

## Cost accounting for the production of agricultural products

Reception of originals: 04/11/2023  
Release for publication: 07/20/2023

**Heyder G Wannas Alkarawy**

PhD in Accounting, Educational institution: University of Babylon, Address: Al Hillah, Babylon, IRAQ.

E-mail: [bus.heyder.wannas@uobabylon.edu.iq](mailto:bus.heyder.wannas@uobabylon.edu.iq)

**Nasser Jassem Nasser Al-Ssadi**

Director of Oversight and Internal Audit Department, Ministry of Higher Education and Scientific Research, Iraq.

E-mail: [nasseralgamel@yahoo.com](mailto:nasseralgamel@yahoo.com)

### Abstract

The article discusses the issues of evaluating and organizing production cost accounting and regulation (biological costs), as well as documenting the correctness of calculating the cost of products (works, services) in estimating the fair value of agricultural production for the objective calculation of their cost indicators and management of production processes, which is one of the most important synthetic indicators that They allow us to evaluate the efficiency of material use and labor costs. Applying the method of analyzing technical and economic factors, which helps to discover significant deviations. Biological costs in agriculture were evaluated at cost and fair value over the cost of the goods produced and the financial results that were used in one of the companies operating in the agricultural sector. The results of the historical assessment (actual cost) of biological costs of agricultural production show that their cost is artificially reduced, and when these products are sold, the amount of profit and the level of profitability are artificially increased. Also, the costs associated with the production and sale of products (works and services), were grouped according to cost items, which will contribute to improving the informational and administrative aspects of accounting in order to improve the efficiency of agricultural production.

Keywords: Biological costs. Fair value. Initial cost. Production elements. Cost accounting elements.

### 1. Introduction

In the modern conditions of the development of agriculture, there is an objective need to increase the efficiency of accounting operations on the production of agricultural products. Reducing the cost and increasing the profitability of production of products (works and services) in agriculture, on this basis, requires proper organization of accounting and internal control over production costs and adherence to the methodology for calculating the cost of products (works and services). The organization and control of production costs should be understood as a set of measures aimed at the rational combination of their means and methods for the effective implementation of the tasks of the assigned accounting and control operations,

Any regulation of production costs, based on the use of the most rational form and method of control, must ensure receipt of evidence. Documentation necessary for management decision-making by the strategic, tactical and operational nature of the enterprise.

