows.

Computation:		Net farm income from operations
	+/-	Total miscellaneous revenues/expenses
	+	Total non-farm income*
	+	Depreciation/amortization expense
	-	Total income tax expense
	-	Owner withdrawals from business
	+	Interest expense on term debt
a	=	**Capital debt repayment capacity**
		Prior year current portion on long-term debt (CPLTD)
	+	Prior year current portion of capital leases
	+	Interest expense on term debt
	=	**Total principal and interest on term debt**
	+	Payment on unpaid operating debt from a prior period (loss carryover)
	+	Total annual payments on personal liabilities (if not included in withdrawals)*
b	=	**Total uses of repayment capacity**
c = a-b	=	**Capital debt repayment margin**
d	-	Replacement allowance/Unfunded capital expenditures
e = c-d	=	**Replacement margin**

To evaluate the measures for the business only, the items marked above with an asterisk (*) should not be included. In that case certain adjustments may be necessary for the portion of income taxes and owner withdrawals that are paid by non-farm income.

Actual Data:	Net farm income from operations	+	391,355
	Total miscellaneous revenues/expenses	+	730
	Total non-farm income	+	0
	Depreciation/amortization expense	+	80,000
	Total income tax expense	-	58750
	Owner withdrawals from business	-	25,000
	Interest expense on term debt	+	42,354
a.	**Capital debt repayment capacity**		**430,689**
	Prior year current portion on long-term debt (CPLTD)	+	90,252
	Prior year current portion of capital leases	+	0
	Interest expense on term debt	+	42,354
	Total principal and interest on term debt		**132,606**
	Payment on unpaid operating debt from prior period (loss carryover)	+	0
	Total annual payment on personal liabilities	+	0
b.	**Total uses of repayment capacity**		**132,606**
c = a-b	**Capital debt repayment margin**		**298,083**
d	Replacement allowance/Unfunded capital expenditures	-	67,528
e = c-d	**Replacement margin**		**230,555**

Write the **Capital debt repayment capacity** as $430,689 (a dollar amount).
Write the **Capital debt repayment margin** as $298,083 (a dollar amount).
Write the **Replacement margin** as $230,555 (a dollar amount).
Note: These numbers can be either positive or negative.

TERM DEBT AND CAPITAL LEASE COVERAGE RATIO

Note: Numbers needed for this ratio are included in the computation of Capital Debt Repayment Capacity above.

Computation: Capital debt repayment capacity ÷ Total principal and interest on term debt

Actual Data: 430,689 ÷ 132,606 = 3.24788

Round to 3.25

Write the **Term Debt and Capital Lease Coverage Ratio** as 3.25 times (coverage ratios are expressed as "number of times").

REPLACEMENT MARGIN COVERAGE RATIO

Note: Numbers needed for this ratio are included in the computation of Capital Debt Repayment Capacity above.

Computation: Capital debt repayment capacity ÷ (Total uses of repayment capacity plus Replacement allowance/Unfunded capital expenditures)

Actual Data: 430,689 ÷ (132,606+ 67,528) =
430,689 ÷ 200,134 = 2.152

Round to 2.15

Write the **Replacement Margin Coverage Ratio** as 2.15:1

Usually, the amount of interest on term debt and capital leases will not be recorded in the notes to the financial statements. The following is an example of how interest paid on term debt could be calculated if the financial statement did not provide that information. The following assumptions and calculations will give a close approximation of the amount of interest on term debt:

Consider only debt identified as long-term debt (see Appendix B — Note 6). Ignore short-term notes payable.

1. The repayment plans for the three term loans are "level," which means each installment is the same amount, but the principal portion increases over time and the interest portion decreases over time. For the land contracts, there is a specific principal reduction required annually, together with accrued interest.
2. Assume the interest rate stated to have been simple interest based on a 365-day year. Also, the interest rates are assumed to have been unchanged for the entire year of 'X2 even though the machinery and equipment note has a variable rate loan contract.

The formula for calculating interest is: principal x rate x time. Based on the information supplied, it is reasonable to assume the installments for the two mortgages are paid on December 31, of each year. Therefore, only the machinery and equipment loan require more than one calculation to determine the correct amount of interest for 'X2.

John Deere Finance Co.		
(a) $40,000 x 0.04 x (31 ÷ 365) =		136
Local Ag Bank — Machinery and Equipment		
(a) $244,000 x 0.045 x (90 ÷ 365) =	2,707	
(b) $180,000 x 0.045 x (275 ÷ 365) =	6,103	8,810
Local Ag Bank — Mortgage		
(a) $200,000 x 0.0425 x (365 ÷ 365) =		8,500
Farm Credit Service — Mortgage		
(a) $385,000 x 0.0425 x (365 ÷ 365) =		16,363
Land Contracts		
Smith $75,000 x 0.04 =	3,000	
Jonrd $40,000 x 0.043 =	1,720	
Farmer $85,000 x 0.045 =	3,825	
Total		8,545
Total interest that would have accrued on long-term debt in 'X2		$42,354

FINANCIAL EFFICIENCY

ASSET TURNOVER RATIO

Computation: Gross revenues ÷ Average total farm assets (Market-Basis or Cost-Basis)

Market-Basis

Actual Data: 1,090,710 ÷ ([3,893,047 + 4,369,747] ÷ 2) =
1,090,710 ÷ 4,131,397 = 0.26401

Round to 0.26

Write the Market-Basis **Asset Turnover Ratio** as 0.26 times (turnover ratios are expressed as "number of times").

Cost-Basis

Actual Data: 1,090,710÷ ([1,841,819 + 1,924,137] ÷ 2) =
1,090,710 ÷ 1,882,978 = 0.57925

Round to 0.58

Write the Cost-Basis **Asset Turnover Ratio** as 0.58 times (turnover ratios are expressed as "number of times").

OPERATING EXPENSE RATIO

Computation: (Total operating expenses - Depreciation/amortization expense) ÷ Gross revenues

Actual Data: (649,355 - 80,000) ÷ 1,090,710 =
569,355 ÷ 1,090,710 = 0.522
Multiply by 100 and round to 52.2

Write the **Operating Expense Ratio** as 52.2% (a percent).

DEPRECIATION/AMORTIZATION EXPENSE RATIO

Computation: Depreciation/amortization expense ÷ Gross revenues

Actual Data: 80,000 ÷ 1,090,710 = 0.07335

Multiply by 100 and round to 7.33

Write the **Depreciation Expense Ratio** as 7.33% (a percent).

INTEREST EXPENSE RATIO

Computation: Total farm interest expense ÷ Gross revenues

Actual Data: 50,000 ÷ 1,090,710= 0.04584

Multiply by 100 and round to 4.58

Write the **Interest Expense Ratio** as 4.58% (a percent).

NET FARM INCOME FROM OPERATIONS RATIO

Computation: Net farm income from operations ÷ Gross revenues

Actual Data: 391,355 ÷ 1,090,710 = 0.35881

Multiply by 100 and round to 35.88

Write the **Net Farm Income from Operations Ratio** as 35.88% (a percent).

APPENDIX E: CASH VS. ACCRUAL ADJUSTED

One of the most important business decisions made by an agricultural producer is selection of a record keeping system for the business. The system should be adequate both to support making business decisions and also for calculating taxable income.

While other methods may be permissible, the vast majority of agricultural producers will keep their records on either:

1. The cash receipts and disbursements method, or

2. An accrual method.

For calculating taxable income, except for corporate taxpayers with revenues exceeding $25,000,000, either method of accounting (i.e., cash or accrual) will likely be acceptable. However, it is not acceptable to keep books throughout the year using one method of accounting (such as accrual) and then convert at year-end to another method (such as cash), solely because that second method might provide a more favorable computation of taxable income. Thus, while the use of a cash basis record keeping system, with subsequent adjustments to generate "accrual adjusted" financial statements allows a farmer or rancher to remain a cash basis taxpayer — converting to a full accrual basis record keeping system would also require that taxable income be calculated on the accrual basis.

While an accrual accounting system would produce a correct matching of revenues and the expenses incurred to create those revenues, there are three primary reasons why most agricultural producers will likely remain on a cash basis accounting system. First, an accrual system of maintaining books would require an understanding of accounting principles and concepts that most farmers and ranchers simply do not have. Second, if required to maintain an accrual system, most farmers and ranchers would be forced to incur significant costs either to hire an accountant or to pay an outside accounting firm to keep their records. Third, a cash system offers flexibility in tax planning. Thus, because of the simplicity and relatively inexpensive maintenance, most agricultural producers will likely select the "cash receipts and cash disbursements" method for maintaining their books and calculating taxable income.

In simple terms, the primary difference between the accrual basis method and the cash basis method is the timing of when income and expenses are recognized and recorded on the income statement. The cash basis generally recognizes income when cash is received and expenses when cash is paid. The accrual system, on the other hand, recognizes income when it is earned (e.g., the creation of assets such as accounts receivable) and expenses when they are incurred (e.g., the creation of liabilities such as accounts payable). The accrual system attempts to record the income of the business in the specific period of time it was earned by the business, and then match the expenses incurred in producing that income. The result of "matching" the revenues with the expenses incurred to create the revenues is a much more realistic reflection of net income for the period.

Unfortunately, taxable income, computed on a cash basis, is often used as a measure of business performance. The results can be very misleading. A business can be going broke and still generate a positive cash basis income for several years by building accounts payable, accruing but not paying expenses, selling assets, and not replacing capital assets as they wear out. Numerous studies have demonstrated that strictly cash basis analysis can lead to lags of two years or more in recognizing profitability problems. Cash basis accounting can also delay recognition of profits during periods of business growth and recovery. Such delay in recognizing profitability problems is due to the length

of the business's cash conversion cycle, i.e., the time from the start of the production process until cash is finally received from the sale of the output. The lack of reliability of cash basis income statements as a measure of business performance was further documented by a research study at the University of Illinois which analyzed income information for 151 cash grain farmers over a six-year period. It found an 85 percent average annual difference in net farm income when measured on an accrual adjusted basis versus a cash basis, and in individual cases up to a 400 percent difference.

Balance sheets prepared solely from cash basis records will not include accrual items and can be just as misleading as the cash basis income statement in terms of accurately reflecting a business's financial position. For example, a complete, accrual adjusted balance sheet would include inventories of commodities raised on the farm, accounts receivable, prepaid expenses, cash invested in growing crops, accounts payable, accrued expenses and deferred taxes. Many computerized accounting systems and tax preparers who work with only cash basis records, will generate balance sheets which look accurate but do not include many of those items. It is absolutely essential for accurate income analysis, as well as for accurately measuring the business' financial position, that complete balance sheets including accrual items be prepared at the beginning and end of the period for which income is measured.

The accrual basis of maintaining financial records is the most accurate method of measuring financial performance or business profitability, especially for agriculture because:

1. Most farm businesses value inventories at market value;

2. Work in process is generally valued at direct cost only;

3. Agricultural producers frequently make substantial prepayments for supplies, rents, etc.; and

4. Farms and ranches tend to have relatively long production/inventory cycles.

Very few agricultural producers are currently using "accrual" accounting systems. The FFSC has, therefore, recommended using a process by which cash basis income data can be adjusted to produce an approximation of accrual income. The result is an "accrual adjusted" income statement. The only requirements are accurate records of cash receipts and cash disbursements for the period being analyzed, and complete balance sheets (i.e., including accrual items) as of the beginning and end of the period.

The calculated "accrual adjusted" income will generally differ from an accrual income determined in accordance with generally accepted accounting principles because inventories may be valued at their current market value rather than their cost, and because work in process (in the case of growing crops) is usually valued reflecting direct costs only, whereas generally accepted accounting principles would also include indirect labor and allocated overhead. The difference is potentially greater in the case of developing livestock since using the current market price to value the change in inventory, which is recognized in the revenue adjustment, would not follow the lower of cost or market approach recommended by generally accepted accounting principles.

The process for adjusting cash basis income to approximate accrual income is outlined in the diagram shown below. "Beginning" and "ending" refer to information from the balance sheets as of the beginning and the end of the accounting period.

CASH BASIS	ADJUSTMENTS	ACCRUAL BASIS
Cash receipts	- Beginning inventories + Ending inventories - Beginning accounts receivable + Ending accounts receivable	Gross revenues
Cash disbursements	- Beginning accounts payable + Ending accounts payable - Beginning accrued expenses + Ending accrued expenses + Beginning prepaid expenses - Ending prepaid expenses + Beginning unused supplies (i.e., fuel, chemicals, seed. . .) - Ending unused supplies + Beginning investment in growing crops - Ending investment in growing crops (see Note 1)	Operating expenses
Depreciation expense	No adjustments made (see Note 2)	Depreciation expense
Cash Net Income, Pre-tax		**Accrual Adjusted Net Income, Pre-tax**
Cash income taxes and Social Security tax payments	- Beginning income taxes and Social Security taxes payable + Ending income taxes and Social Security taxes payable - Beginning current portion of deferred tax liability + Ending current portion of deferred tax liability (see Note 3)	Accrual adjusted income taxes and Social Security taxes
Cash Net Income, After Tax		**Accrual Adjusted Net Income, After Tax**

NOTE 1: Remember to avoid double counting items included in prepaid expenses and unused supplies when determining the investment in growing crops.

NOTE 2: Because depreciation is a non-cash expense, it would technically not be reflected on a cash basis income statement. Instead the statement would show the cash payments for property, plant and equipment rather than allocating the cost of the asset over its useful life. However, because the Internal Revenue Code requires capital assets to be depreciated, even for cash basis taxpayers, the common practice is to record depreciation expense for both cash basis and accrual basis income accounting.

NOTE 3: It is possible to have an income tax and Social Security tax receivable (refund due) or a deferred tax asset. In these instances the signs (+/-) for the asset amounts as of the beginning and end of the period would be reversed when making the accrual adjustments.

In order to track the logic behind the cash to accrual adjustment process, consider the following example of a cash to accrual adjustment on grain sales.

	Cash receipts from grain sales during ’X1	$150,000.00
less:	Beginning grain inventory (grain sold in ’X1 but not produced in ’X1)	-40,000.00
plus:	Ending grain inventory (grain produced in ’X1 but not sold in ’X1)	+28,000.00
equals:	Accrual grain revenue (the approximate value of grain produced in ’X1)	$138,000.00

Consider a second example of an expense adjustment for accrued interest.

	Cash disbursements for interest paid in ’X1	$36,000.00
less:	Beginning accrued interest (interest paid in ’X1 for funds used in ’X0)	-9,000.00
plus:	Ending accrued interest (interest charged on funds used in ’X1, but not paid in ’X1)	+7,000.00
equals:	Accrual interest expense (the approximate cost of borrowed funds used in ’X1)	$34,000.00

The same logic can be applied to help understand the cash to accrual adjustment for other accrual items. The basic rule to remember when making the cash to accrual adjustment is that an increase in an accrual type asset item will cause net income to increase, while an increase in an accrual type liability item will cause net income to decrease.

Converting from a set of financial statements based on cash accounting to a set of accrual adjusted financial statements can range from a very simple to a very complex process. The degree of complexity will be determined by two factors. One factor is the amount and degree of detail in the information available. The other factor is whether the income statement will be structured to reflect a detailed analysis of different enterprises or comparisons of line item revenues and expenses.

The simplified method used in the example financial statements in this appendix will yield the same net income figure and balance sheet totals. However, because the individual accounts (such as individual enterprise revenue and expense accounts, allocated overhead accounts, etc.) are not adjusted, the determination of meaningful enterprise cost and return information is virtually impossible.

A more involved method would require a detailed enterprise accounting system with the adjustments for the change between beginning and ending accounts being posted directly to the individual accounts. While such detail can provide very valuable management information, maintaining a detailed enterprise accounting system would normally require someone very knowledgeable about accounting, the help of an accountant, or assistance from a professional farm business consultant.

In the purest sense, for financial statements prepared on the cash basis, the balance sheet would present only two accounts: cash and owner equity; and the income statement would present all cash receipts as revenue and present all cash disbursements (regardless of whether they are made to purchase land, construct buildings, purchase machinery, pay for seed, fuel, labor, etc.) as expenses. However, what agricultural producers generally refer to as "cash basis" is rather a modification of cash basis accounting which generally conforms to the requirement for calculating taxable income on a cash basis. Accordingly, depreciable assets (buildings, equipment, purchased breeding livestock, etc.) are shown on the balance sheet and debt incurred for borrowed money is also shown on the balance sheet. For purposes of this Appendix, what will be referred to as "cash basis accounting" will be the cash basis of accounting modified to conform to the requirements for calculating taxable income on a cash basis.

