SJIF IMPACT FACTOR (2019): 7.022|VOLUME:7|OCTOBER–SEPTEMBER 2019-2020 ISSN (PRINT): 2321-6247

EPRA INTERNATIONAL JOURNAL OF ECONOMIC GROWTH AND ENVIRONMENTAL ISSUES (EGEI)

Peer-Reviewed Journal

AGRICULTURE ACCOUNTING IS TOOL FOR ASCERTAINMENT OF PROFIT OF AGRICULTURE COMMODITIES-METHODS, TECHNIQUES AND DIFFICULTIES

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ABSTRACT

Accounting is an information system that communicates information regarding resource formation and usage of an enterprise, increase or decrease in those resources resulting from financial transactions and financial situation of the enterprise to related individuals and institutions. Accounting has four basic functions: recording, classifying, reporting and interpreting. Within this framework, accounting is defined as a science and art of recording, classifying, summarizing, reporting and interpreting financial and monetary transactions. Field of activity and branch of activity of enterprises could take issue. Within this framework, while recording of financial transactions in agricultural production process necessitates the use of financial accounting; estimation of production costs incurred during the cultivation of agricultural goods necessitates the use of cost accounting and provision of new data, either obtained from financial or cost accounting, for decision-making practices of enterprise managers necessitates the use of managerial accounting. Agricultural accounting can be explained as a specialty accounting which primarily records financial and monetary transactions throughout agricultural activities, classifies financial transaction in respect of types, estimates production costs incurred throughout the cultivation of agricultural merchandise then reports that money per their functions. In this context the aim of this study is to investigate historical development of agricultural accounting and to put forth the difficulties encountered during its implementation. Besides the definition, objectives, significance and historical development of agricultural accounting square measures are studied before to implementation difficulties.

KEY WORDS: *Accounting, Methods, Valuation of inventory, Income statement and Balance sheet.*

INTRODUCTION

Accounting is an information system that communicates information regarding resource formation and usage of an enterprise, increase or decrease in those resources resulting from financial transactions and financial situation of the enterprise to related individuals and institutions. Accounting has four basic functions: recording, classifying, reporting and interpreting. Within this framework, accounting is defined as a science and art of recording, classifying, summarizing, reporting and interpreting financial and monetary transactions (Sevilengül, 2008). Field of activity and branch of activity of enterprises could take issue. These differences are liable for the existence of different accounting types. Within that framework, accounting is comprised of three main parts. Those are financial, cost and managerial accounting. However, there exist some other specialty accounting types apart from the scope of the main parts listed above. Construction accounting,

bank accounting, insurance accounting, tax accounting, hotel accounting and agricultural accounting are examples of such types (Özulucan, 2009). In this context the aim of this study is to investigate historical development of agricultural accounting and to put forth the difficulties encountered during its implementation. Besides the definition, objectives, significance and historical development of agricultural accounting square measures are studied before to implementation difficulties. The remainder of this study is as follows: Wheare as section 2 gives a pair of offer a short clarification on definitions and objectives of agricultural accounting section three deals with the importance of agricultural accounting. Section four offers the historical timeline of agricultural development and section five describes the difficulties while implementing agricultural accounting. Final section concludes the rest of the study.

Definition and Objectives of Agricultural Accounting Agricultural accounting, as noted earlier, is among the specialty accounting types since enterprises in agricultural activities tend to acquire specific branches and objectives of activity. They all utilize the info provided by money, price and social accounting. Within this framework, while recording of financial transactions in agricultural production process necessitates the use of financial accounting; estimation of production costs incurred during the cultivation of agricultural goods necessitates the use of cost accounting and provision of new data, either obtained from financial or cost accounting, for decision-making practices of enterprise managers necessitates the use of managerial accounting. Agricultural accounting can be explained as a specialty accounting which primarily records financial and monetary transactions throughout agricultural activities, classifies financial transaction in respect of types, estimates production costs incurred throughout the cultivation of agricultural merchandise then reports those money per their functions.