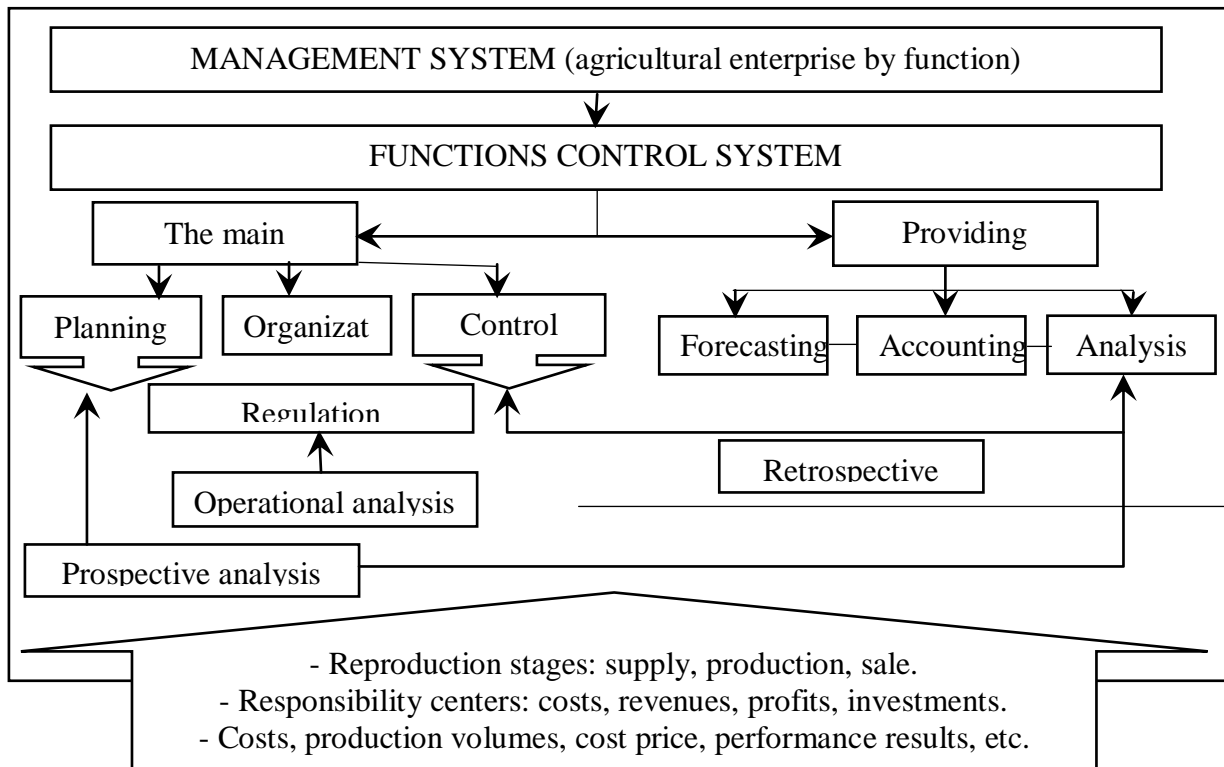
## **2. Literature Review**

### **2.1. Accounting operations and information sources**

Accounting and internal control operations as a dynamic process and system are associated with their content and form using tools and work objects. This process consists of preparatory, methodological, technological and final stages. Galkina (2013) says that the system of accounting and internal control system and its activities can be very effectively organized if you combine it with other information blocks of the enterprise management system, as well as clearly define the relationship of internal control with other departments of the management body (accounting, sales, supply, planning department, economics, etc.) and control purposes in Figure 1.

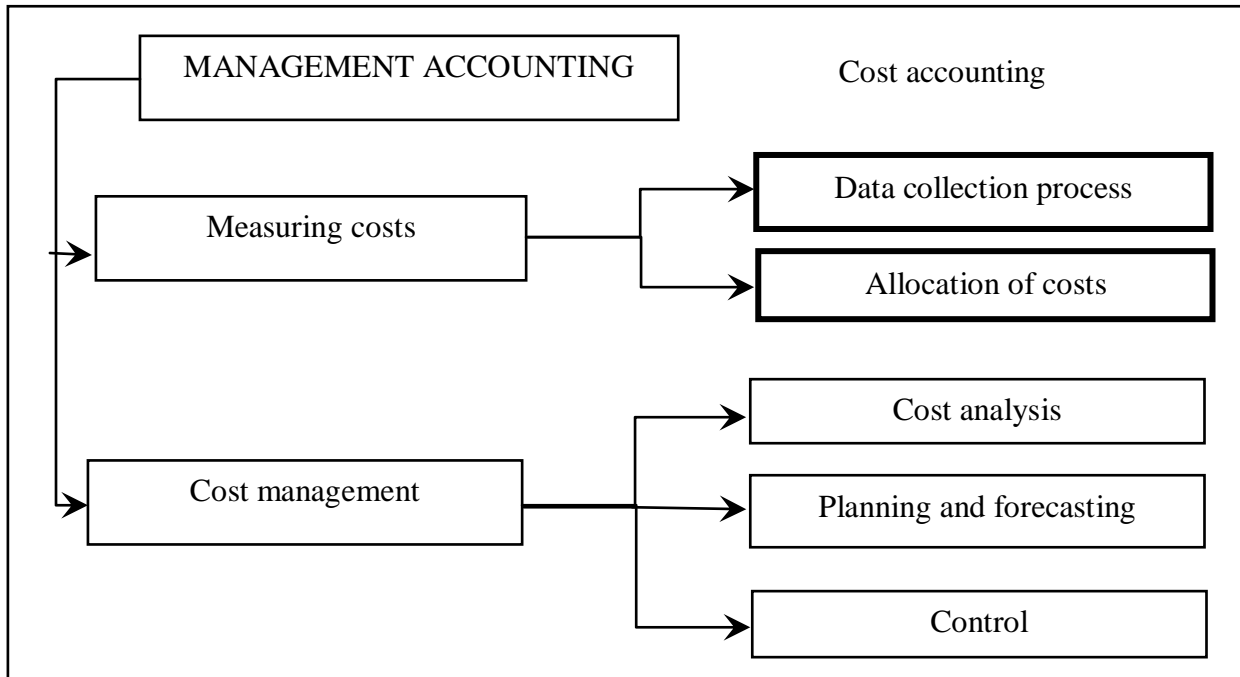
The main source of information on production processes is accounting data and other types of accounting, as well as forecasting, planning and other management functions (Alkarawy, 2020).