Review the example balance sheets and income statements for Cash Grain Farms to develop a better understanding of the differences between statements based on accrual adjusted information and statements based on cash accounting.

Figure 1. Balance Sheet (Cost Basis) — Based on Cash Accounting

CASH GRAIN FARMS
Balance Sheet
December 31, 'X1
(end of year)

ASSETS		**LIABILITIES**	
Current Assets		**Current Liabilities**	
Cash	$23,000	Notes Payable	$56,000
		Current Portion Term Debt	8,000
TOTAL CURRENT ASSETS	$23,000	**TOTAL CURRENT LIABILITIES**	$64,000
Non-Current Assets		**Non-Current Liabilities**	
Machinery and Equipment	$190,000	Notes	$128,000
Buildings and Improvements	140,000	Mortgages	243,000
Land	510,000		
TOTAL NON-CURRENT ASSETS	$840,000	**TOTAL NON-CURRENT LIABILITIES**	$371,000
		TOTAL LIABILITIES	$435,000
		TOTAL OWNER EQUITY	$428,000
TOTAL ASSETS	$863,000	**TOTAL LIABILITIES AND OWNER EQUITY**	$863,000

Figure 2. Balance Sheet (Cost Basis) — Including Accrual Items

CASH GRAIN FARMS
Balance Sheet
December 31, 'X1
(end of year)

ASSETS		**LIABILITIES**	
Current Assets		**Current Liabilities**	
Cash	$23,000	Accounts Payable*	$ 5,000
Accounts Receivable*	27,000	Notes Payable	56,000
Supplies, Purchased*	10,000	Current Portion, Term Debt	8,000
Grain Inventory*	80,000	Accrued Interest*	21,000
Prepaid Expenses*	3,000	Income and Social Security Taxes Payable*	9,000
Investment in Growing Crops*	20,000	Deferred Taxes*	34,000
TOTAL CURRENT ASSETS	$163,000	**TOTAL CURRENT LIABILITIES**	$133,000
Non-Current Assets		**Non-Current Liabilities**	
Machinery and Equipment	$190,000	Notes	$128,000
Buildings and Improvements	140,000	Mortgages	243,000
Land	510,000		
TOTAL NON-CURRENT ASSETS	$840,000	**TOTAL NON-CURRENT LIABILITIES**	$371,000
		TOTAL LIABILITIES	$504,000
		TOTAL OWNER EQUITY	$499,000
TOTAL ASSETS	$1,003,000	**TOTAL LIABILITIES AND OWNER EQUITY**	$1,003,000

*These accounts were **not** reflected on the balance sheet prepared using the cash basis of accounting (Figure 1).

Figure 3. Balance Sheet (Cost Basis) — Including Accrual Items

CASH GRAIN FARMS
Balance Sheet
December 31, 'X0
(beginning of year)

ASSETS		**LIABILITIES**	
Current Assets		**Current Liabilities**	
Cash	$15,000	Accounts Payable*	$17,000
Accounts Receivable*	22,000	Notes Payable	62,000
Supplies, Purchased*	8,000	Current Portion Term Debt	8,000
Grain Inventory*	60,000	Accrued Interest*	23,000
Prepaid Expenses*	4,000	Income and Social Security Taxes Payable*	6,000
Investment in Growing Crops*	16,000	Deferred Taxes*	21,000
TOTAL CURRENT ASSETS	$125,000	**TOTAL CURRENT LIABILITIES**	$137,000
Non-Current Assets		**Non-Current Liabilities**	
Machinery and Equipment	$206,000	Notes	$132,000
Buildings and Improvements	150,000	Mortgages	247,000
Land	510,000		
TOTAL NON-CURRENT ASSETS	$866,000	**TOTAL NON-CURRENT LIABILITIES**	$379,000
		TOTAL LIABILITIES	$516,000
		TOTAL OWNER EQUITY	$475,000
TOTAL ASSETS	$991,000	**TOTAL LIABILITIES AND OWNER EQUITY**	$991,000

*These accounts would **not** have been recorded on a balance sheet using the cash basis of accounting.

Figure 4. Income Statement — Cash Basis

CASH GRAIN FARMS
Year Ending December 31, 'X1

RECEIPTS			
Cash Grain Sales	$150,000		
Government Program Payments	25,000		
TOTAL CASH RECEIPTS			$175,000
EXPENSES			
Cash Operating Expenses	85,000		
Interest Paid	37,000		
TOTAL CASH EXPENSES		122,000	
Depreciation*		27,000	
TOTAL EXPENSES			149,000
Net Farm Income from Operations (cash basis)			26,000
Gain/Loss on Sale of Farm Capital Assets*			0
Net Farm Income, Before Tax (cash basis)			26,000
Income Taxes and Social Security Taxes Paid			8,000
NET FARM INCOME, AFTER TAX (cash basis)			$ 18,000

*Remember, because the Internal Revenue Code requires capital assets (machinery, equipment, buildings, etc.) to be depreciated over the useful life of the assets, the common practice, even with cash basis accounting, is to record a depreciation charge. Because capital assets (which give rise to the depreciation charge) have been capitalized and then depreciated, any gain/loss on their sale is determined by comparing the sale price to the undepreciated cost basis of the capital assets.

Figure 5. Income Statement — Accrual Adjusted Basis

CASH GRAIN FARMS
Year Ending December 31, 'X1

REVENUES			
Cash Receipts from Grain Sales	$150,000		
Change in Grain Inventory*	+20,000		
Government Program Payments	25,000		
Change in Accounts Receivable*	+5,000		
GROSS REVENUES			$200,000
EXPENSES			
Cash Disbursements for Operating Expenses	$ 85,000		
Change in Accounts Payable*	-12,000		
Change in Prepaid Expenses*	+ 1,000		
Change in Unused Supplies*	- 2,000		
Change in Investments in Growing Crops*	- 4,000		
Depreciation	27,000		
TOTAL OPERATING EXPENSES		$ 95,000	
Interest Paid	$ 37,000		
Change in Accrued Interest*	-2,000		
Accrual Interest Expense		35,000	
TOTAL EXPENSES			$130,000
Net Farm Income from Operations			$ 70,000
Gain/Loss on Sale of Farm Capital Assets			$ 0
Net Farm Income			$ 70,000
Income Taxes and Social Security Taxes Paid	$ 8,000		
Change in Income Taxes and Social Security Taxes Payable*	+3,000		
Changes in Current Portion of Deferred Taxes*	+13,000		
Accrual Income Taxes and Social Security Taxes			$ 24,000
NET FARM INCOME, AFTER TAX, ACCRUAL ADJUSTED			$ 46,000

*These items were **not** included in the income statement prepared using the cash basis of accounting.

BALANCE SHEET — COMPARE 'X1 BASED ON CASH ACCOUNTING TO THE STATEMENT INCLUDING ACCRUAL ITEMS

Although both balance sheets were prepared for the same firm as of the same date, they present a very different picture of Cash Grain Farms' financial position because of the accounting method used.

On a balance sheet prepared from cash basis records, the following accounts are not recorded at all:

a. Accounts receivable
b. Inventories of grain raised on the farm
c. Supplies purchased
d. Prepaid expenses
e. Accounts payable
f. Accrued interest
g. Income taxes and Social Security taxes payable
h. Deferred taxes

Compare Figure 1 (cash basis) with Figure 2 (including accrual items). After including the accrual type items, total assets were greater by $140,000 (from $863,000 to $1,003,000) and total liabilities were greater by $69,000 (from $435,000 to $504,000). Owner equity was greater by $71,000 (from $428,000 to $499,000). These significant changes occurred because accrual accounting resulted in the recording of all assets and all liabilities regardless of whether cash had been paid.

INCOME STATEMENT — COMPARE 'X1 CASH BASIS TO ACCRUAL ADJUSTED BASIS

Cash Grain Farms appears to be moderately profitable on a cash basis. However, adjusting the cash basis income statement to approximate an accrual adjusted income statement for the same period, net farm income after tax increased from $18,000 to $46,000. Because of the accrual adjustments, gross revenues were greater by $25,000 (from $175,000 to $200,000) while total expenses were less by $19,000 (from $149,000 to $130,000). However, because of the accrued and deferred income taxes, the deduction for income taxes is increased by $16,000 (from $8,000 to $24,000).

After making the accrual adjustments to the income statement, Cash Grain Farms was shown to be **more profitable** than had otherwise been portrayed by the cash basis method of accounting.

However, the more critical situation would occur when the accrual adjusted net farm income showed the business to be **less profitable** than had otherwise been portrayed by the cash basis accounting method. In such a case, the agricultural producer is simply not doing as well, from a financial performance or business profitability standpoint, as he/she may have been led to believe by relying solely on cash basis income statements.

As the preceding illustration shows, computing income on a cash basis can materially misrepresent profitability for an accounting period when there is a time lag between the exchange of goods and services and the related cash receipt or cash disbursement. However, such distortion can be substantially reduced by also considering the net changes in certain balance sheet accounts.

Return to the example of Cash Grain Farms. A quick way to convert the cash basis net farm income figure of $18,000 to the accrual adjusted income of $46,000 is simply to add or subtract the various net changes in inventories, accounts receivable, accounts payable, and other non-cash transactions affecting the "true" profitability of the operation. The net changes affecting "true" net farm income of Cash Grain Farms for the year 'X1 are shown below.

Figure 6.

	Balance Sheet (cost basis) Including Accrual Items (See figures 2 and 3)			**Adjustments to Cash Basis Net Farm**
	12/31/X0	**12/31/X1**	**Net Change**	**Income***
Inventories				
Grain	60,000	80,000	+20,000	+20,000
Supplies purchased	8,000	10,000	+2,000	+2,000
Investment in growing crops	16,000	20,000	+4,000	+4,000
Accounts Receivable	22,000	27,000	+5,000	+5,000
Prepaid Expenses	4,000	3,000	-1,000	-1,000
Accounts Payable	17,000	5,000	-12,000	+12,000
Accrued Interest	23,000	21,000	-2,000	+2,000
Income Taxes and Social Security Taxes Payable	6,000	9,000	+3,000	-3,000
Current Portion of Deferred Tax Liability	21,000	34,000	+13,000	-13,000

* REMEMBER: The basic rules for adjustments, from the cash basis income statement to produce an accrual adjusted income statement, are:

1. For an accrual type asset: an increase will cause net income to increase; a decrease will cause net income to decrease.

2. For an accrual type liability: an increase will cause net income to decrease; a decrease will cause net income to increase.

Figure 7 presents a standard, simplified format for converting a cash basis income statement to an accrual adjusted income statement using the net changes in the balance sheet accounts. This abbreviated format is useful if the objective of the analysis is only to determine the approximate level of profitability after matching revenues with the expenses incurred to create the revenues.

Figure 7. Using Net Changes in Non-cash Transactions to Convert Net Income from Cash to Accrual Adjusted

CASH GRAIN FARMS
January 1 to December 31, 'X1

	Year Ending 12/31/X1
Cash Net Farm Income, After Tax	$18,000
Increase in Inventory	26,000
Decrease in Inventory	( )*
Increase in Accounts Receivable	5,000
Decrease in Accounts Receivable	( )*
Increase in Prepaid Expenses	
Decrease in Prepaid Expenses	(1,000)*
Decrease in Accrued Interest	2,000
Increase in Accrued Interest	( )*
Decrease in Accounts Payable	12,000
Increase in Accounts Payable	( )*
Decrease in Income Taxes and Social Security Taxes Payable	
Increase in Income Taxes and Social Security Taxes Payable	(3,000)*
Decrease in Current Portion of Deferred Tax Liability	
Increase in Current Portion of Deferred Tax Liability	(13,000)*
ACCRUAL ADJUSTED NET FARM INCOME, AFTER TAX (sum of above)	**$46,000**

*The parentheses signify changes in the balance sheet accounts that require "accrual adjustments" to reflect a **decrease** in "true" net income. These entries are to be subtracted when calculating the accrual adjusted net income from cash basis net income.

NOTE: The foregoing schedule using only net changes in non-cash transactions does not necessarily represent all possible adjustments that might be appropriate to make. For example, changes in raised breeding livestock discussed in Appendix F have not been included in this simplified format.

SUMMARY

The preceding discussion focuses on the two extremes of accounting methods: Cash basis and accrual basis.

Cash basis (or cash receipts and cash disbursements) accounting methods are relatively simple and easy to maintain because the checkbook is the primary source of all data entries. Remember: no transaction is recorded unless cash is paid or received (check and cash are considered the same for this purpose). However, cash basis accounting can present a distorted financial position (because the balance sheet may not present all assets and/or all liabilities) and a materially misleading profitability picture (because revenues are not matched with expenses incurred to create those revenues).

Accrual accounting methods require more complex record keeping systems. However, accrual accounting presents a correct financial position (because all assets and all liabilities are recorded on the balance sheet) and a more accurate profitability picture (because revenues are recognized when they are produced/earned and are matched against the expenses incurred to create those revenues).

An agricultural producer can enjoy both the simplicity of cash basis accounting and the correctness of accrual accounting. The best of both worlds can occur by:

a. Maintaining complete cash basis income (receipts) and expense (disbursements) records throughout the year;

b. Preparing a complete balance sheet (including accrual items) at the beginning and end of each year; and

c. Then making the simple "conversion" of the resulting cash basis net farm income to determine the accrual adjusted net farm income.

APPENDIX F: METHODS FOR APPLYING BASE VALUE SYSTEM FOR RAISED BREEDING LIVESTOCK

As an alternative to full cost absorption, the FFSC recommends that a **base value method** may be used for valuing raised breeding livestock by an agricultural producer who maintains accounting records on a cash basis but, after the close of each accounting period, adjusts those cash basis records to approximate a matching of revenues with expenses incurred to create those revenues. The FFSC does not recommend use of a quantity based, market value system. Market values of raised breeding livestock would be recorded on a market value balance sheet, but would not be used in determining net farm income.

For the **base value method,** a "base value" is established for various categories of raised breeding animals. As individual or groups of animals move through those categories in a normal life cycle, valuation would be according to the base value established for that particular category at the date valuation is being done. If multiple categories are used to identify a life cycle for the breeding animals, then there will be "multiple transfer points" with a change in valuation as the animals progress from one category into another. The change in value of raised breeding livestock that results either from maturing livestock moving from one category into another category having a higher base value or from increasing the number of raised replacements is included as an adjustment to cash basis income. In addition to the cash receipts from sale of raised breeding livestock, the gain or loss from sale of that raised breeding livestock is also included as an adjustment to cash basis income. The cash costs of raising the breeding livestock will have already been included in cash basis expenses. In years where there is a change in the base value of one or more categories of raised breeding animals, the income or loss resulting from that change would be included as a component of income or loss from the sale of capital assets.

Changes in the value of the breeding herd, flock, etc. due to changes in market prices of livestock are excluded from income when the **base value method** of valuing breeding livestock is used for all raised breeding animals in the herd, flock, etc.

The concepts regarding valuation of raised breeding livestock are equally applicable regardless of whether the agricultural producer has hogs, beef cattle, sheep, dairy cattle, llamas, goats, horses, mink, etc. The critical issue is that the life cycle (from birth to disposal) of the raised breeding animal is longer than one business cycle, which is usually one year. For simplicity, a dairy cattle example will be used in the following discussions and illustrations.

BASE VALUE METHOD

The base value method would ordinarily be used by an agricultural producer who maintains accounting records on a cash basis but, after the close of each accounting period, adjusts those cash basis records to approximate a matching of revenue with expenses incurred to create those revenues. If full cost recognition is approximated when the agricultural producer establishes the base values, the accrual adjusted income number should closely reflect the financial performance of the operation.

BALANCE SHEET TREATMENT

1. **Selection of Base Value.** "Base values" selected are most useful when they closely approximate the full cost of raising the animals to their current status. For example, the base value for cows would be the approximate cost of raising heifers to freshening. The base value of a bred heifer would be the approximate cost of raising an animal to breeding age. The base value can be established from the actual or estimated cost of raising the animal to its current status, from data published by USDA, land grant institutions or other similar sources, or from other conventional practices followed in the industry.