The objectives of agricultural accounting can be listed as follows

- Estimation of actual costs pertaining to agricultural goods,
- Determination of sale prices of goods obtained from agricultural activities,
- Fair and well-balanced allocation of dividends among enterprise partners following profit-loss estimation,
- Assistance to farmers and enterprises in estimation of tax base,
- Monitoring inter temporal financial and physical aspects of agricultural enterprises,
- Monitoring the movements in quantity and value pertaining to agricultural goods,
- Performance of cost analysis, followed by rational precautionary measures,
- Assistance to agricultural enterprises in budget planning for the future,
- Provision of information in order to facilitate parties for the transactions of rent (leasing) sharecropping, purchase or sale,
- Provision of related information to top executives on determination of agriculture, revenue and price policies,
- Assistance to agricultural enterprises in monitoring the performances of their own employees and managers,
- Determination of support cost for agricultural products which would be subject to subsidy,
- Provision of information on agricultural enterprises to agricultural credit establishments.
- Determination of employee workers and,
- Assistance in education, coaching and analysis services

ACCOUNTING METHODS AVAILABLE TO FARMERS

An accounting method is a set of rules used to determine when and how income and expenses are reported. A farmer's accounting method includes not only overall method of accounting, but also the accounting treatment used for any material item.

A farmer can use any of the following accounting methods:

- Cash method.
- Accrual method.
- Special methods of accounting for certain items of income and expenses.
- Combination (hybrid) method using elements of two or more of the above.

Generally, a taxpayer engaged in the trade or business of farming is allowed to use the cash method for its farming business. However, certain farm corporations and partnerships, and all tax shelters, must use an accrual method of accounting.

A farmer can account for business and personal items using different accounting methods. For example, a farmer can figure his/her business income under an accrual method, even if she/he uses the cash method to figure personal items.

Similarly, if a farmer operates two or more separate and distinct businesses, s/he can use a different accounting method for each. However no business is separate and distinct unless a complete and separate set of books and records are maintained for each business.

Most farmers use the cash method since they find it easier to keep records using the cash method. However, certain farm corporations and partnerships and all tax shelters must use an accrual method of accounting.

Under the cash method, all items of income actually or constructively received during the tax year should be included in the gross income. If property or services is received by a farmer, s/he must include their fair market value in income.

A cash method farmer's gross income for the tax year includes

- cash and the value of merchandise or other property received during the year from the sale of livestock and produce raised;
- profits from sale of purchased property and livestock;
- fees received from breeding, renting teams, machinery or land, and other incidental farm income;
- all taxable subsidy and conservation payments received; and
- Gross income from all other sources.

Income is constructively received when an amount is credited to a farmer's account or made available to him/her without restriction. S/he does not need to have possession of it. If a farmer authorizes someone to be his/her agent and receive income for, the farmer is considered to have received it when the agent receives it. Income is not constructively received if receipt of the income is subject to substantial restrictions or limitations.

Similarly, if a farmer receives direct payments or counter-cyclical payments under Subtitle A or C of the Farm Security and Rural Investment Act of 2002, s/he will not be considered to have constructively received a payment merely because s/he had the option to receive it in the year before it is required to be paid.

A farmer cannot hold checks or postpone taking possession of similar property from one tax year to another to avoid paying tax on the income. Also, a farmer must report the income in the year the money or property is received or made available to him/her without restriction.

If debts of a farmer are paid by another person or are canceled by creditors, the farmer may report part or all of this debt relief as income. If income is received in this way, the farmer constructively receives the income when the debt is canceled or paid.