On this basis, the information base to achieve the stated goals is the management accounting for costs. In our opinion, management accounting for costs should be understood as a system for collecting, processing and presenting information that ensures the adoption of informed decisions.



**Figure 1: Information structure in the management system of an agricultural enterprise. Adapted from Galkina (2013).**

The management accounting system for costs can be divided, in our opinion, into two main components: the measurement and management of costs as in Figure 2.



**Figure 2: Management cost accounting structure. Adapted from Konkina (2012).**

## 2.2. Reliability of accounting information related to costs

Through information on the biological costs of producing agricultural products in such forms as consumption of seeds, planting materials, fertilizer and seedlings when planting perennials in crop production, consumption of feed and bedding in animal husbandry, biological raw materials (agricultural products) in industrial processing, etc.( Al-Adly, & Al Saabry, 2019; Faeq, 2019).

The objectivity and reliability of information about the total costs of the organization, the cost of production, as well as revenues, expenses and financial results, on indicators for assessing the effectiveness of production activities (productivity, reimbursement, margin, etc.) depends on the appropriate system of biological cost accounting in agricultural organizations (Al-Qaynaei, 2020; Draft, and Dassama, 2017).

### 2.3 The research sample

Through the strategic premise and according to the plans and proposals included in the research, the proposals were formulated in the Iraqi Company for the Production and Marketing of Agricultural Products, which is one of the companies listed in the regular market in the agricultural sector of the Securities Commission in the Republic of Iraq.

Actual costs (biological costs) are artificially reduced, and when selling the company's own products, profit and the level of profitability are artificially increased. So it creates a manifestation of additional well-being, distorts the results of factor analysis and profit distribution, due to the loss of elastic elements in the information system for managing production processes and biological assets. By studying previous market research on this topic, we provided:

-The proposed methodology for evaluating the biological costs of production.

Expendable biological assets.

The research setting is coordinated through theoretical, methodological review, findings, analysis and discussion of results, and finally theoretical and scientific conclusions on the topic of this research.

### 3. Methodology

Different management methods can be applied (based on taking into account actual, standard or budgetary costs) with different models for organizing the internal management of agricultural production (in cooperation at the farm level, leasing) or the formation of financial responsibility centers (Bosch, & Aliberch, 2012).

Accounting in the agricultural production and resource consumption management system assumes the following:

Reflection of the costs of biological resources;

Determining the extent to which actual costs conform to the approved standards, and the reasons for deviation from these standards;

- reliable estimate of the cost of biological resources consumed;
- reasonable distribution of costs of biological resources by accounting and accounting topics;
- monitoring the safety of biological resources in production.

Therefore, to estimate these biological costs in agricultural production, it is more appropriate not to use historical cost (cost price), but to use alternative, more reasonable cost categories, such as the fair value of managing the cost of production and the financial results from its sale (Al-Tamimi, & Hassan, 2012).