   It is expected that in most cases the base values will remain constant for a number of years. However, if a cost basis balance sheet of the business, developed using base values for raised breeding livestock, is to be presented at a realistic value, periodic changes may need to be made. If the "group approach" to base values (discussed below) is used, net income of the business will be influenced in the year of the change in base values. The longer the period between changes in base values, the greater may be the effect of the change on income in the year of the change. When determining the frequency and magnitude of changes, the agricultural producer should consider the trade-off between the effect on net income and the desire for a constant value.

2. **Animal Groupings.** Effective use of the base value method requires that the individual categories of raised breeding animals be clearly identified. The categories which are to be used must be clearly defined, have some practical and economic basis for that definition, and must not overlap. One of the easiest ways to accomplish the identification for raised breeding animals is by age groupings of animals which represent equal portions of a year. For example, a dairy herd could be divided into six month age groups, such as:

Calves	under six months
Open Heifers	six months to one year
Young Heifers	one year to 18 months
Old Heifers	18 months to two years
Bred Heifers	over two years
Cows	

   A simpler approach for this dairy example, but one for which it may be more difficult to establish values, would be to establish categories based on age groupings of one year increments:

Calves	under one year
Heifers	one to two years
Old Bred Heifers	over two years
Cows	

   For a herd of beef cattle, the categories might be simplified to:

Calves	under one year
Yearlings	one to two years
Cows	over two years
Bulls	in service

If the categories used are not equal portions of a year, individual records must be maintained to accurately reflect the number of animals moving into and out of each category during the year.

3. **Application of Base Values.** To apply a base value system, it is absolutely critical to establish the numbers of raised breeding animals for which valuation is to be determined. **Remember: purchased breeding animals are not to be included in this asset valuation and income adjustment process.** Tables 1 and 2 are examples for a dairy operation which provide all the detail necessary with respect to animal categories and numbers.

Table 1. Schedule of Raised Breeding Animals (Dairy) as of December 31, 'X1

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Beginning of Year			Transf.		Transf.	**End of Year**	Net Change from 12/31/X0
Catagory	**(12/31/X0)**	Sold	Died	Out	Born	In	**(12/31/X1)**	to 12/31/X1
Calves <1 year	**40**		(1)	(39)	44	44	**44**	4 Calves < 1 year
Heifers 1 to 2 years	**38**	(1)				39	**39**	1 Heifer 1-2 years
To Heifers > 2 years				(6)				
To Cows				(31)				
Heifers >2 years	**5**			(5)		6	**6**	1 Heifer > 2 years
Cows	**100**	(25)	(1)				**110**	10 Cows
From Heifers 1 to 2 years						31		
From Heifers > 2 years						5		
Total	**183**						**199**	

Table 2. Schedule of Raised Breeding Animals (Dairy) as of December 31, 'X2

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Beginning of Year			Transf.		Transf.	**End of Year**	Net Change from 12/31/X1
Catagory	**(12/31/X1)**	Sold	Died	Out	Born	In	**(12/31/X2)**	to 12/31/X2
Calves <1 year	**44**		(2)	42	48	48	**48**	4 Calves < 1 year
Heifers 1 to 2 years	**39**	(2)				42	**42**	3 Heifers 1-2 years
To Heifers > 2 years				(7)				
To Cows				(30)				
Heifers >2 years	**6**			(6)		7	**7**	1 Heifer > 2 years
Cows	**110**	(31)					**115**	5 Cows
From Heifers 1 to 2 years						30		
From Heifers > 2 years						6		
Total	**199**						**212**	

From both Table 1 and Table 2, there is a profile of the numbers, and reasons for changes in the numbers, of raised dairy breeding animals from December 31, 'X0 through December 31, 'X2 — or two, annual accounting periods.

Tables 1 and 2 will be the basis for further examples.

4. **Maintaining and Changing Base Values.** There are two approaches to maintaining base values: the **"individual animal approach",** which maintains a base value for each animal; and the **"group value approach",** which maintains base values for each age group of raised breeding animals but makes no attempt to keep track of individual animals.

There are two events that cause the base value of individual or groups of raised breeding livestock to change. The first event is the passage of time during which the animals move into a more valuable category because they are older and therefore more valuable. When the base value of an individual or group of raised breeding animals changes as a result of that animal or group of animals having moved into another category, that change in value must be recorded as an adjustment to cash basis Net Farm Income from Operations, either as additional income or as a loss. In the second event, there is a change in the general level of base values assigned to some or all of the various categories and that change to one or more of the general level of base values must be recorded as an adjustment after Net Farm Income from Operations, but before accrual adjusted Net Farm Income.

a. **Individual Animal Approach.** Under the individual animal approach, a base value is established for each animal at the time that animal enters an age group. Base values for an individual animal are changed only when the animal enters the next age group.

   Example: Using dairy animals, assume base values have been established as follows: calves – $240; one to two year old heifers – $625; heifers over two years old $950; and cows – $1,000. A calf is assigned a value of $240 when it is born; when it reaches one year of age, the value is raised to $625; when it reaches two years of age, the value is raised to $950; when it freshens, the value is raised to $1,000; and the mature animal maintains that $1,000 value until it is sold in the individual animal approach.

   Example: Again using the dairy animals, assume base values are increased to $250 (calves), $650 (1 year), $1,000 (2 years), and $1,050 (mature cow). The two year old animal which had not freshened was valued at $950 (i.e., the "old" base value); but after it calved, that animal would now be assigned the new base value for mature cows — $1,050. However, if the change in base values occurred **after** the animal calved, the base value assigned to that animal would be the $1,000 value which was the base value in effect at the time the animal freshened. When the general base values (i.e., the "old" base values) for any of the categories are changed (regardless of whether the change is an increase or a decrease), the "new" base values are to be used only for valuing animals that subsequently move into a category where the base values had been changed. In the individual animal approach, any animal in the category for which the base value had been changed would retain the old base value until it moves into a different category or, in the case of mature animals, is sold or dies. NOTE: This constancy of value applies only to the individual animal approach.

   The data of individual animals would be aggregated and summarized according to categories that are to be used on the balance sheet or in supplemental schedules. Frequently the categories selected for establishing base values are the same as those categories used for assigning the market value necessary to produce a market value balance sheet.

   The main disadvantage to the individual animal approach to base value is the enormous amount of record keeping required to maintain data on individual animals.

b. **Group Value Approach.** Under the group value approach, all raised breeding animals in the herd are assigned base values only at the time the balance sheet is prepared. No attempt is made to assign values to individual animals. The effect of any change in the general level of base values will be included as an adjustment to cash basis income.

***Example of Applying Base Values*:** To value all of the raised breeding livestock, assuming there has been no change in general level of base values from the beginning to the end of the accounting period, there needs to be only a single set of calculations using the existing set of base values. Consider the dairy herd summarized in Table 1 and the general level of base values to be used as follows:

	Base Values to be used at December 31, 'X0 and 'X1
Calves < 1 year	$ 240
Heifers 1 - 2 years	625
Heifers > 2 years	950
Cows	1,000

The total base value for the 183 head of raised breeding animals on hand at 12/31/X0 (as summarized in Table 1) would be shown as in Table 3.

Table 3. Balance Sheet, December 31, 'X0, Raised Breeding Livestock (group value approach)

No. of Head	Catagory	Existing Base Value Per Head	Existing Base Value Total	New Base Value[a] Per Head	New Base Value[a] Total
40	Calves < 1 year	$240	$9,600		
38	Heifers 1-2 years	625	23,750		
5	Heifers > 2 years	950	4,750		
100	Cows	1,000	100,000		
183	Total		$ 138,100		

[a] Complete only in years when base values change.

Now, consider how to present the valuation of the same dairy herd of raised breeding livestock, but **one year later** based on the inventory schedule shown in Table 1 for December 31, 'X1.

Table 4 shows the base value for the 199 raised breeding animals on hand as of 12/31/X1.

Table 4. Balance Sheet, December 31, 'X1, Raised Breeding Livestock (group value approach)

No. of Head	Catagory	Existing Base Value Per Head	Existing Base Value Total	New Base Value[a] Per Head	New Base Value[a] Total
44	Calves < 1 year	$240	$10,560		
39	Heifers 1-2 years	625	24,375		
6	Heifers > 2 years	950	5,700		
110	Cows	1,000	110,000		
199	Total		$150,635		

[a] Complete only in years when base values change.

Tables 3 and 4 simply show the way to calculate the value of raised breeding livestock using the base value method. The entire herd of raised breeding livestock (dairy cattle in the example) was valued at $138,100 (for 183 head) at the beginning of the year, December 31, 'X0 (Table 3) and $150,635 (for 199 head) at the end of the year, December 31, 'X1 (Table 4). It is important to note the $12,535 increase in value of the raised breeding

livestock is related to both (i) the increased numbers of animals and (ii) animals having matured from one category to a category having a higher base value. Note, however, that none of the change in total valuation occurred because of any change in the general base values assigned to categories of animals (because there were no changes to those general base values!).

***Example of Changing Base Values*:** Now consider the impact when there is a change in the general level of base values for one or more of the categories of raised breeding livestock.

After using the existing (or "old") base values for a period of time, possibly four or five years, assume the decision was made during 'X2 to change the general base values for each category of raised breeding animals in the dairy example as follows:

	"old" base values 'X1	"new" base values 'X2	Change
Calves <1 year	$ 240	$ 250	$ 10
Heifers 1-2 years	625	650	25
Heifers >2 years	950	1,000	50
Cows	1,000	1,050	50

In this example, for the dairy herd shown in Table 2, the raised breeding livestock as of December 31, 'X2 are to be valued. Now two sets of valuation must occur, one at the "existing" base values and the second at the "new" base values.

Table 5. Balance Sheet, December 31, 'X2, Raised Breeding Livestock (group value approach)

No. of Head	Catagory	Existing Base Value Per Head	Existing Base Value Total	New Base Value[a] Per Head	New Base Value[a] Total
48	Calves < 1 year	$240	$11,520	$250	$12,000
42	Heifers 1-2 years	625	26,250	650	27,300
7	Heifers > 2 years	950	6,650	1,000	7,000
115	Cows	1,000	115,000	1,050	120,750
212	Total		$159,420		$167,050

[a] Complete only in years when base values change.

The 212 head of raised dairy animals would have been valued at $159,420 using the existing (or "old") base values which were in place at December 31, 'X1. However, because of changes in base values during 'X2, the 212 head of raised dairy animals are valued at $167,050 as of December 31, 'X2. The $7,630 increase being related solely to changes in base values (Remember: The values were calculated using the same 212 head count).

INCOME STATEMENT TREATMENT

Many agricultural producers maintain accounting records on a cash basis, but, after the close of accounting periods, adjust those cash basis records to approximate a matching of revenue with the expenses incurred to create those revenues. If the **base value method** has been used for valuation of raised breeding livestock for balance sheet purposes, there are two potential impacts for which adjustment to the income statement might be necessary. Those impacts are:

1. Recognition of changes in the numbers and/or age of the raised breeding livestock, **but with no change** to the general base values from the beginning of the accounting period to the end of the accounting period.

2. Recognition of changes in the numbers and/or age of the raised breeding livestock, **and also with changes** to the general base values from the beginning of the accounting period to the end of the accounting period.

Before working through the application of base value, review briefly the elements of the Income Statement that will be affected.

From pages A-7, A-8, A-16 and A-17 of Appendix A, following is a summary of the individual line items that are affected:

Cash Receipts from Sale of Raised Breeding Livestock	$
*Less: Base Value of Raised Breeding Livestock Sold/Died	$( )
*Equal:Gain or (Loss) on Sale of Raised Breeding Livestock	$
*Gain or (Loss) Due to Change in Quantity of Raised Breeding Livestock	$
Net Farm Income from Operations (accrual adjusted)	$
*Gain or (Loss) Due to Change in General Level of Base Values	$
Net Farm Income (accrual adjusted)	$

*These four items are adjusting entries to be made to a cash basis income statement after the close of an accounting period to approximate a matching of revenue with expenses incurred to create those revenues. **Remember, these adjusting entries are only for the impact of raised breeding livestock.**

Note: The above income statement treatment is appropriate for normal/recurring sales of raised breeding livestock. If a material downsizing or complete liquidation of the herd occurs, the gain/loss on sale should be reported on the income statement after Net Farm Income from Operations and before accrual adjusted Net Farm Income.

1. **Gain or Loss on Sale.** The base value of each raised animal in the breeding herd has been recognized as an adjustment to cash basis income from the time that animal was born with incremental increases as the animal matured through different age groupings. Therefore, to count as income the entire amount received when the animal is sold, would effectively be double counting. The income to be recognized at the time of sale should be only the difference between the sale price received and the base value of the animal at the time of the sale. If the **individual animal approach** is used, the base value of animals sold/died is summed from the individual animal records.

If the **group value approach** is used, the base value of animals sold/died can be calculated using a procedure like that shown in Table 6. For the inventory data used, see Tables 1 and Table 3. (General base values at the beginning of the year are used for calculation of the base value of animals sold/died.) For the example in Table 6, assume the cash price received for raised breeding livestock sold during 'X1 was $12,500.

Table 6. Base Value of Raised Breeding Livestock Sold/Died for the Year Ending December 31, 'X1 (group value approach)

Category at Beginning of Year	Number of Animals: Sold	Died	Total	Beginning of Year Base Value	Base Value of Animals Sold/Died
Calves < 1 year		1	1	$240	$240
Heifers 1 to 2 years	1		1	625	625
Heifers > 2 years				950	-
Cows	25	1	26	1,000	26,000
TOTAL					$26,865

The adjustment to a cash basis income statement for gain or loss on the sale of raised replacement breeding livestock is determined by subtracting the base value of raised breeding livestock, which have died or been sold, from the cash received from the sale of raised breeding livestock. For the example from Table 6, the adjustment to cash basis income for gain or loss would be:

Cash Receipts from Sale of Raised Breeding Livestock (price actually received)	$ 12,500
Less: Base Value of Raised Breeding Livestock sold/died	(26,865)
Equal: Gain (or Loss) on Sale of Raised Breeding Livestock	$(14,365)

Using this method, the gain or loss from the sale of raised breeding livestock is included as an adjustment to gross revenue calculated using cash basis accounting.

2. **Revenue from Raised Replacements — Base Values Unchanged.** With the base value method, the gross revenue to be recognized from raising replacements can be easily and explicitly calculated if the general base values are not changed from the beginning to the end of the accounting period. This adjustment to cash basis income to recognize raised replacement revenue is calculated by determining, for a specified accounting period, the number of animals that entered the mature breeding inventory or that moved to an older, greater value age grouping, and then valuing that change.

   If the **individual animal approach** is used, determining the raised replacement revenue involves adding up the increases in base value that have occurred because individual animals moved from one age category to another age category having a greater value.

   With the **group value approach,** having age groups that are equal portions of a year makes easier the determination of adjustments to cash basis income to reflect the value of raised replacements. The number of animals transferred to a next higher valued category is the number on hand at the beginning of the year minus the number that were sold/died.

Table 7. Adjustment to Revenue for Raised Replacements for the Year Ending December 31, 'X1, (group value approach)

Catagory	(1) **Beginning of Year 12/31/X0**	(2) Sold	(3) Died	(4) Transf. Out	(5) Born	(6) Transf. In	(7) **End of Year 12/31/X1**	(8) New Animals in This Category	(9) Increase/decrease in Base Value from Previous Category	(10) Raised Replacement Revenue
Calves < 1 year	**40**		(1)	(39)	44	44	**44**	44	$240	$10,560
Heifers 1 to 2 years	**38**	(1)				39	**39**	39	385	15,015
To Heifers > 2 years				(6)						
To Cows				(31)						
Heifers > 2 years	**5**			(5)		6	**6**	6	325	1,950
Cows	**100**	(25)	(1)				**110**			
From Heifers 1 to 2 years						31		31	375	11,625
From Heifers > 2 years						5		5	50	250
Total	**183**						**199**			$39,400

The **Change in Base Value from Previous Category** (column 9) is the difference between (i) the per head base value of the age/service category in which the animals were valued at the beginning of the accounting period, and (ii) the per head base value of the age/service category in which the animals are valued at the end of the accounting period. For example, at 12/31/X1 there are 39 heifers valued at $625 per head. The category from which those heifers were transferred (calves < 1 year) had a per head value of $240. The change in base value for those 39 heifers is $385 ($625 - $240 = $385). Remember, in this example the general level of base values of the individual categories are unchanged from the beginning of the accounting period to the end of the accounting period.