However, when a farmer sells an item under a deferred payment contract that calls for payment the following year, there is no constructive receipt in the year of sale. However, there are exceptions to this rule, for example: a farmer uses the cash method and a calendar tax year. He sells grain in December 2009 under a bona fide arm's-length contract that calls for payment in 2010. He included the sale proceeds in 2010 gross income since that is the year payment is received. However, if the contract states that the farmer has the right to the proceeds from the buyer at any time after the grain is delivered, he must include the sale price in 2009 income, regardless of when he actually receive payment.

If a farmer include an amount in income and in a later year s/he has to repay all or part of it, then s/he can usually deduct the repayment in the year in which it is made. However, if the repayment is more than $3,000, a special rule applies.

Under the cash method, generally a farmer deduct expenses in the tax year when it is paid. This includes business expenses for which the farmer contest liability. However, s/he may not be able to deduct an expense paid in advance or s/he may be required to capitalize certain costs.

Generally, a farmer cannot deduct expenses paid in advance. This rule applies to any expense paid far enough in advance to, in effect, create an asset with a useful life extending substantially beyond the end of the current tax year.

Under an accrual method of accounting, generally the farmer report income in the year earned and deduct or capitalize expenses in the year incurred. The purpose of an accrual method of accounting is to correctly match income and expenses. Certain businesses engaged in farming must use an accrual method of accounting for its farm business and for sales and purchases of inventory items.

An accrual method farmer's gross income for a tax year is the sum of:

- the sales price of all livestock and other products held for sale that are sold during the year;
- the inventory value of livestock and products;
- all miscellaneous income items, e.g., fees from breeding, renting teams, machinery or land, or other incidental farm income;
- all subsidy and conservation payments includible that year; plus
- Gross income from all other sources.

Generally, a farmer includes an amount in income for the tax year in which all events that fix his/her right to receive the income have occurred, and s/he can determine the amount with reasonable accuracy. If a farmer keeps an inventory, generally s/he must use an accrual method of accounting to determine his/her gross income.

If a farmer is required to keep an inventory, his/her should keep a complete record of his/her inventory as part of farm records. This record should show the actual count or measurement of the inventory. It should also show all factors that enter into its valuation, including quality and weight, if applicable.

When a farmer uses accrual method of accounting in the hatchery business s/he must include in inventory, eggs in the process of incubation.

All harvested and purchased farm products held for sale or for feed or seed, such as grain, hay, silage, concentrates, cotton, tobacco, etc., must be included in inventory. Also, supplies acquired for sale or that become a physical part of items held for sale must be included in inventory. Deduct the cost of supplies in the year used or consumed in operations. However, do not include incidental supplies in inventory as these are deductible in the year of purchase.

Livestock held primarily for sale must be included in inventory. In the case of livestock held for draft, breeding, or dairy purposes can either be depreciated or included in inventory. If the farmer is in the business of breeding and raising chinchillas, mink, foxes, or other fur-bearing animals, these animals are livestock for inventory purposes.

Generally, growing crops are not required to be included in inventory. However, if the crop has a reproductive period of more than two years, the farmer may have to capitalize or include in inventory costs associated with the crop.

A farmer should include in inventory all items held for sale, or for use as feed, seed, etc., whether raised or purchased, that are unsold at the end of the year.

The methods of inventory valuation are:

- Cost.
- Lower of cost or market.
- Farm-price method.
- Unit-livestock-price method.

The following applies if a farmer is required to use an accrual method of accounting.

- The uniform capitalization rules apply to all costs of raising a plant, even if the reproductive period of raising a plant is two years or less.
- The costs of animals are subject to the uniform capitalization rules.

Other special methods of accounting apply to the following items:

- Amortization. Casualties. Condemnations. Depletion. Depreciation. Farm business expenses. Farm income. Installment sales. Soil and water conservation expenses.
- Thefts Generally, a farmer can use any combination of cash, accrual, and special methods of accounting if the combination clearly shows his/her income and expenses and s/he uses it consistently. However, the following restrictions apply.
- If one use the cash method for figuring income, s/he must use the cash method for reporting his/her expenses.
- If one use an accrual method for reporting expenses, s/he must use an accrual method for figuring his/her income.