So, to evaluate organic fertilizers when they are written off from crop production costs, you can use the formula to calculate the fair value:

$$F_{VM} = A_S M_{VF}$$

Where  $F_{VM}$  - is the fair value of one ton of manure, dinars;

$A_S$  - the content of the/ active substance/ in 1 ton of manure, kg;

$M_{VF}$  - market value of 1 kg of the active substance of complex mineral fertilizers, dinars.

For valuation of feed when the cost of production of animal products is written off, it is proposed to use the following methodology for determining the fair value:

$$F_{VF} = M_V C_{FU}$$

Where  $F_{VF}$  - the fair value of 1 q of the first type of feed, rubles;

$M_V$  - the market value of 1 cent of oats and a ruble;

$C_{FU}$  - content of feed units in 1 of the first type of feed.

Costs of materials for the production of agricultural products are the consumption of seeds, planting material, manure and seedlings when planting perennials in crop production, consumption of feed and litter in animal husbandry, biological raw materials (agricultural products) in processing (industrial) industries, etc., and understand that the cost largely depends on the influence of the main technical and economic factors: increasing the technical level and overall mechanization of production; introduction of advanced production technologies; implementation of measures to improve the fertility of the land; Improving the quality of production resources (agricultural machinery, equipment, livestock, seeds, feed, fertilizers, etc.); introduction of the best high-yielding hybrid varieties of agricultural crops and animal breeds; changes in the prices of material resources and fixed assets; rational use of material and labor resources; The use of progressive forms of organization of work and wages (Abdullah, 2012; Salim, 2017).

Material costs in agriculture include the costs of fuel, mineral fertilizers, plant and animal protection products, depreciation of fixed assets (buildings, structures, agricultural machinery, etc.), various construction costs, repair materials, etc. Biological costs include the costs of feed, bedding, seeds, planting materials and organic fertilizers, as well as the amount of accumulated depreciation of biological assets (working and productive livestock, perennial farms).

Labor costs are labor costs for the production of products (works, services) in units of labor measurement, as well as in monetary value in the form of wages receivable. Financial costs in agriculture are expressed in the form of accounts payable to contractors for work performed in crop production, animal husbandry and other industries, as well as payments to social insurance and the provision of agricultural workers (Al-Saghir, 2011; Safety, Irmadariyani, Agustini, & Supatmoko, 2018)

When carrying out the application of the production cost system, the accountant must investigate the above issues related to cost accounting and the factors that determine the level of cost of products (works, services), namely:

- Organizing cost, planning and developing production budget.
- Study of preliminary documents for actual use in the production process of various resources on the basis of standards and plans for specific types of costs.
- Control the organization and maintenance of analytical and synthetic accounting of production costs strictly in accordance with the items of the account (Lawal, 2017).
- Analysis of the calculation of the standard and actual cost of production.
- Reviewing production costs, and identifying deviations from their standard and planned values according to the places where deviations occur, the reasons and the responsible persons.
- Evaluation of the return on production costs, marginal income and operating profits in the production phase, decision-making, and, as appropriate, regulation of cost rates, production plans and budgets, and some technological processes for crop production, animal husbandry and other industries.

Accounting procedures for agricultural production processes (cycles) according to the proposed sequence and staging (staging) will allow the auditors to identify current deficiencies to the fullest extent (Alborov, 2012).

For a preliminary assessment of the production cost accounting system, useful actions are oral interviews with specialists, production workers and management personnel of the organization and testing by drawing up a special questionnaire

This analytical review, test and interview is to evaluate the production cost accounting system with sufficient confidence and determine whether it will reduce or increase risks, make changes to the system, or increase or decrease the number of upcoming activities.

When checking cost accounting, it is necessary to document the correctness of the calculation of the cost of products (works, services), since the cost of products is one of the most important synthetic indicators that allow us to assess the efficiency of the use of materials and labor

costs in the process of production of products (works, services), profitability, profitability and financial stability of an economic entity As in Table 1.