In the foregoing example (Table 7), there would be an adjustment of + $39,400 to cash basis revenues to reflect the increased value of raised breeding livestock which are being retained for possible future use as breeding animals, but for which the related cash costs have been expensed in the cash basis income statement.

The convention among agricultural producers is to "adjust" the revenue numbers for changes related to raised breeding livestock (rather than adjust expenses as GAAP would dictate for capitalized costs). Therefore, in the Income Statement for the example in Table 7, the $39,400 would be added as a "Gain or (Loss) Due to Changes in Quantity of Raised Breeding Stock."

From the foregoing, the adjustments to a cash basis income statement related to raised breeding livestock for the year ending 12/31/X1 (no change having occurred in the general level of base values) can be shown:

Cash Receipts from Sale of Raised Breeding Livestock	$ 12,500	
*Less: Base Value of Raised Breeding Livestock Sold/Died	$ (26,865)	
*Equal: Gain (or Loss) on Sale of Culled Breeding Livestock	$ (14,365)	
*Gain (or Loss) Due to Change in Quantity of Raised Breeding Livestock	$ 39,400	$ 25,035
Net Farm Income from Operations (accrual adjusted)		$ X X X X
*Gain (or Loss) Due to Change in General Level of Base Values	$ - 0 -	
Net Farm Income (accrual adjusted)		$ X X X X

* These four items are adjusting entries to be made to a cash basis income statement after the close of an accounting period to approximate a matching of revenue with the expenses incurred to create those revenues. **Remember, these adjusting entries are only related to the impact of raised breeding livestock.**

SHORTCUT ALTERNATIVE — BASE VALUE UNCHANGED

When there are no changes to the general base values used for each category of raised breeding animals, you can get to the same change in total valuation of raised breeding animals **by only valuing the change in numbers**.

Return to Table 1 and see columns (1), (7) and (8). From the beginning of the year (12/31/X0) to the end of the year (12/31/X1) the number of animals in each category changed as shown in Table 8. Also, remember in the year 'X1, there was no change in the general base values assigned to each category.

Table 8. Alternative Calculation of Revenue from Raised Breeding Stock For the Year Ending December 31, 'X1 (quantity change method) (group value approach)

	(1)	(2)	(3)	(4)	(3) times (4)
	Number of Animals				
Catagory	Beginning of Year	End of Year	Quantity Change	Base Value	Accrual Adjustment
Calves < 1 year	40	44	4	$240	$960
Heifers 1 to 2 years	38	39	1	625	625
Heifers > 2 years	5	6	1	950	950
Cows	100	110	10	1,000	10,000
Total	183	199			$12,535

After multiplying the quantity change by the base value and totaling the results, $12,535 is obtained, which is the same amount as calculated by the longer method summarized as follows:

Gain (or Loss) Due to Changes in Quantity of Raised Breeding Livestock	$39,400
Less: Base Value of Raised Breeding Livestock Sold/Died	$(26,865)
Equal: Net Gain (or Loss) Due to Change in Quantity of Raised Breeding Livestock	$12,535

Note: The $12,535 when added to the $12,500 actual cash receipts from sale of raised breeding livestock (taken from the example under table 7) equals $25,035, or the same amount shown as Gain (or Loss) Due to Change in Quantity of Raised Breeding Livestock.

This shortcut procedure has all the advantages and disadvantages of the longer method of base value determination except that it is much simpler than the longer method. No records must be maintained for the number of animals that were sold/died during the year — only year end totals are required for the various categories of raised breeding livestock.

3. **Raised Replacement Revenue — Base Value Changed.** If the **group value approach** is used for record keeping and the base value is changed as of the balance sheet date, the gain or loss connected with that change would be included as an adjustment to a cash basis income statement. In an earlier example (Table 5), the impact on the balance sheet of a change in base values was shown.

For any year in which there has been a change in the general base values of raised breeding livestock, there are two separate components to be measured in order to make adjustments to a cash basis income statement: (i) the change due solely to changes in numbers of animals in each category and (ii) the change due solely to changes in the general base value assigned to one or more categories of raised breeding animals. The reason for separating the changes will be discussed after discussing how to measure the changes.

On December 31, 'X2 the 212 head of raised breeding animals have a base value of $167,050. However, that $167,050 is greater than the $150,635 assigned at 12/31/X1 for two reasons:

a. **Change in the numbers** of animals (from 12/31/X1 to 12/31/X2) in the different categories, but "old" base values are used to calculate total values.

	12/31/X2	212 animals valued at	$159,420
Less:	12/31/X1	199 animals valued at	$(150,635)
			$8,785

The $8,785 represents the increase in total base value attributed only to increased numbers or to animals aging into higher value categories. This $8,785 would be an adjustment to cash basis income as "Gain or (Loss) Due to Change in Quantity of Raised Breeding Stock".

b. **Change in general level of base values** of one or more of the age categories using the 12/31/X2 category numbers and both the "old" and "new" base values (see Table 5).

	12/31/X2	212 animals at "new" base value	$167,050
Less:	12/31/X2	212 animals at "old" base value	$(159,420)
			$ 7,630

The $7,630 represents the increase in total base value attributed only to the change in the general base values assigned to each category. This $7,630 would be an adjustment to the cash basis income statement as a "Gain or Loss Due to Change in Base Values of Raised Breeding Livestock" and is usually associated with the gain/loss on sale of Capital Farm Assets.

SHORTCUT ALTERNATIVE —BASE VALUE CHANGED

Once again the same conclusion can be reached by calculating the impact on value of only the changes, first the change in numbers, then the changes in the general level of base values. Those calculations are shown in Table 9.

Table 9. Adjustments to Cash Basis Income Statement for the Year Ending December 31, 'X2 (quantity/value method) (group value approach)

	(1)	(2)	(1) times (2)	(4)	(5)	(4) times (5)
	Adjustment Resulting from Change in Quantity of Animals			Adjustment Resulting from Change in General Level of Base Values		
Catagory	Quantity Change During Year	"Old" Base Value	Adjustment to Revenue Due to Change in Quantity	Quantity End of Year	Change in Base Value	Adjustment to Revenue Due to Base Value Change
Calves < 1 year	4	$240	$960	48	$10	$480
Heifers 1 to 2 years	3	625	1,875	42	25	1,050
Heifers > 2 years	1	950	950	7	50	350
Cows	5	1,000	5,000	115	50	5,750
Total			$8,785			$7,630

Again, the shortcut alternative of valuing only the change has the same advantages and disadvantages of the longer method of base value determination, except that it is much simpler and requires much less record keeping.

From the foregoing, the adjustments to a cash basis income statement related to raised breeding livestock for the year ending 12/31/X2 (in which there are changes to both the numbers of animals and the general base values) could be shown as follows:

Cash Receipts from Sale of Raised Breeding Livestock	(1)	$ 18,400
(2)(3) Less: Base Value of Raised Breeding Livestock Sold/Died	(3)	$ ( )
(2)(3) Equal: Gain (or Loss) on Sale of Raised Breeding Livestock	(3)	$
(2) Gain (or Loss) Due to Change in Quantity of Raised Breeding Livestock		$ 8,785
Net Farm Income from Operations (accrual adjusted)		$ X X X X
(2) Gain (or Loss) Due to Change in General Level of Base Values		$ 7,630
Net Farm Income (accrual adjusted)		$ X X X X

(1) For illustration only, assume that Cash Receipts from Sale of Raised Breeding Livestock are $18,400.

(2) These four items are adjusting entries to be made to a cash basis income statement after the close of an accounting period to approximate a matching of revenue with the expenses incurred to create those revenues. **Remember, these adjusting entries are only related to the impact of raised breeding livestock.**

(3) **These two items would not be completed when using the shortcut alternative.**

Adjusting net income for changes in the general base value of raised breeding livestock insures that the current base value of animals has at all times been recorded as an adjustment to cash basis net farm income. In the foregoing example, the base value of all cows was changed from $1,000 to $1,050 during 'X2, and that base value has effectively been recognized as an adjustment to cash basis net farm income. All raised breeding livestock sold, regardless of the time when they are sold, have had their current base value counted through the adjustment to cash basis income for raised replacement revenue.

Since the gain or loss from a change in the general base values should occur, at most, every few years, the adjustments for changes in general base values would not be included in gross revenue, but would be included with the gain or loss on sale of Capital Farm Assets in calculating net farm income.

APPENDIX G: ACCOUNTING FOR CAPITAL LEASES

According to GAAP, a lessee (i.e., the user of the leased asset) should show the lease as a capital lease if the lease is noncancelable and meets **any one** of the following four ownership interest tests:

1. The terms of the lease transfer ownership of the property to the lessee at the end of the lease term.

   At the end of the lease term, ownership of the leased property is transferred to the lessee.

2. The lease contains a bargain purchase option.

   A bargain purchase option means that the leased asset can be purchased by the lessee at the end of the lease term for an amount significantly less than the fair market value of the asset at that time. This bargain purchase opportunity must be evident at the beginning of the lease term for the lease to be classified as a capital lease. Considerable subjective judgment is required here.

3. The term of the lease is at least 75% percent of the estimated economic life of the leased property. convenient

   For example, if the estimated economic life of a tractor is twelve years, then the lease term must be at least nine years (i.e., 75% of the 12 year estimated economic life) for the lease to be considered a capital lease. Again, "estimated economic life" is fairly subjective. A reasonable estimate should be used—economic life estimates under current tax rules may not necessarily be good estimates.

4. The present value of the minimum lease payments equals or exceeds 90% of the fair market value of the leased property.

   *The present value of the minimum lease payments is calculated by discounting the lease payments using an assumed interest rate. This interest rate is (a) the incremental borrowing rate of the lessee for a debt of similar term, or (b) the implicit interest rate used by the lessor, if that rate is known by the lessee and is **lower** than the lessee's incremental borrowing rate.*

Note that criteria number 3 and number 4 are not applicable when the beginning of the lease term falls within the last 25% of the total estimated economic life of the leased property.

If the lease is determined to be a capital lease, then, for financial statement purposes, the lease payments must be capitalized and amortized over the term of the lease. Or, if the lease transfers ownership at the end of the lease term or contains a bargain purchase option, the lease payments must be capitalized and amortized over the estimated useful life of the asset being leased. Amortization refers to the process of allocating the value of the capital lease over the expected life of that lease, in a manner similar to the manner in which depreciation allocates the cost of a depreciable capital asset over its useful life.

ACCOUNTING FOR CAPITAL LEASES — USING GAAP

The FFSC recommends that reporting of capital leases follow GAAP. Under GAAP, the lease payments are capitalized and amortized over an appropriate term, rather than being expensed during each lease period. Essentially, this procedure results in recording the lease in a manner similar to recording the purchase of the asset and obtaining a loan to finance that purchase.

The basic procedure involves determining the capitalized value of the lease, amortizing that value over the life of the lease to determine asset values, and amortizing that value over the life of the lease to determine liability values. **It must be remembered that it is the lease investment which is being put on the balance sheet, not the asset being leased.**

1. **The Interest Rate**. The first step is to establish the initial value of the lease. This value is the present value of the payments to be made over the life of the lease. Present value is determined by discounting at: (1) the incremental borrowing rate of the agricultural producer, or (2) the implicit interest rate used by the lessor, if that rate is known by the lessee, and is lower than the incremental borrowing rate.

   The implicit rate used by the lessor is the rate that will discount the required stream of lease payments to a present value which, when added to the present value of the residual value of the leased asset at the end of the lease period, equals the fair market value (cash price) of the asset being leased. The implicit rate may or may not be equal to the contract rate stated in the lease. Since the implicit rate on the lease is frequently not known by the agricultural producer, the incremental borrowing rate will normally be used. The incremental borrowing rate is the rate the agricultural producer would have to pay to borrow a similar amount for a similar term, at the time the lease was initiated.

2. **Initial Lease Value (both asset and liability)**. The initial lease value is the present value of all required payments to be made on the lease, including down payments and advance payments (but not including optional buyout payments). The present value can be calculated using present value tables or equations. Since most leases have an advance payment due at initiation of the lease, the correct present value equation or table to be used is a "present value of an annuity due". The equations built into many calculators are for regular present value calculations where the first payment is due one period (year, quarter, or month) after initiation of the contract (lease). To use such regular present value procedures, calculate the present value of all nonadvance payments using the equation or table, then add the advance payment(s) to the result.

   Example. A lease with five annual payments of $11,990.80 having the first payment in advance, and an interest rate of 10 percent, has a present value as follows:

   a. Using the present value of an annuity due, the calculations are:

$$\$\ 11{,}990.80 \times \left(1 + \frac{1-(1+.10)^{-4}}{.10}\right)$$

$11,990.80 x 4.16987 = $50,000.08 (present value of the lease)

b. Alternatively, using simply the ordinary present value, the calculations are:

$$\$\ 11{,}990.80 \times \left(\frac{1-(1+.10)^{-4}}{.10} \right)$$

$11,990.80 x 3.16987 = $38,009.28 (present value of the next four payments)

$38,009.28 + 11,990.80 = $50,000.08 (present value of the lease)

In each case, the coefficients (4.16987 and 3.16987) could be taken from present value tables and the equations skipped. The ordinary present value procedure has an advantage for cases where there is more than one regular payment, or where a down payment (or one or more monthly lease payments) is required at initiation of the lease, which is often the case with monthly payment leases.

In this Appendix, discount coefficients are presented with five decimal places because that is usually the minimum number of decimal places found for such coefficients in mathematical tables. However, for convenience and in recognition of materiality, all tables have been rounded to the nearest dollar.

The present value of all required lease payments is generally the initial value (or capitalized value) used for determining both the asset and the liability entries to be recorded on the balance sheet of the leasee. However, if the discounted present value of the required lease payments is greater than the fair market value of the asset being leased at the inception of the lease, the fair market value should be used for determining both the asset and liability entries. The examples used in this Appendix assume that the discounted present value of the required lease payments to be equal to the fair market value of the asset being leased. Also, note that the residual values are not being addressed because they are ordinarily not relevant with respect to preparing the balance sheet of the leasee.

3. **Amortizing the Asset Value.** The initial asset value of the lease is amortized over either (a) the life of the lease, or (b) the estimated useful life of the asset being leased. If the lease contains either a bargain purchase option or transfers ownership at the end of the lease term, the value of the lease should be amortized over the estimated useful life of the asset being leased. Otherwise, the amortization period should be the term of the lease. The examples used in this Appendix assume the lease does not contain either a bargain purchase option or an ownership transfer clause.

   The asset value of the lease at any time during the term of the lease is calculated using any amortization method that is consistent with depreciation methods used for similar, owned assets. While many methods could be used, it is recommended that straight-line amortization be used. Straight-line amortization is easier to understand and calculate than other methods; it often conforms roughly to the use of the asset; and the method selected does not influence tax depreciation for cash basis tax preparers. A half-year or monthly convention can be used if deemed appropriate.

For the earlier example, under the assumptions that the item was leased on April 1, 'X1 and that the monthly convention is appropriate, the amortization calculations would be:

'X1	($50,000 ÷ 5) × (9 ÷ 12)	=	$ 7,500
'X2 – 'X5	$50,000 ÷ 5	=	10,000/year
'X6	($50,000 ÷ 5) × (3 ÷ 12)	=	2,500

The lease values to use on the asset portion of the balance sheet are illustrated in Table 1. The asset value determined in this manner is the net book value of the lease. Remember, it is the value of the lease that is being put on the balance sheet, not the asset being leased. The asset being leased does not appear on the balance sheet unless and until actual ownership is acquired.

Table 1. Balance Sheet Values

Balance Sheet Data	Lease Value
12/31/X1	$ 42,500
12/31/X2	32,500
12/31/X3	22,500
12/31/X4	12,500
12/31/X5	2,500

4. **Amortizing the Liability Values.** The liability value of the lease at any time during the term of the lease is determined by amortizing the initial value of the lease over the term of the lease. It is suggested that the "effective interest method" be used. In the effective interest method, the interest rate used in the amortization calculations is the rate necessary for the lease payments (when allocated to a principal component and an interest component) to liquidate the lease obligation over the term of the lease. This rate will be the same rate used to compute the initial lease value in Section 2 above, as long as the initial value was less than or equal to the fair market value of the asset being leased.