Once an accounting method is set up, one must receive approval from the IRS before s/he can change to another method. A change in accounting method includes a change in:

- overall method, such as from cash to an accrual method, and
- treatment of any material item, such as a change in method of valuing inventory (for example, a change from the farm-price method to the unit-livestock-price method).

Benefits of Accurate Farm Record Keeping

Below are just some of the benefits of keeping farm records accurate and up to date.

- Measure efficiency and progress
- Easier to prepare accounts at year end
- Help plan for GST/HST payments
- Avoid over/under tax payments
- Identify strengths and weaknesses in the farm business
- Help manage changes and improvements in the agribusiness
- Make productivity projections
- Help maximize the expenses you claim and minimize tax burden
- Make it easier to pay employees and creditors and see what is owed
- Simplify process if you want to get a loan or sell the business
- Easier to distribute profits to shareholders (dividends)
- Quicker for partnerships to view profits and losses
- Make it easier should the business get audited by Canadian Revenue Agency

Income Statement: The income statement has the same income and expense categories as the annual cash operating budget — minus the capital-purchases line and with the addition of depreciation expense and interest. Also, instead of a monthly breakdown, the income statement shows total sales (or gross revenue) for a year of operating your farm, along with all the expenses and what's left over in net farm income

Expense Categories The expense categories listed down the left side of the income statement are based on the IRS Schedule F form "Profit and Loss from Farming," and adapted to better this particular operation. Also known as a "chart of accounts," the list of operating expenses that you use for your income statement also can be used for your cash-flow budget and statement. IRS Schedule F Lines include the following:

INCOME STATEMENT

Farm Expenses	Farm Income
➢ Car and truck expenses ➢ Chemicals ➢ Conservation expenses ➢ 15. Custom hire (machine work) ➢ Depreciation and Section 179 expense deduction not claimed elsewhere ➢ Employee benefit t programs ➢ Feed ➢ Fertilizers and lime ➢ Freight and trucking ➢ Gasoline, fuel, and oil ➢ Insurance (other than health) ➢ Interest a mortgage (paid to banks) ➢ Labor hired ➢ Pension and profi t-sharing plans ➢ Rent or lease (see instructions) a. vehicles, machinery, or equipment; b. land, animals, etc. ➢ Repairs and maintenance ➢ Seeds and plants ➢ Storage and warehousing ➢ Supplies 31. Taxes ➢ Utilities ➢ Veterinary, breeding, and medicine ➢ Other expenses (specify):	➢ Sales of livestock and other items you bought for resale ➢ Cost of other basis of livestock or other items reported on line 1 ➢ Subtract line 2 from line 1 ➢ Sale of livestock, produce, grains, and other products you raised ➢ Cooperative distributions ➢ Agricultural program payments ➢ Commodity Credit Corporation (CCC) Loans ➢ Crop insurance proceeds and federal crop disaster payments ➢ Custom hire (machine work) income ➢ Other income, including federal and state gasoline or fuel tax credit or refund ➢ Gross income

Balance Sheet

A balance sheet is a summary of the total financial worth of the farm (assets). This includes your own investment (equity), and what you owe (liabilities). It shows how much money you could keep if the farm were sold. The income statement covers a period of time (a quarter or a year), whereas a balance sheet is a snapshot of your financial position on one single day. It can be any day, but it is often created at the end of the year. A balance sheet does exactly what its name implies: it displays a balanced equation in which assets (left side) = liabilities plus equity (right side). If you reflect on this for a minute, you'll see that the assets include all the items on your farm that have a dollar value. Chances are you borrowed money to buy some of these assets; liabilities are what you still owe your lenders on those assets. Equity is everything you've already paid off and/ or money saved from prior years' net income. If the farm shown in the example below were sold today for $86,075, the farmer could keep about $23,075 depending on market prices. As you can see, assets and liabilities are broken apart into current, intermediate, and long-