   However, if the initial lease value was greater than the fair market value of the asset being leased both the lease asset and lease obligation will be initially recorded on the balance sheet at the lower, fair market value amount. Periodic amortization of the initial lease obligation recorded in this manner will require an effective interest rate **higher** than the rate used for discounting in Section 2 above. Since the example included in this Appendix assumes that the discounted present value of the required lease payments is equal to the fair market value of the asset being leased, the implicit rate (used for discounting required payments in Section 2) and the effective rate (used for amortizing the lease obligation) are the same.

For our example, the result of amortizing the $50,000 liability at 10 percent is shown in Table 2.

Table 2. Amortization of $50,000 Lease, 10% Interest, 5 Year Term, Annual Payments, First Payment Due at Inception of Lease (April 1) (amounts rounded to nearest dollar)

Year	Beginning Balance	Total Payments	Interest Portion	Principal Portion	Ending Balance
‘X1	$ 50,000	$ 11,991	$ 0	$ 11,991	$ 38,009
‘X2	38,009	11,991	3,801	8,190	29,819
‘X3	29,819	11,991	2,982	9,009	20,810
‘X4	20,810	11,991	2,081	9,910	10,901
‘X5	10,901	11,991	1,090	10,901	0

The ending balance for each year indicates the liability associated with the lease. However, since the liability has to be separated into the amount due within the next 12 months (i.e., current portion) and the amount due beyond 12 months (i.e., non-current portion), the values for the balance sheet are taken from the values listed for the following year. So, at the end of year 19X1, the remaining liability associated with the lease is $38,009. This $38,009 is entered on the balance sheet as a non-current liability of $29,819 (from ‘X2 ending values) and a current liability of $8,190 (from principal portion to be paid in ‘X2).

Accrued interest on the lease must also be listed as a current liability. The accrued interest is interest on the entire liability at the rate used in the amortization of the lease payments. In the example, the accrual adjustment for accrued interest at 12/31/X1 is:

$$(\$38{,}009.28) \times (0.10) \times (9 \div 12) = \$2{,}850.70$$

Table 3. Capital Lease Liability Values on the Accrual Adjusted Balance Sheet on 12/31 of Each Year (amounts rounded to nearest dollar)

	Lease Payable			Accrued
Year	Current Liability	Non-Current Liability	Total Liability	Interest*
‘X1	$ 8,190	$ 29,819	$ 38,009	$2,851
‘X2	9,009	20,810	29,819	2,235
‘X3	9,910	10,901	20,810	1,561
‘X4	10,901	0	10,901	818
‘X5	0	0	0	0

* Since lease payments are due on April 1, this amount is calculated by multiplying the total liability outstanding as of December 31 of the same year times the interest rate of 10% times 9/12 (because interest was paid current with the payment on April 1).

5. **Income Statement Entries**. The income statement entries are taken from the balance sheet values and calculations. The amortization calculated to determine the asset value of the lease is included in total depreciation/amortization expense on the income statement. The interest portion of the lease payment from the amortization table (Table 2) is included in total interest expense. The accrued interest is included in the change in accrued interest calculated from

the balance sheet entries. The cash lease payment is excluded from expenses on the income statement.

For the example, the accrual adjusted income statement for 'X1 would include the following amounts:

Depreciation/amortization expense	$7,500
Interest expense (cash portion)	0
Interest expense (accrual adjustment)	2,851

Once the amortization calculations are made, they should be kept with the balance sheet. Remember, these amortization calculations will be needed each time a balance sheet is prepared so long as the lease is outstanding.

Since most agricultural producers calculate taxable income on a cash basis, this procedure results in a different expense being attributed to the lease for the accrual adjusted income statement than is used for income tax purposes (Table 4).

Table 4. Comparison of Accrual Adjusted Income Statement and Tax Returns (amounts rounded to nearest dollar)

	Accrual Adjusted Income Statement Values				Tax Return	
Year	Depreciation Amortization	Interest (Cash)	Interest (Accrual Adjustment)	Total Expense	Lease Expense	Difference
'X1	$ 7,500	$ 0	$ 2,851	$ 10,351	$ 11,991	$ (1,640)
'X2	10,000	3,801	(615)*	13,186	11,991	1,195
'X3	10,000	2,982	(675)	12,307	11,991	316
'X4	10,000	2,081	(743)	11,338	11,991	(653)
'X5	10,000	1,090	(818)	10,272	11,991	(1,719)
'X6	2,500	--	--	2,500	--	2,500
Total	$ 50,000	$ 9,954	$ 0	$ 59,954	$ 59,955	$ (1)

* Beginning accrued interest of $2,851 minus ending accrued interest of $2,235 (Table 3); the total interest presented on the accrual adjusted income statement for 'X1 will be $3,186 = ($3,801 - $615). Alternatively, the accrual adjusted interest expense could be calculated: ($38,009 x .10 x 3/12) + (29,819 x .10 x 9/12) = $3,186.

Note, however, that the total amount expensed is the same for the accrual adjusted income statement and the tax return (the $1 difference in the example is due to rounding). There will be a corresponding difference in the owner equity position on a year-to-year basis when comparing treatment of a lease as a capital lease versus as an operating lease (as is usually the case for tax purposes).

MONTHLY PAYMENTS

Those types of agricultural operations where income is received periodically throughout the year (dairy, poultry, and swine) usually repay debt and make lease payments on a monthly (or quarterly) basis. Calculation of the value of the lease is the same as for annual leases. If the equations (calculators) are used, for monthly payments the number of payments is the number of months and the monthly interest rate is the annual rate divided by 12. For quarterly payments, the number of payments is 4 and the quarterly interest rate is the annual rate divided by 4.

In the example, if payments were monthly, the monthly lease payment would be $1,053.58. If ordinary present value procedures were used, the calculations would be:

$$\$\ 1{,}053.58 \times \left(\frac{1-(1+[.10 \div 12])^{-59}}{.10 \div 12} \right)$$

$1,053.58 x 46.4576 = $48,946.80 (present value of the next 59 payments)

$48,946.80 + $1,053.58 = $50,000.38 (present value of the lease)

The asset values and amortization calculations would be the same for monthly payments as for annual payments.

However, the value of the outstanding lease liability may be considerably different with monthly payments. This difference is due to the magnitude of the payments made in the first year. As illustrated in Table 5, using annual payment calculations for a monthly lease could result in considerable error.

Table 5. End of Year Liability Value for $50,000 Lease, 10% Interest (amounts rounded to nearest dollar)

	Jan. 1	Monthly Payments with First Payment on		
Year	Annual Payments	Jan. 1	July 1	Dec. 1
'X1	$ 38,009	$ 41,450	$ 45,664	$ 48,946
'X2	29,819	32,651	37,206	40,833
'X3	20,810	22,832	27,864	31,870
'X4	10,901	11,984	17,543	21,968
'X5	0	0	6,141	11,030

The interest payment on the lease for any year is most easily determined by subtracting the change in the value of the total liability from the total of the lease payments. In the example, this value for 'X1 would be:

Interest paid = ($1,053.58 x 9) - ($50,000.80 - $43,628.22)
= $9,482.22 - $6,372.58
= $3,109.64

Preparing an amortization table for a monthly lease, similar to that shown in Table 2 for an annual lease, is possible with a financial calculator (such as an HP-12C), but is most easily accomplished with a computer. Part of such a table is shown in Table 6. If such a table is constructed, the end of year values can be taken from the monthly value that corresponds to final month of the year. For example, if the lease were initiated on April 1, the 12/31/X1 value would be $43,628.22 (the 9th payment would be made in December). (See table 6)

Table 6. Amortization of a Five Year, $50,000 Lease, 10% Interest, Monthly Payments, First Payment Due at Inception of Lease (amounts rounded to nearest dollar)

Month	Beginning Balance	Total Payments	Interest Portion	Principal Portion	Ending Balance
	$ 50,000	$ 1,054	$ 0	$ 1,054	$ 48,946
2	48,946	1,054	408	646	48,301
3	48,301	1,054	403	651	47,650
4	47,650	1,054	397	657	46,993
5	46,993	1,054	392	662	46,331
6	46,331	1,054	386	667	45,664
7	45,664	1,054	381	673	44,991
8	44,991	1,054	375	679	44,312
9	44,312	1,054	369	684	43,628
10	43,628	1,054	364	690	42,938
11	42,938	1,054	358	696	42,242
12	42,242	1,054	352	702	41,540
13	41,540	1,054	346	707	40,833
…	…	…	…	…	…
…	…	…	…	…	…
…	…	…	…	…	…
58	3,108	1,054	26	1,028	2,081
59	2,081	1,054	17	1,036	1,044
60	1,044	1,053	9	1,044	--

Accrued interest on monthly leases will normally be a rather insignificant amount and, thus, will often be immaterial to the balance sheet (See Appendix H). Accrued interest may be ignored, if the amount is immaterial, without causing significant misstatement of the balance sheet and income statement.

However, if accrued interest is determined to be material, it can be calculated fairly easily. In the example shown in Table 6, payments are made the first of each month. Therefore, the accrued interest owed at the end of month 10 would be calculated as follows:

$$\$43{,}628.22 \times .10 \times (30 \div 360) = \$363.57$$

Note: This calculation uses the convention of all months having 30 days and a year of 360 days. Such a convention is quite common for financial transactions.

ALTERNATIVE 1

In light of the paperwork burden implied by the above described procedure, particularly for monthly payment leases, the FFSC recognizes alternative procedures that produce materially similar results in most cases. One approach is to bypass the amortization table and calculate the value of the lease liability at any point in time as the present value of the remaining payments. This procedure provides equivalent answers and is simpler for the completion of any year's balance sheet. Only the amount and number of payments remaining and the interest rate are needed. Only one year's calculations need be made at a time. The convenience of a single calculation is particularly important for long term leases that have been in effect for a few years and are being placed on the balance sheet for the first time.

In the example with monthly payments, at the end of ‘X1 there are 51 payments remaining. The present value of these payments is:

$$\$\ 1{,}053.58 \times \left(\frac{1-(1+[.10 \div 12])^{-51}}{.10 \div 12} \right) = \$1{,}053.58 \text{ x } 41.4093 = \$43{,}628.01$$

At the end of ‘X2 there will be 39 payments remaining. The present value of these payments is:

$$\$\ 1{,}053.58 \times \left(\frac{1-(1+[.10 \div 12])^{-39}}{.10 \div 12} \right) = \$1{,}053.58 \text{ x } 33.1799 = \$34{,}957.68$$

The current portion of the lease liability is:

$$\$43{,}628.01 - \$34{,}957.68 = \$8{,}670.33$$

The interest paid is the total payments made minus the change in the value of the lease during the year (which, after the first year, equals the beginning of year principal due within the next 12 months). For our case, the change in the value of the lease is $6,372.58 for ‘X1, and $8,670.33 for ‘X2. Since total payments are $9,482.22 in ‘X1, and $12,642.96 in ‘X2, the interest paid is $3,109.64 ($9,482.22 - $6,372.58) for ‘X1 and $3,972.63 ($12,642.96 - $8,670.33) for ‘X2.

This procedure puts considerable focus on present value. Many calculators and computers have the present value functions built in to make calculations reasonably easy. Tables of present values are available in many finance or accounting textbooks and other sources. However, if use of these procedures is inconvenient, graphs such as those shown in Figures 1 and 2 can be used. Use of these graphs will give approximate results. With care in their use, the error should be small.

For the monthly payment example, at the end of ‘X2 there are 39 payments left. Using the 10 percent interest line on the graph in Figure 1, we get a present value factor of about 33. Multiplying the payment by the present value factor gives a present value of $34,782 ($1,054 x 33). This amount is reasonably close to the actual value of $34,958. (In this case, we have rounded the payment to $1,054 because greater precision is neither practical nor reasonable.) At the end of ‘X1 there were 51 payments remaining. Their present value from the graph would be $43,214 ($1,054 x 41).

This alternative procedure only changes the method of obtaining the liability values. The asset and amortization values are determined in the same manner as illustrated in Table 1 and its accompanying discussion.

Advantage of Alternative 1

Easier to employ, particularly when the lease is being entered on a balance sheet for the first time in a year after the first year, or the preparer does not have the original calculations.

Disadvantage of Alternative 1

Entries may include rounding errors if present values are taken from graphs like Figures 1 and 2.

Figure 1. Present Value of $1 with Monthly Payments

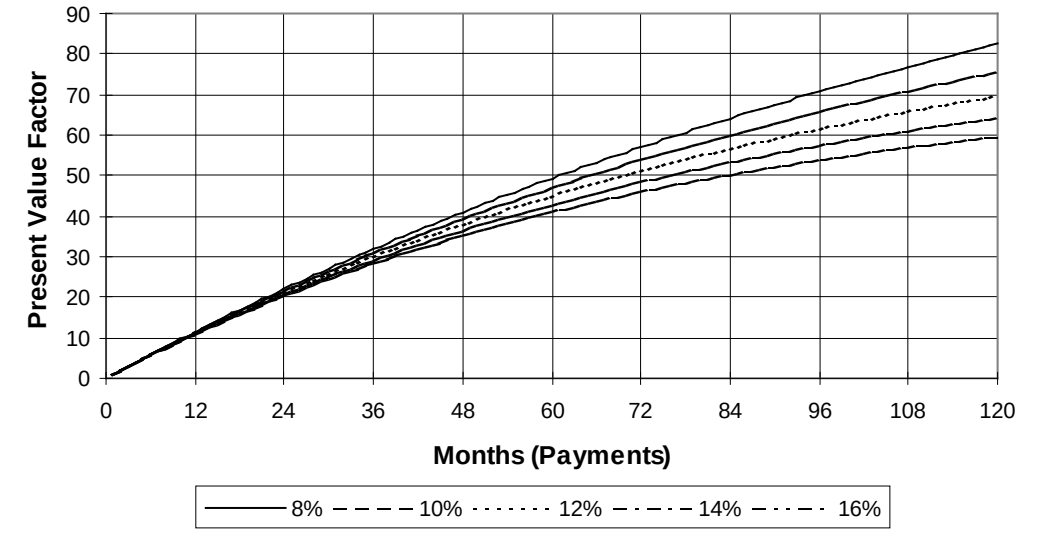
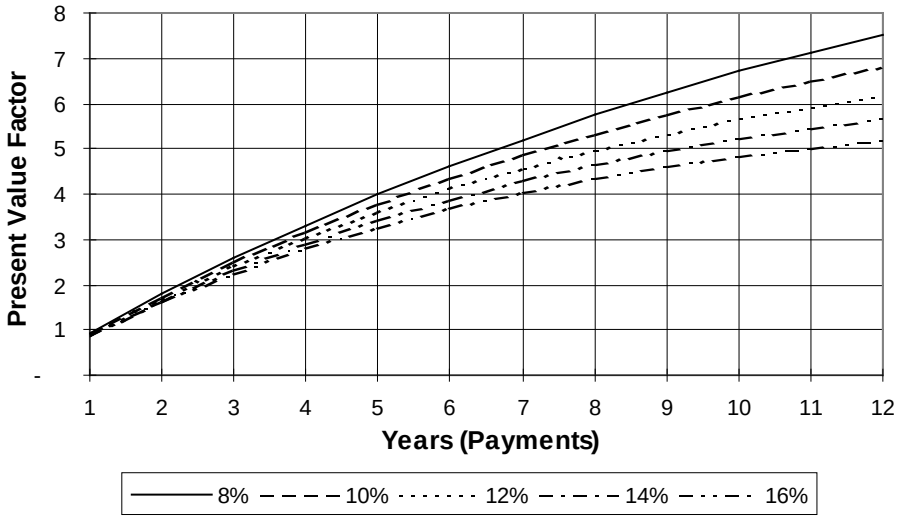


Figure 2. Present Value of $1 with Annual Payments



ALTERNATIVE 2

Alternative 2 (asset = liability method) uses the same procedures for calculating the liability and interest paid as Alternative 1. The difference is that the asset value is determined without calculating the amortization schedule. Instead, the asset value is set to be equal to the total liability. For the monthly payment example, using the graphs, the asset value at the end of 'X1 would be $43,214, and at the end of 'X2 the value would be $34,782.

The amount of amortization of the lease asset is the difference between the end of year values. Thus, 'X1 amortization would be $6,786 ($50,000 - $43,214) and 'X2 amortization would be $8,432 ($43,214 - $34,782). Using this procedure makes the amortization equal to the principal portion of the lease payments (i.e., the principal due within the next 12 months on the beginning of year balance sheet, after the first year).

This alternative procedure for determining the asset values is extremely easy to employ after the liability values have been calculated. It does, however, change the pattern of amortization over the life of the lease asset. As illustrated in Tables 7 and 8, this procedure puts more of the amortization later in the life of the lease asset, particularly for the longer term leases. However, since a wide variety of amortization methods and corresponding amortization patterns are allowed, this pattern may be acceptable for many situations.

Table 7. Asset Values with Alternative Amortization Patterns[a] Five Year Lease, 10% Interest, April 1 Inception

		Asset Equals Liability Method	
Year	Straight-Line Depreciation	Annual Payments	Monthly Payments
'X1	$ 7,500	$ 11,991	$ 6,372
'X2	10,000	8,190	8,670
'X3	10,000	9,009	9,579
'X4	10,000	9,910	10,581
'X5	10,000	10,900	11,690
'X6	2,500	-	3,108

[a]Using present value equations for determining amortization values

Table 8. Asset Values with Alternative Amortization Patterns[a] 12 Year Lease, 10% Interest, April 1 Inception

		Asset Equals Liability Method	
Year	Straight-Line Depreciation	Annual Payments	Monthly Payments
'X1	$ 3,125	$ 6,671	$ 2,083
'X2	4,167	2,338	2,428
'X3	4,167	2,572	2,684
'X4	4,167	2,829	2,964
'X5	4,167	3,112	3,275
'X6	4,167	3,423	3,617
'X7	4,167	3,766	3,996
'X8	4,167	4,142	4,315
'X9	4,167	4,556	4,877
'Z0	4,167	5,012	5,388
'Z1	4,167	5,513	5,952
'Z2	4,167	6,065	6,575
'Z3	1,041	-	1,168

[a]Using present value equations for determining amortization values

Advantages of Alternative 2

1. The lease has no effect on owner equity except the accrued interest effect. The lease asset and lease liability are equal. The adding of leases to the business does not increase or decrease equity. Use of the basic recommended procedure, where the initial asset value is amortized on a straight-line basis and the initial liability is amortized using the effective interest method, will normally not result in a change in owner equity.

2. It is far simpler in that no separate calculations need to be made to determine the asset value once the value of the liability has been calculated.

Disadvantage of Alternative 2

The amortization pattern may differ from that which would be used with traditional depreciation methods for capital assets.

APPENDIX H: MATERIALITY

"Materiality" has been discussed and illustrated by the Financial Accounting Standards Board in the *Statement of Financial Accounting Concepts No. 2*, issued in May, 1980, as follows:

MATERIALITY

Materiality is a pervasive concept that relates to the qualitative characteristics, especially relevance and reliability. Materiality and relevance are both defined in terms of what influences or makes a difference to a decision maker, but the two terms can be distinguished. A decision not to disclose certain information may be made, say, because investors have no need for that kind of information (it is not relevant) or because the amounts involved are too small to make a difference (they are not material). Magnitude by itself, without regard to the nature of the item and the circumstances in which the judgment has to be made, will not generally be a sufficient basis for a materiality judgment. The Board's present position is that no general standards of materiality can be formulated to take into account all the considerations that enter into an experienced human judgment. Quantitative materiality criteria may be given by the Board in specific standards in the future, as in the past, as appropriate.

QUALITATIVE CHARACTERISTICS OF ACCOUNTING INFORMATION

123. Those who make accounting decisions and those who make judgments as auditors continually confront the need to make judgments about materiality. Materiality judgments are primarily quantitative in nature. They pose the question: Is this item large enough for users of the information to be influenced by it? However, the answer to that question will usually be affected by the nature of the item; items too small to be thought material if they result from routine transactions may be considered material if they arise in abnormal circumstances.

124. Throughout this Statement, emphasis has been placed on relevance and reliability as the primary qualitative characteristics that accounting information must have if it is to be useful. Materiality is not a primary characteristic of the same kind. In fact, the pervasive nature of materiality makes it difficult to consider the concept except as it relates to the other qualitative characteristics, especially relevance and reliability.

125. Relevance and materiality have much in common — both are defined in terms of what influences or makes a difference to an investor or other decision maker. Yet the two concepts can be distinguished. A decision not to disclose certain information may be made, say, because investors have no interest in that kind of information (it is not relevant) or because the amounts involved are too small to make a difference (they are not material).

But as was noted above, magnitude by itself, without regard to the nature of the item and the circumstances in which the judgment has to be made, will not generally be a sufficient basis for a materiality judgment.

126. Materiality judgments are concerned with screens or thresholds. Is an item, an error, or an omission large enough, considering its nature and the attendant circumstances, to pass over the threshold that separates material from immaterial items? An example of an applicant for employment who is negotiating with an employment agency will illustrate the relationship of the materiality concept to relevance and reliability. The agency has full information about a certain job for which the applicant is suited and will furnish any item of information about it. The applicant will certainly want information about the nature of the duties, the location of the job, the pay, the hours of work, and the fringe benefits. Information about vacations and job security may or may not be important enough to affect a decision concerning accepting the job. Further, the applicant may not be concerned at all with whether the office floor is carpeted or about the quality of the food in the cafeteria. All of those items are, in the broadest sense, relevant to an evaluation of the job. But some of them make no difference in a decision to accept it or not. The values placed on them by the applicant are too small for them to be material. They are not important enough to matter.

127. The employment agency example can also help to explain what is meant by a materiality threshold for reliability. Salary information accurate only to the nearest thousand dollars might not be acceptable to an applicant for an $8,000 a year job, but will almost certainly be acceptable if the job pays $100,000 a year. An error of a percentage point in the employee's rate of pension contribution would rarely make information about fringe benefits unacceptable. An error of a year in the retirement date of someone who would block the applicant's advancement might be quite material. An error of a year in the applicant's mandatory retirement date will probably be immaterial to a person 20 years old, but quite material to a 63-year-old person.

128. The more important a judgment item is, the finer the screen should be that will be used to determine whether it is material. ("A judgment item" is whatever has to be determined to be material or immaterial. It may be an asset or liability item, a transaction, an error, or any of a number of things.) For example:

a. An accounting change in circumstances that puts an enterprise in danger of being in breach of covenant regarding its financial condition may justify a lower materiality threshold than if its position were stronger.

b. A failure to disclose separately a nonrecurrent item of revenue maybe material at a lower threshold than would otherwise be the case if the revenue turns a loss into a profit or reverses the trend of earnings from a downward to an upward trend.

c. A misclassification of assets that would not be material in amount if it affected two categories of plant or equipment might be material if it changed the classification between a noncurrent and a current asset category.

d. Amounts too small to warrant disclosure or correction in normal circumstances may be considered material if they arise from abnormal or unusual transactions or events.

129. Almost always, the relative rather than the absolute size of a judgment item determines whether it should be considered material in a given situation. Losses from bad debts or pilferage that could be shrugged off as routine by a large business may threaten the continued existence of a small one. An error in inventory valuation may be material in a small enterprise for which it cut earnings in half but immaterial in an enterprise for which it might make a barely perceptible ripple in the earnings. Some of the empirical investigations referred to in Appendix C [of Statement of Financial Accounting Concepts No. 2 - Qualitative Characteristics of Accounting Information] throw light on the considerations that enter into materiality judgments.

130. Another factor in materiality judgments is the degree of precision that is attainable in estimating the judgment item. The amount of deviation that is considered immaterial may increase as the attainable degree of precision decreases. For example, accounts payable usually can be estimated more accurately than can contingent liabilities arising from litigation or threats of it, and a deviation considered to be material in the first case may be quite trivial in the second.

131. Some hold the view that the Board should promulgate a set of quantitative materiality guides or criteria covering a wide variety of situations that preparers could look to for authoritative support. That appears to be a minority view, however, on the basis of representations made to the Board in response to the Discussion Memorandum, *Criteria for Determining Materiality*. The predominant view is that materiality judgments can properly be made only by those who have all the facts. The Board's present position is that no general standards of materiality could be formulated to take into account all the considerations that enter into an experienced human judgment. However, that position is not intended to imply either that the Board may not in the future review that conclusion or that quantitative guidance on materiality of specific items may be appropriately be written into the Board's standards from time to time. That has been done on occasion already (for example, in the Statement on financial reporting by segments of a business enterprise), and the Board recognizes that quantitative materiality guidance is sometimes needed. Appendix C [of Statement of Financial Accounting Concepts No. 2] lists a number of examples of quantitative guidelines that have been applied both in the law and in the practice of accounting. However, whenever the Board or any other authoritative body imposes materiality rules, it is substituting generalized collective judgments for specific individual judgments, and there is no reason to suppose that the collective judgments are always superior. In any case, it must be borne in mind that if, to take one example, some minimum size is stipulated for recognition of a material item (for example, a segment having revenue equal to or exceeding 10 percent of combined revenues shall be recognized as a reportable segment), the rule does not prohibit the recognition of a smaller segment. Quantitative materiality guidelines generally specify minimum only. They, therefore, leave room for individual judgment in at least one direction.

132. Individual judgments are required to assess materiality in the absence of authoritative criteria or to decide that minimum quantitative criteria are not appropriate in particular situations. The essence of the materiality concept is clear. The omission or misstatement of an item in a financial report is material if, in the light of surrounding circumstances, the magnitude of the item is such that it is probable that the judgment of a reasonable person relying upon the report would have been changed or influenced by the inclusion or correction of the item.

GLOSSARY

The following words and phrases are used in *Financial Guidelines for Agricultural Producers.* The numbers following the definitions identify the section(s) and page(s) where the word or phrase is used in Section II, III, and IV. *Italicized* words are defined elsewhere in the glossary.

A

Accelerated Depreciation. Found under *depreciation*.

Accounts Payable. An amount owed to a creditor (i.e., an amount owed someone else), usually arising from the purchase of goods or services or other contractual obligation (not evidenced by a note payable). Accounts payable are normally classified in the *current liabilities* section of the *balance sheet*. (II-25, III-3,16)

Accounts Receivable. An amount owed by a customer or others to the business usually arising from the sale of goods or services or other contractual obligation. Accounts receivable are normally classified in the *current assets* section of the *balance sheet.* (II-24; III-16)

Accrual Accounting. Found under *basis of accounting.*

Accrual Adjusted. Found under *basis of accounting.*

Accrued Liability. Found under *liability.*

Accumulated Depreciation. Found under *depreciation.*

Amortization. The scheduled or systematic reduction of a balance in an account (most often an *intangible asset* account or *non-current liability* account) over an appropriate period of time. The methods used to amortize an *intangible asset* are similar to methods used to depreciate *tangible assets. Amortization* of *non-current liabilities (long term debt)* involves the periodic reduction of the principal amount by regular principal *debt* repayments over time. (II-14; III-6, 17-24, IV-4)

Asset. The future rights, privileges, and economic benefits, represented by tangible or intangible items, owned or controlled by a business or by a person as a result of past transactions or events. (II-2, 3, 7-9, 10-20, 24-25, 28-31, 35, 37, 38, 41-43, 46, 47; III-2, 3, 10-21; IV-8)

- **Capital Asset.** The non-current, *tangible asset* (or long term asset) owned by a business or by a person. (II-2, 3, 10, 11, 14, 15, 20, 21, 24, 27, 28, 30, 31, 37, 39, 45-46, 16-21; III-16-21)
- **Current Asset.** The unrestricted cash and any other asset that, in the normal course of operations, is reasonably expected to be converted into cash or consumed in the production process within one year or within the normal operating cycle (where the operating cycle is longer than a year). (II-24, 38, 41, 42, 43; III-7, 9)
- **Fixed Asset.** Same as *capital asset.*

Intangible Asset. An asset that lacks physical substance but, like all other assets, represents rights, privileges, and future economic benefits that result from ownership. Even though certain types of *current assets* may lack physical substance, the general practice followed is to use the term intangible asset only when referring to long-lived assets (or *non-current assets)* which lack physical substance. (II-21)

Intermediate Asset. A term not recommended for use, which usually meant *capital assets* having useful lives of one to ten years. See *non-current asset.*

Leased Asset. An asset which is not yet, and may never be, legally owned by the party using it (the lessee), but the user (or lessee) has the right to use that asset in much the same way as if it were owned. For agricultural producers, leased assets generally include machinery, equipment, real estate, certain types of improvements to real estate, and breeding livestock. (II-41) See *lease* for definitions of *capital leases* and *operating leases*.

Long Term Asset. A term not recommended for use which included *capital asset* and *intangible asset.* Same as *non-current asset.*

Non-Current Asset. An *asset* having a useful life greater than one year. Such an *asset*, which can be either a tangible or intangible item, is usually not purchased for resale, but is to be used over time in the production of salable products or services. (II-10, 11, 26, 40, 43)

Personal Asset. *Assets* which are owned by persons who may also own a business, but which are generally not used for business purposes. (II-4, 8, 10, 12, 16, 17, 21, 22, 27)

Tangible Asset. An *asset* which has physical substance. (II-10)

B

Balance Sheet. Same as *statement of financial position* and found under *financial statements.*

Base Value. Found under *valuation method.*

Basis of Accounting. The procedures and methods adopted for the timing of recognition, the method of measurement, and the timing of recordation of events that change the *financial position* of a business. (II-43-45)

Accrual Basis of Accounting. A method of *financial accounting* or financial reporting whereby events (generation of revenue, incurring expenses, etc.) that change the *financial position* of a business are recorded in the time period in which the events actually occur. *Revenue* is recorded when earned and *expenses* are recorded when incurred; as contrasted to *cash basis of accounting* when *revenue* is recorded only when cash is received and *expenses* are recorded only when cash is paid. (I-4)

Accrual Adjusted. A *financial statement* (*balance sheet*, *income statement*, *statement of cash flows*, and/or *statement of owner equity*) wherein the *basis of financial accounting* has been changed from *cash basis of accounting*, or *modified cash basis accounting*, to approximate *accrual basis of accounting* by incorporating into the cash basis numbers the changes to *accounts receivable*, *inventories*, *prepaid expenses*, *raised breeding livestock*, *accounts payable*, *accrued liabilities deferred income taxes* and other accrual amounts not otherwise already recorded in the cash basis, or modified cash basis, numbers. (II-2, 8, 9, 12, 19, 23-26, 38, 39, 41, 42,; III-16, 18)

Cash Basis of Accounting. A method of *financial accounting* by which *revenue* is recognized and recorded only when cash is actually received and *expenses* are recognized and recorded only when cash is actually paid, all regardless of the time when the agreement and/or obligation to sell, to purchase, or to otherwise pay may have been incurred. (III-16)

Modified Cash Basis Accounting. The *cash basis of accounting* which has been modified to deviate from the simple cash receipts-cash disbursements criteria by recognizing and recording certain items that otherwise are accrual in nature. The deviation may be the result of preference of the owner, or, more commonly, the result of tax or other laws. The most common modifications would be recognizing, and recording in the *statement of financial position*, the purchase of capital assets; and recognizing, and recording in the *statement of income*, the *depreciation* charges (which are non-cash expenses). Commonly referred to as cash accounting, notwithstanding the inclusion of certain accrual items.

Tax Basis of Accounting. Tax basis of accounting is not a single, uniquely defined *basis of accounting*. Rather, it is whatever *basis of accounting (cash basis, modified cash basis, accrual basis)* selected by a taxpayer for the purpose of calculating taxable income and which is acceptable to a taxing authority, consistent with the statutes and regulations of that taxing authority.