term categories. Current assets include cash and other liquid assets, while current liabilities are debts payable within a year (such as an operating-loan balance, a line of credit, and the portion of long-term loan principal that's due this year). Intermediate assets include vehicles and equipment, while intermediate liabilities are debts payable in less than 10 years. Finally, long-term assets include land and buildings, and long-term liabilities are debts payable in 10 or more years. Equity is the amount of wealth you've built — your investment in the farm. Some key information the balance sheet shows includes solvency, liquidity, and your financial progress over time. The e latter is shown by comparing your equity (or net worth) from one year to the next. If you compare two or more annual balance sheets (always created at the same time of year), with luck you will see your equity increasing each year as you pay off your loans. Solvency refers to your ability to pay off all debt if the farm were sold today. We hear a lot about homeowners who are "under water" since the mortgage crisis. In other words, their liabilities are greater than their assets and they have a negative net worth (or equity).This would describe the condition of being insolvent. Liquidity, which refers to your short-term financial well-being, also is extremely important. It tells you whether you have enough money coming in from your business over the next 12 months to pay all your bills due in the same time period. A common guideline is that you should have roughly twice as much in current assets as in current liabilities. To create a balance sheet, start with the blank template in Appendix 4 of this publication. Put today's date at the top of the page. Th is is important because a balance sheet is meant to capture your fi nancial position at a particular moment in time. Next, assemble your data. For the assets side, you'll need a current monthly statement from your farm checking account. You'll also need to take an inventory of the supplies you have on hand, such as seeds, tools, and livestock feed. You also will need to list the cost value minus depreciation (except for land, which doesn't depreciate) of such large, intermediate, and long-term assets as farm buildings, vehicles, and land. For the liabilities side, you'll need statements showing your loan balances. In addition, you'll need to determine the amount of principal due this year. Subtract that amount from your longterm liabilities and put it into current liabilities. Also in current liabilities, include your accrued interest. Th e amount of principal and accrued interest included in current liabilities for each loan should be equal to the annual payment. To determine your equity, subtract total liabilities from total assets.

Example of a Farm Balance Sheet

Capital & Liabilities	Rs.	Assets & Property	Rs.
Current Assets		Current Liabilities (due within 12 months)	
Farm checking	345	Operating loan balance	
Accounts receivable		Line of Credit balance	
Crop and feed inventory	40	Long-term loan principal due this year	1,800
Farm supplies on hand	270		
Other:			
Total Current Assets	655	Total Current Liabilities	1800
Intermediate Assets		**Intermediate Liabilities**	
Farm machinery Tractor		**Loan balance**	
Farm vehicles Truck		loan balance	
Livestock	120	**Others**	
Perennial plants	300		
Total Intermediate Assets	420	Total Intermediate Liabilities	
Long-Term Assets		**Long term liabilities**	
Farmland	85000	**Long term Loan**	61200
Farm buildings		Long-term loan	2
Other: Other			
Total Long-Term Assets 85,000	85000	**Long term liabilities**	
		Total Liabilities	63000
		Equity	23075
Total Assets	86075	Liabilities + Equity	86075

DIFFICULTIES ENCOUNTERED DURING THE IMPLEMENTATION OF AGRICULTURAL ACCOUNTING

Agricultural enterprises possess certain characteristics which separate them from the rest of the enterprises. Those characteristics account for differentiations in accounting organization of agricultural enterprises which, in turn, led to a variety of difficulties throughout accounting process. Those difficulties encountered during the implementation of agricultural accounting are discussed in detail below:

- **Different Sizes of Agricultural Enterprises:** Agricultural enterprises in different sizes necessitate different accounting procedures to be followed at each. Article 54 of Law No. 193 on Income Tax defines separate measurements for different sizes of agricultural activities. It is also indicated that those measurements are considered as a basis for taxation procedure in agricultural enterprises. For instance; actual taxation procedure is to be performed for enterprises with a number of livestock (cattle) above 150 or, for internal water fisheries with a production area (pool, lake, pond or reservoir)larger than 900 m
- **Dependence of Agricultural Enterprises on Seasons and Climate:** Each agricultural production process requires certain specific conditions concerning cultivation, maintenance and harvest. During certain periods of the year farm employees of agricultural enterprises

work intensely in day and night shifts, while during the rest of the year the enterprise remains idle. Therefore, certain difficulties in estimation of costs appear due to some factors such as excess employment, seasonal uncertainties and off-season. Those factors should be considered in implementation of agricultural accounting system (Ersönmez, 2000).

- **Strong Link Among the Farmer Family Members in Agricultural Enterprises:** A great majority of small and middle size agricultural enterprises are operated by farmers and their family member by whom, as much as contribution made to production process, consumption of agricultural goods at a certain level is realized. For that reason, estimation of gain from agricultural production in such enterprises becomes more difficult (Açıl and Köylü, 1971).
- **Sustainability of Versatile Agricultural Activities in Agricultural Enterprises:** According to year 2001 data, approximately 67% of agricultural enterprises in Turkey produce both herbal and animal products between which various value trade-offs emerge. For instance; herbal production process utilizes animal by-product such as manure and animal production process utilizes herbal products and/or by-products such as hay (straw), barley and rye. In other words, in some agricultural enterprises may involve higher internal consumption and value trade-off in comparison with other enterprises. Furthermore, certain agricultural goods throughout production process may yield much higher levels of by-products relative to other enterprises and this leads to difficulties in estimating actual value of costs in agricultural production (DIE, 1991-2001).
- **Abundance of Investments for Future Terms in Agricultural Enterprises:** Certain costs incurred by agricultural enterprises belong to next month's or even next year's budget. In other words, sales revenue from production process that incurs certain costs may belong to next terms or years. For instance; certain costs regarding application of fertilizer, crop dusting, installation of irrigation systems on agricultural fields involve next periods and thus, estimation of gains from agricultural production should consider amortization calculations and use of accounts which terminaly diversifies.
- **Confusion on the Detection of Current (liquid) and Fixed Assets in Agricultural Enterprises:** For instance; beef cattle as a current (liquid) asset is bred to be sold eventually, whereas, dairy cattle or stud cattle as a fixed asset is bred to be utilized in the enterprise for a long period of time. In such a case, it becomes necessary to determine which one is to be considered as fixed asset and which one is current (liquid) asset, so that accounting transactions should be interpreted. In other words, assets of same kind would be either considered as current (liquid) or fixed assets in balance sheet (Doğan, 1975).
- **Excess Payment in Goods in Agricultural Enterprises:** Agricultural enterprises may make payments for a service they utilize either in cash or in goods. In case of borrowing agricultural machineries from other enterprises or individuals, discharge of debts can be made in exchange of harvested agricultural goods by the enterprises. As a result, estimation of both the gain from agricultural production and the amount of payment made in exchange of services utilized becomes more difficult (Aktuğlu, 1972).
- **Insufficient Significance given to Accounting Information System in Agricultural Enterprises:** Agricultural enterprise managers' weak perception of accounting practices is another difficulty. In other words, enterprise managers are unaware of benefits provided by accounting, whereas accounting procures crucial information for an ultimate decision-making process. Since agricultural enterprises are usually of small-scale family businesses, farmers' reluctance on the implementation of accounting system becomes inevitable.

CONCLUSION

Agricultural sector became an indispensable and strategic sector for all societies. Decision-making practices concerning agricultural activities in such an important sector, comprised of operating enterprises and farmers, necessitate the consideration of data obtained from accounting information system. With the instrument of accounting information system, enterprises and farmers are able to estimate agricultural production costs more accurately, productivity measurements are facilitated and problems encountered in agricultural production process are solved.

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