Borrowing Capacity. A theoretical measure of the total amount of *debt* capital that would be made available to a business by a prudent lender who: (a) has access to complete and accurate financial information, with necessary disclosures, about that business, and (b) is knowledgeable of the external economic environment in which that business operates. Character, *repayment capacity*, *liquidity*, *solvency*, *financial efficiency*, credit management, and collateral are all factors considered in determining borrowing capacity. Various financial institutions, vendors, and others may reach different conclusions as to the borrowing capacity of the same business because of their own risk bearing ability, their interpretation of the financial information made available to them, and their perception of the likely future changes in the external economic environment. See also *repayment capacity.* (II-11)

C

Capital Draws. Found under *owner withdrawals.*

Capital Gain. Found under *gain.*

Capital Lease. Found under *lease.*

Capital Loss. Found under *loss.*

Cash Basis of Accounting. Found under *basis of accounting.*

Cash Surrender Value of Life Insurance. The cash that would be paid by an insurance carrier upon surrender and termination of a policy of life insurance. (II-43)

Combined Financial Statements. Found under *financial statements.*

Commodity Credit Corporation. A corporation, often referred to as the CCC, created in 1933 and owned by USDA. Its primary objective is to stabilize the price of selected agricultural commodities by the use of non-recourse loans made to or for the benefit of agricultural producers. (II-18, 41, 42)

Consolidated Financial Statement. Found under *financial statements.*

Contributed Capital. Capital invested by the owners in a proprietorship or partnership business from sources other than earnings generated by and retained in that business. For a corporate business structure, the term "paid-in-capital" has a similar meaning. (II-12)

Cost. The purchase price of goods or services used in a business. (II-2-6, 7, 8, 11, 12, 13-15, 17-20, 22, 24-26, 28-42, 45-46; III-3, 10-14, 16)

Cost of Goods Sold. In an accounting period, the difference between: (a) the cost of goods available for sale during the period (which is the sum of the cost of goods on hand at the beginning of the period plus the cost of goods acquired or produced during the period) and (b) the cost of goods on hand at the end of the period. (II-17, 18)

Depreciated Historical Cost. The *historical cost* of *capital assets* reduced by the *accumulated depreciation* expense which has been taken with respect to those same *capital assets.* (II-16, 49, 50; III-10-12)

Historical Cost. The cash (or cash equivalent) price of acquiring ownership of a capital asset (purchase price), bringing it to the location (any freight and transportation), and placing it in a condition (alteration or installation) necessary for its intended use. The aggregate of these *costs* is allocated to the *cost* of production in future accounting periods through the *depreciation* process. Any future *costs* related to that capital asset (such as additions, improvements,

relocation, replacement of parts, etc.) are added to the historical cost (or original cost) only if those future *costs* provide future (greater than one year) service potential for the capital asset; otherwise, those future *costs* are expensed in the time period in which they are incurred. (II-2, 15, 28, 29, 30, 44, 45; III-10-112)

Original Cost. Same as *historical cost.*

D

Debt. Same as *liability.*

Current Debt. Same as *current liability* found under *liability.*

Current Portion of Long Term Debt. Same as *current portion of non-current liability* found under *liability.*

Intermediate Debt. A term not recommended for use usually meaning debt due in one to ten years. Included in *non-current liability.*

Non-Current Debt. Same as *non-current liability* found under *liability.*

Long Term Debt. Same as *non-current liability.*

Decision Making. The process by which owners and/or managers select one course of action over one or more possible alternative course(s) of action. (II-6)

Deferred Taxes. A *liability* or *asset* reflecting the difference between the amount of taxes payable or refundable in future years as a result of events recognized in the *financial statements* in the current or preceding years. The concept is based on the premise that the reported amounts of *assets* and *liabilities* on an enterprise's *balance sheet* will be recovered and settled, respectively. Includes primarily (1) the results of timing differences between taxable and accrual-adjusted income; and (2) the result of differences between balance sheet value and tax basis of *capital assets* (if values other than the tax basis are used as the basis for balance sheet presentation). (II-11, 12, 24-27, 46; III-7-12, 14)

Deferred Tax Asset. The deferred tax consequences attributable to temporary differences which are deductible when calculating taxable income and tax *loss carryforwards.* It is measured using the tax rate and provisions of the applicable tax law. A deferred tax asset should be shown on the *balance sheet* only to the extent that, based on available evidence, the deferred tax asset is expected to be realized at some future date. (II-27, 43)

Current Deferred Taxes. The portion of *deferred taxes* that relates to income which would arise by recognizing (i) the amount by which *accrual adjusted balance sheet* values of *current assets* exceed their tax basis or (ii) the amount of income that has been recorded in an *accrual adjusted income statement* but for which no asset or tax basis exists on the tax basis *balance sheet,* less (iii) the total *current liabilities* shown on an *accrual adjusted balance sheet* that, when paid, will result in a tax deduction. (II-26)

Non-Current Deferred Taxes. There are potentially two components of the non-current portion of deferred taxes:

a. The deferred tax consequence related to income which would arise by recognizing (i) the amount by which the base value of raised breeding livestock (as recorded on the accrual adjusted balance sheet and accrual adjusted income statement) exceeds their tax basis; and/or (ii) the amount by which notes receivable related to installment sales (as recorded on the accrual adjusted balance sheet and accrual adjusted income statement) exceeds their tax basis. (II-25)

b. The deferred tax consequences related to income which would arise by recognizing (i) the amount by which the market value of all non-current assets (other than raised breeding livestock) exceeds the tax basis of those non-current assets; and (ii) the amount by which the market value of raised breeding livestock exceeds the base value of those raised breeding livestock. (II-26)

Depreciation. As an economic concept: the decline over time in the potential usefulness (or value) of *capital assets* having limited life, which decline results from ordinary wear and tear, natural deterioration from exposure to the elements, and technical obsolescence.

As an accounting procedure: an allocation over time of the *historical cost* (or *original cost),* less *salvage value,* of a capital asset having a limited useful life (i.e. machinery, buildings, purchased breeding livestock, etc.) by a non-cash expense periodically charged against income over the service, or useful, life of that asset in a rational and systematic manner. Such charges may be calculated using one or more of the following methods (a) units of production or activity, (b) straight line, (c) accelerated (sum of the years digits, declining balance, or double declining balance) and (d) any special depreciation method selected and appropriately approved because the assets involved have unique characteristics. (II-3, 17, 19, 28-31, 45; III6, 17, 18, 23, 24, IV-4)

Accelerated Depreciation. Any *depreciation* method that produces larger deductions, or charges to the *income statement,* for *depreciation expense* in the early years of the useful life of an asset, than those *depreciation expense* charges which occur in the later years of the useful life of that asset. Such methods include sum of the years digits, declining balance, and double declining balance. (II-29)

Accumulated Depreciation. The total accumulated amount of the periodic (e.g., annual) *depreciation* charges which have been expensed to date relating to the *capital assets* recorded on the *balance sheet.* Accumulated depreciation is a contra-asset account (which simply means it is offset against an asset account) used in the *capital asset* accounts to produce the *net book value* of *capital assets.* (II-3, 11, 26, 34, 38, 41, 46)

Depreciated Historical Cost. Found under *cost.*

Discounted Future Cash Flows Method. For establishing the *value* of an *asset:* the *present value* of future cash inflows into which an *asset* is expected to be converted in the ordinary course of business, less *present values* of cash outflows necessary to obtain those inflows. For establishing the amount of a *liability:* the *present value* of future cash outflows expected to be required to satisfy the *liability* in the ordinary course of business. (II-14)

Distributions To Owners. Same as *owner withdrawals.*

Dividends. Found under *owner withdrawals.*

E

Equity. The ownership interest in the business. The interest of owners equals total *assets* minus total *liabilities* and could be considered to be the claim of the owners against the *assets* of the business. Owner equity is increased by the retained *net income* of the business or reduced by net *losses* of the business. Owner equity is increased by the owner contributions (of cash or other *assets)* to the business and decreased by the *owner withdrawals* from the business. The actual name shown for the equity amounts will be different depending on the organizational structure of the business. (II-6, 7, 10, 12, 13, 15, 20, 21, 24, 30, 39-42, III-2, 10, 11, 12, 14)

Equity Capital. Same as *equity.*

Net Worth. Same as *equity*. The term is generally used only when presenting a *statement of financial position* (or *balance sheet*) for an individual person or a *statement of financial position* for a business enterprise which also includes information for an individual person. (II-8, 12-13, 15, 17; III-12)

Owner Equity. Same as *equity*. The term is generally used when presenting a *statement of financial position* for only a business enterprise and which statement does not include information for an individual person. (II-2, 12-13, 15, 20, 23; III-2, 16)

Valuation Equity. That portion of *equity* recognized on a *statement of financial position* (or *balance sheet*) as the difference between *net book value* (*depreciated historical cost, base value* or other basis not charged as an *expense*) and *the balance sheet* value (net of *deferred taxes*) of all *assets* whose value changes have not been reflected in an *income statement*-breeding livestock (raised or purchased), machinery, real estate, etc. (II-12, 24, 26)

Expenses. The *cost* of *assets* consumed or services used in the process of generating *revenue* in the ordinary course of business for business activities that constitute the on-going operations of the business in an accounting period. (II-7, 8, 11-13, 16-20, 22, 28, 31, 34-43; III-2-4, 6, 15-21)

Operating Expenses. Expenses incurred in conducting the major, ongoing, central operations of a business, including production expenses, selling expenses, and the *cost* of repairs and maintenance, but excluding *depreciation* and interest. When the *value of farm production* approach is used to prepare the *income statement*, the *cost* of purchased livestock held for resale and the *cost* of purchased feedstuffs are also excluded from operating expenses. (II-18-19, 42; III-19, 20, 23)

Other Expenses. Incidental *costs* incurred related to activities which do not constitute the major, ongoing, central operations of the business, but not including incidental *costs* related to extraordinary events.

Personal Expenses. Expenses which are not incurred for production of business *revenues*, but which are incurred by the persons who own the business and generally would be for *family living expenses*, (food, clothing, education, medical expenses, vacations, etc.) or other non-business activities. These items may or may not be tax deductible for the individual. (II-16, 20, 21)

Prepaid Expenses. An expense item (other than for purchase of *inventory)* that is paid and recorded in advance of its use or consumption in the ordinary course of business, part of which properly represents expenses for the current accounting period and part of which will represent an *asset* remaining on hand at the end of the accounting period and available for use in future periods. (II-5, 24; III–16)

Extraordinary Items. An event or transaction that is both unusual in nature (i.e., not part of the usual and customary activity of the business) and infrequent in occurrence (i.e., not reasonably expected to recur in the foreseeable future). (II-21)

F

Fair Market Value. Found under *valuation method.*

Family Living Expenses. A term not recommended for use. See *owner withdrawals.*

Financial Accounting. That branch of accounting which focuses on development and presentation of the general purpose reports (known as *financial statements)* on *financial position* and results of operations of a business. (II-5-9, 12)

Financial Efficiency. The intensity with which a business uses its *assets to* generate *gross revenues* and the effectiveness of production, purchasing, pricing, financing, and marketing decisions in generating a profit. (III-1-3, 6; IV-4)

Financial Lease. Same as *capital lease* found under *lease.*

Financial Measurement. A quantification (or measurement) of *the financial position* and the *financial performance* of a business using accounting data for that business which has been prepared using sound, widely recognized accounting procedures. Calculations are usually for individual businesses (i.e., a micro basis) rather than industry-wide aggregations (i.e., macro basis). For calculations of various recommended financial measures, see pages III-6 to III-23.

Financial Performance. The results of production and financial decisions, over one or more period(s) of time. Measures of financial performance include both the impact of external forces that are beyond anyone's control (drought, grain embargoes, etc.), and the results of operat-

ing and financing decisions made in the ordinary course of business. (II-1-6, 15, 16, 19, 23, 32, 37, 43; III-1-5; IV-1)

Financial Position. The total resources controlled by a business and total claims against those resources, at a single point in time. Accounting data which express the financial position are presented in *a statement of financial position* (commonly referred to as a *balance sheet).* Measures of financial position provide an indication of the capacity of the business to withstand risk from future operations and provide a benchmark against which to measure the results of future business decisions. (II-2-6, 8, 10, 11, 13, 16, 17, 24, 39, 45; III-1-5, 9-11)

Financial Ratios. The result of a comparison using two or more elements of financial data, which result can be expressed either as a percent (such as XX%) or as a comparison to one (such as XX: 1) which is sometimes alternatively referred to as the number of times. (III-2, 4-5)

Financial Statements. The general purpose financial reports (which include *statement of financial position* [or *balance sheet], statement of income, statement of cash flows,* and *statement of owner equity)* that reflect the collection, tabulation, and final summarization of the accounting data which represents the *financial position* of a business at a point in time and the results of operation of that business over time. Those general purpose financial reports provide a consistent history, quantified in terms of money, of economic resources and obligations of a business and of the economic activities that change those resources and obligations over time. (II-1-3, 5-10, 13-14, 16-17, 19-20, 23-24, 27-30, 34, 39, 43-46; III-3, 5)

Consolidated Financial Statements. *Financial statements* which represent an aggregation of all *assets, liabilities,* income, *expenses,* cash flows, and changes in *owner equity* for a parent firm and its subsidiary(ies), with all inter-company transactions and balances having been eliminated. (II-39)

Combined Financial Statements. *Financial statements* which represent an aggregation of all *assets, liabilities,* income, *expenses,* cash flows, and changes in *owner equity* for two or more firms which are not parent-subsidiary (-ies), but which are affiliated through common ownership or common management or both, with all inter-company transactions and balances having been eliminated. (II-8, 9, 17)

Statement of Financial Position. The *financial statement* which shows the *assets, liabilities* and *owner equity* of a business at a specific date. Sometimes referred to as the *balance sheet.* (II-10,)

Statement of Income. The *financial statement* that measures the results of operations by presenting the *revenues* and *expenses* of a business during a specific accounting period. (II-43)

Statement of Cash Flows. The *financial statement* which reports the cash provided and the cash used by the operating, investing, and financing activities of a business during a specific accounting period. (II-7, 13, 21, 22; III-18)

Statement of Net Worth. Same as *statement of owner equity* except that it also includes the equity accounts of individuals. (II-13, 14)

Statement of Owner Equity. The *financial statement* which summarizes the changes in *owner equity* of a business enterprise during a specific accounting period, but does not include changes to the equity accounts of individual persons. Such changes generally result from *net income* or net *loss,* capital contributions by owners or *owner withdrawals,* and changes, if any, to *valuation equity.* (II-7, 8, 12, 14, 17, 21-24, 26, 27)

G

Gain. Increases in *equity* (or net *assets*) from all transactions, events, and circumstances affecting the business during an accounting period; but not including any increase in *equity* resulting from *capital contributions* from owners. (II-7, 12, 20, 21, 25, 28, 30-31, 33-37, 39)

Capital Gain. For income tax purposes, in most cases, the amount by which proceeds received from the disposition of a *capital asset* (as classified under tax law) is greater than the tax basis, which is usually its *historical cost* (or *original cost)* less *accumulated depreciation* of that *capital asset.* (II-15, 20, 21; III-13-16, 22-23)

Generally Accepted Accounting Principles. Referred to as GAAP, the common set of accounting standards and accounting procedures used for preparing financial reports which are generally accepted either (i) because an authoritative rule-making body has established a principle of accounting/reporting in a specific area or (ii) because over time a given practice has become accepted by the accounting profession as appropriate because of universal application of that practice. (II-1-6, 11, 13, 24, 27, 28, 31-33, 35, 39-42,45)

Gross Revenue. Found under *revenue.*

H

Historical Cost. Found under *cost.*

I

Income Statement. Same as *statement of income* found under *financial statement.*

Index. Any number or amount derived from a mathematical calculation that expresses the relationship of two or more values. (III-12)

Intangible Asset. Found under *asset.*

Intermediate Asset. Found under *asset.*

Intermediate Liability. Found under *liability.*

Inventory. Tangible *current assets* which (i) are held for sale in the ordinary course of business (i.e., finished goods), or (ii) are in the process of production for such ultimate sale (i.e., work in progress), or (iii) are to be directly used or consumed in the production of goods or services for ultimate sale (i.e., raw materials and supplies). (II-2, 4, 5, 7, 17-19, 23, 31-34, 41-42, 43; III-4, 7, 8, 9)

L

Lease. A contractual agreement whereby the owner of an *asset* (lessor) conveys the right to use the *asset* to someone else (lessee), usually for a specified period of time, in return for some form of consideration, generally periodic cash payments. (II-40, 45, 46)

Capital Lease. A noncancellable agreement whereby the owner of an *asset* (lessor) transfers to someone else (lessee) most of the benefits and risks incident to the ownership of property and which agreement meets any one of the following four criteria:

a. At the end of the *lease* term, ownership of the leased property is transferred to the lessee.
b. The *lease* contains a bargain purchase option.
c. The term of the *lease* is at least 75% of the estimated economic life of the leased property.
d. The present value of the minimum *lease* payments equals or exceeds 90% of the *fair market value* of the leased property. (II-40, 41; III-18, 21, 22)

Financial Lease. Same as *capital lease.*

Non-Financial Lease. Same as *operating lease.*

Operating Lease. An agreement whereby the owner of an *asset* (lessor) generally retains most of the benefits and risks incident to property ownership but allows someone else (lessee) temporary use of the property for periods of time shorter than the useful life of the property, and the terms of the agreement clearly would not meet any of the four criteria used in determining a *capital lease.* (II-40)

Liability. A probable future sacrifice of economic benefits (i.e., payment of cash) arising from present obligations of a business to transfer *assets* or provide services to other businesses or individuals in the future as a result of past transactions or events. A sum of money owing by one party (the debtor) to another (the creditor) payable either on demand or at some future time. (II-2, 3, 8, 10, 11, 14, 16, 26, 27; III-3, 9-11, 13, 14)

Accrued Liability. A *liability (debt)* arising from the purchase or receipt of goods or services (including interest for the use of money) which, at the date of reporting, has only been partially delivered or performed, which has not yet been billed for payment and which has not been paid. While similar to an *account payable,* an accrued liability is different because (i) it includes an element of estimation to determine the amount and (ii) it is accumulated with the passage of time. Examples include accrued interest on *debt,* accrued utility bill, accrued wages for only a portion of a pay period, etc.

Current Liability. A *liability (debt)* whose payment (i) is scheduled to, or is reasonably expected to occur within one year or the operating cycle, whichever is longer, or (ii) is expected to require either the use of existing resources properly classified as *current assets* or the creation of other *current liabilities* for its satisfaction. (II-25, 41-43)

Current Portion of Non-Current Liability. That portion of principal (of a *long term debt)* that is scheduled and due to be paid within 12 months from the date of the *statement of financial position (balance sheet).* Sometimes referred to as *current portion-term debt.*

Non-Current Liability. *A liability (debt)* with a date for payment due beyond one year from the date of the *statement of financial position (balance sheet)* or beyond the normal operating cycle (where the cycle is longer than one year). *Non-current liabilities (long term debt)* exclude that portion of the debt principal due for payment within one year (i.e., *current liability (debt)).* (II-11, 25, 26)

Intermediate Liability. A term not recommended for use, usually meaning a *liability* due in one to ten years. Included in *non-current liability.* (II-11)

Tax Liability. Amounts owed (whether due and payable or deferred) to any governmental body (federal, state, or local) having lawful taxing authority. (II-16, 23, 24, 26, 27; III-10-12)

Liquidity. *A* theoretical measure of the relative length of time expected to elapse until (i) an *asset* can be converted into cash or (ii) a *liability* has to be paid with cash. However, for reasons of practicality, liquidity is measured not by units of time, but by simply comparing cash, near cash assets, or all *current assets* to *current liabilities* of a business for the purpose of assessing the ability of the business to meet current and maturing obligations as they come due in the ordinary course of business and without disrupting the normal operation of the business. Such a measure for liquidity is not only practical, but also theoretically sound because, by definition, *current assets* and *current liabilities* both have a one-year time horizon by when they are to be converted to cash (for *current assets)* or satisfied (for *current liabilities).* (II-6, 17, 46; III-1, 7, 9)

Long Term Asset. Found under *asset.*

Loss Carryover. Same as *loss carryforward* found under *loss*

Loss. Decreases in *equity* (or net *assets)* from all transactions, events and circumstances affecting the business during an accounting period, but not including any decreases in *equity* resulting from *owner withdrawals.* (II-7, 12, 15, 20, 21, 23, 25, 28, 30, 34, 35-40)

Capital Loss. For income tax purposes, in most cases, the amount by which the proceeds received from the disposition of a *capital asset* (as classified under tax law) is less than the tax basis, which is usually the *historical cost* or *original cost* less the *accumulated depreciation* of that *capital asset.* (III-13, 15, 24)

Loss Carryback. An income averaging provision of tax law that allows a tax payer, under certain circumstances, having a net operating loss for tax purposes (i.e. tax deductible *expenses* and exemptions exceed taxable *revenue*) in a given year to carry that loss back and receive refunds with respect to income taxes paid in prior years. The number of years carried back would depend on then existing tax provisions. (III-13, 15, 24)

Loss Carryforward. An income averaging provision of tax law that allows a taxpayer, under certain circumstances, having a net operating loss for tax purposes (i.e. tax deductible *expenses* and exemptions exceeded taxable *revenues*) in a given year to carry that loss forward for off-setting future taxable income. The number of years carried forward would depend on then existing tax laws. *Loss carryforwards* are often referred to as *net operating losses (NOL), loss carryovers,* or *tax loss carryforwards.* (III-13-15, 24)

M

Market Value. Found under *valuation method.*

Marketable Security. A bond, stock, or similar financial instrument that can be readily converted to cash. Security for which there is a ready market of willing buyers and willing sellers and which is publicly traded on a nationally or regionally recognized exchange. (II-15-17)

Materiality. The magnitude of an omission or misstatement of accounting information that, in light of surrounding circumstances, makes it probable that the judgment of a reasonable person relying on the information would have been changed or influenced by the omission or misstatement. (II-9-10, 41)

Modified Cash Basis Accounting. Found under *basis of accounting.*

N

Net Book Value. Found under *valuation method.*

Net Farm Income (NFI). A measure of the results of an agricultural operation and the *gain* or *loss* from the sale of farm *capital assets* in the ordinary course of business including those adjustments (to approximate the *accrual basis of accounting)* for changes to *accounts receivable, inventories, prepaid expenses, raised breeding livestock, accounts payable, accrued liabilities,* and other accrual amounts not otherwise already recognized and recorded, but before accounting for *other revenue, other expenses,* income taxes, and *extraordinary items.* (II-12, 13-21, 23, 30, 35, 37, 39; III-6, 13-19, 24)

Net Income. The excess of all *revenues* (including *other revenues,* income tax refunds and *extraordinary gains)* from whatever source, over all *expenses* (including *other expenses,* income taxes, and *extraordinary losses)* incurred in a specific accounting period, including those adjustments (to approximate the *accrual basis of accounting)* for changes to *accounts receivable, inventories, prepaid expenses, raised breeding livestock, accounts payable, accrued liabilities, deferred income taxes,* and other accrual amounts not otherwise already recognized and recorded. (II-2, 12, 13, 23, 36, 38; III-3)

NOL. Stands for *net operating losses* which is the same as *loss carryforward* found under *loss.*

Net Realizable Value. Found under *valuation method.*

Net Worth. Found under *equity.*

Non-financial Lease. Same as *operating lease* found under *lease.*

Note Payable. A *liability* evidenced by a promissory note which is a formal written promise by the borrower to pay a certain amount on demand or at a certain future date. (II-46)

Note Receivable. An *asset* evidenced by a promissory note which is a formal written promise to be paid a certain amount on demand or at a certain future date. (II-14, 25, 45)

O

Operating Expenses. Found under *expenses.*

Operating Lease. Found under *lease*.

Opportunity Cost. The potential benefit (i.e. *net income)* that is forgone as the result of rejecting one or more alternatives while accepting another. (II-36, III-13-15)

Original Cost. Same as *historical cost* found under *cost.*

Other Distributions. Found under *owner withdrawals*.

Other Expenses. Found under *expenses.*

Other Revenue. Found under *revenue.*

Owner Equity. Found under *equity.*

Owner Withdrawals. The payments made to the owners of a business from the accumulated earnings of that business. The distributions to owners are given different names depending on the organizational structure of the business. (II-16, 22 III-3, 13-15, 17, 18)

Corporation

Dividends are distributions declared by the board of directors, payable to the stockholders, usually in cash; sometimes in shares of the corporation's stock, called a "stock dividend"; less frequently in property, called a "dividend in kind." (II-6, 40)

Proprietorship and Partnership

Capital Draws represent the funds distributed to an owner or a partner, either as a systematic, regular withdrawal of a fixed sum (such as might be used for personal living expenses), or as an irregular withdrawal (such as might be used for personal discretionary use). Capital draws can be further broken down into two categories:

a. **Owner Withdrawals for Unpaid Labor and Management** represent distributions made to the owner(s) or partners but only up to the estimated value of unpaid labor and management actually performed by the owner(s) or partners. (II-23-25; III-13-15, 17)

b. **Other Distributions** would be those amounts distributed to the owners which are estimated to be in excess of the estimated *value* of unpaid labor and management actually performed by the owner(s) or partners. (II-6, 22)

Cooperative:

Patronage Distributions or Patronage Dividends represent that portion of a cooperative's *net income* or net savings which is distributed to its members based on their proportional patronage of the cooperative.

P

Paid-In Capital. A term used by corporations to represent the excess over par *value* of stock paid in by stockholders in return for shares of stock issued to them by the corporation.

Patronage Distributions. Found under *owner withdrawals.*

Patronage Dividends. Found under *owner withdrawals.*

Personal Asset. Found under *asset.*

Personal Expenses. Found under *expenses.*

Prepaid Expenses. Found under *expenses.*

Present Value. The estimated value today of an amount of cash to be received or paid at a future date. The calculation is: $PV = FV(1+ r/n)^{-t}$

Where PV = present value
FV = future value
r = rate of interest or discount rate
t = number of discounting periods between the present date (for PV) and the future date when the payments are to be made (for FV)
n = number of discounting periods per year

(II-14)

Profitability. The extent to which a business generates a profit or *net income* from the use of land, labor, management, and capital. (II-36, III-1, 2, 6, 13, 15, IV-9)

R

Raised Breeding Livestock. Animals which can be used for breeding purposes and which have been raised from birth as part of the business into whose breeding herds they will go; accordingly, on a cash basis or modified cash basis *balance sheet* and for their tax basis these animals would have a zero basis. (II-15, 25, 26, 32, 34-38, 45)

Relevance. Information about an item which has feedback value and/or predictive value, must be timely, and must have the capacity to make a difference in the decisions of owners, investors, creditors, or others. (II-14-15)

Reliability. Information about an item which is representationally faithful, verifiable, and neutral. Information is reliable if it is sufficiently consistent in its representation of the underlying resource, obligation, or effect of events, and sufficiently free of error and bias to be useful to owners, investors, creditors, and others in making decisions. (II-14-15; III-3, 23-24)

Repayment Capacity. A measurement of the ability of a borrower to repay *non-current liabilities* which are interest bearing or have a due date or both. Principal payments on *non-current liabilities (long term debt)* must come from *net income* (with *depreciation* and other non-cash *expenses* added back) after *owner withdrawals*, and Social Security taxes. See also *borrowing capacity* (II-8; III-1-3, 6, 17-22)

Retained Capital. For an *accrual adjusted statement of financial position* (or *balance sheet)*, with *capital assets* recorded at *depreciated historical cost/base value*, it is the balance of *net income* and *contributed capital* accumulated since the beginning of the business less any *losses* or *owner withdrawals* over that same period of time. A term generally used for an unincorporated business (proprietorship, partnership, limited liability company) but which is also sometimes used for an incorporated business which has records that are inadequate to differentiate *income/losses* from *contributed capital.*

Will typically have a credit balance. A deficit (simply called retained deficit is unusual, but not impossible.)

Retained Earnings/Deficit. Accumulated balance of *net income* in excess of net *losses* of a corporation since inception, less *dividends.* Retained earnings *(losses)* are shown as a separate category within the stockholders' *equity* section of the *balance sheet.* It typically has a credit balance; a deficit (simply called retained deficit) is unusual but not impossible. (II-12, 30)

Revenue. Cash inflows or other enhancements of *assets* of a business or settlement of its *liabilities* (or a combination of both) during an accounting period from the delivery or production of goods, from the rendering of services, or from other activities. (II-3, 7, 12, 13, 15-23, 37-38, 45; III-4, 15-18, 20)

Gross Revenue. The total of all *revenues* received for goods produced for sale or for services rendered in a specified period of time from business activities that constitute the major, ongoing, central operations of the business. (II-12, 17-20, 34, 38 III-3, 9, 15, 20, 23)

Other Revenue. Incidental *revenue* that is received from sources other than the major, ongoing, central operations of the business, but not including incidental *revenue* received from extraordinary events.

S

Salvage Value. Found under *valuation method.*

Solvency. A measurement of the amount of borrowed capital (or *debt)*, leasing commitments, and other obligations used by a business relative to the amount of *owner equity* in the business. *Debt* capital is interest bearing and/or has a date by which it must be paid. Therefore, solvency measures provide (a) an indication of the firm's ability to repay all financial obligations if all *assets* were sold (for the prices indicated) and (b) an indication of the ability to continue operations as a viable business after a financial adversity (such as drought), which typically results in increased *debt* or reduced *equity*. (II-6, 46; III-1, 2, 6, 10-12; IV-6)

Statement of Cash Flows. Found under *financial statements.*

Statement of Owner Equity. Found under *financial statements.*

T

Tangible Asset. Found under *asset.*

Tax Basis Accounting. Found under *basis of accounting.*

Tax Liability. Found under *liability.*

Tax Loss Carryforward. Same as *loss carryforward* found under *loss.*

Treasury Stock. Capital stock (usually common stock, but can also be preferred stock) of a corporation that has been issued and has subsequently been reacquired by the corporation and it has not been canceled. Such treasury stock may be held indefinitely by the corporation, may be subsequently reissued to officers or employees as part of incentive plans, may be resold, or may be canceled. The affect of treasury stock held by a corporation is to reduce the remaining number of shares outstanding, thereby resulting in a change to the percentage of ownership held by each of the remaining shareholders. Equity will be reduced either because of a reduction in assets used to pay for the treasury stock acquired or because of an increase in debt taken on to pay for the treasury stock acquired.

V

Valuation Equity. Found under *equity*.

Value. (a) The worth of all the rights, privileges, and economic benefits arising from ownership of an *asset.* (b) The relative utility, benefit, importance or worth of something. (c) A numerical quantity that is assigned or is determined by calculation or by measurement. (II-2-5, 7, 9-12, 13-15, 17-26, 28, 29, 31-40, 42-46; III-2, 3, 7-13, 15, 22; IV-4-8)

Valuation Method. The method by which the worth of all the rights, privileges, and economic benefits represented by an *asset* or group of *assets* is determined. (II-2, 14, 15, 33)

Base Value. A method of valuing *raised breeding livestock* so that changes in numbers of animals and changes in *value* of animals can be used to realistically and consistently adjust a cash basis *income statement* and a cash basis *balance sheet* to approximate an *accrual adjusted income statement* and *accrual adjusted balance sheet.* (II-3, 25, 26, 34-38, 43-45)

Book Value. Same as *net book value.*

Depreciated Historical Cost. Found under *cost.*

Fair Market Value. Same as *market value.*

Historical Cost. Found under *cost*.

Market Value. The most probable price in terms of money which an *asset is* expected to bring in a competitive and open market under all conditions required for a fair sale, with buyer and seller each acting prudently and knowledgeably, less normal selling *costs.* The amount that could be received on the sale of an *asset* when willing and financially capable buyers and sellers exist and there are no unusual circumstances such as liquidation, shortages, and emergencies. (II-2-4, 10, 11, 14, 15, 17, 24, 26, 28-32, 34, 35, 37, 38, 40-42, 44-46; III-3, 10-14)

Net Book Value. A measure of the *value* of an *asset* as recorded in the *statement of financial position (balance sheet).* For non-current assets it is determined by subtracting the *accumulated depreciation* (or *amortization)* from the *historical cost* (or *original cost)* of the *asset.* (II-3, 12, 28, 46)

Net Realizable Value. An estimate of the amount of cash, or its equivalent, into which an *asset is* expected to be converted in the ordinary course of business, less reasonably predictable *costs* of completing production of the *asset* and *costs* of selling the *asset.* (II-4-5, 14, 31-32)

Sale Value. The amount of cash, or cash equivalents, received at the actual time of the sale of an *asset.* (II-37)

Salvage Value. The estimated remaining worth of an *asset* which can no longer be used as is or which has no further serviceable life to the business. Sometimes also called scrap value, this estimated residual is ordinarily deducted from the *historical cost* (or *original cost)* of the *asset* when determining the periodic *depreciation* amount to be charged against *income* as an *expense*. (II-29-31)

Value of Farm Production (VFP). A term unique to farm earnings statements. VFP is a measure of the *value* an agricultural operation has added to products sold and is determined by subtracting from *gross revenue* the *cost* of purchased *assets* which were subsequently sold to produce all, or part of, the total *revenues*. The most common example of purchased *assets* which are subsequently sold is subtraction from *revenue* of the *cost* of feeder livestock purchased and the *cost* of feedgrains purchased. VFP was developed to provide a method of comparing the *profitability* of two or more farming operations which is better than a simple comparison using *gross revenues* from these operations. (II-17, 34; III-15, 23; IV-8)