**Table 1: Verification of the state of accounting for production costs and calculating the cost of agricultural products**

Selection of control objects	Checklist	Notes
<b><i>Control of the validity of the used methods of accounting for costs and calculating the cost of production</i></b>		
<b>Grouping of costs for accounting: by cost elements according to costing items by other characteristics</b>	Testing the control of the correctness of the choice of cost accounting objects	The list of cost items, established in accordance with the Accounting Regulations "Organization Expenses" by the organization independently on the basis of accounting policies, must comply with industry regulations on cost accounting
<b><i>Revision of the legality of including costs in production costs</i></b>		
<b>Composition of expenses by cost elements for compliance with current legislation: material costs, labor costs, social contributions, depreciation of fixed assets, other costs</b>	Checking the legality of including the organization's expenses in production costs	For the recognition in accounting of any expenses incurred by the organization, the following conditions must be met simultaneously: the expense is made in accordance with the contract, the requirements of legislative and regulatory acts. In addition, the following rules must be observed: expenses are subject to recognition in accounting, regardless of the intention to receive proceeds or other income and from the form of expenses (cash, in-kind or other); expenses are recognized in the reporting period in which they occurred
<b>Expenses for tax purposes: material expenses, labor costs the amount of accrued depreciation of fixed assets, other expenses</b>	Checking the correctness of accounting for production costs for tax purposes	Expenses must be: economically justified (justified), expressed in monetary value, documented, aimed at receiving income by the organization; income is recognized in the reporting (tax) period to which they relate, regardless of the time of the actual payment of funds and (or) another form of payment
Selection of control objects	Checklist	Notes
<b><i>Inventory of cost accounting by calculation items</i></b>		
<b>Basic costs and their distribution by calculation objects, including direct and indirect costs</b>	Checking the legality and correctness of the inclusion of expenses in the main	The main costs can be allocated to types of products both directly and indirectly. In case of indirect distribution, it is necessary to establish the validity of the method of indirect distribution of costs in the accounting policy of the organization, to check the correct application of the distribution base, to conduct arithmetic control of calculations of the distribution of costs by type of product
<b><i>Checking Consolidated Production Costs</i></b>		
<b>Organization of analytical accounting of production costs</b>	Checking the organization of analytical accounting of production costs	Analytical accounting registers must be reconciled with each other for mutually corresponding accounts; it is necessary to carry out arithmetic control of the total records in the registers; at the same time, according to the analytical accounting sheets, you should control the costs in the context of costing items

Source: Explanation of authors

When checking the reliability of reporting indicators, for example, indicators of accounting for biological costs, therefore special analytical procedures must be carried out (for example, use the method of value data, method of correlation, regression, indicator method, aggregation method and other economic and statistical methods of analysis) to identify patterns and quantitative relations of the main factors of production and the determination of the quantitative value of individual factors in the formation of the cost of products (works, services).

#### 4. Results and discussion

It is advisable to carry out analytical procedures for cost accounting and calculating the cost of products (works and services) separately for each type of production (crop production, livestock, industrial production, additional production) selectively for individual significant (main) production facilities. This will allow the auditor to draw solid conclusions and make suggestions on the use of identified reserves to grow production and reduce its cost.

When applying the method of analysis of technical and economic factors, significant deviations in the results of the analysis from standard indicators, overspending or underutilization of resources can be detected, which at the same time makes it possible to judge the level of efficiency of production processes.

The next step is a selective analysis of the cost structure of products (business, services).

Such an analysis should be carried out in dynamics (over several reporting periods), which makes it possible to identify trends in changes in the structure of biological cost elements (cost indicators) in order to develop proposals for improving the efficiency of the use of resources of the organization. If significant deviations are detected in the cost structure of the product selected for analysis, the auditor must receive written explanations of the reasons for these deviations from the responsible persons of the organization.

The impact of evaluating biological costs in agriculture at cost and fair value on the cost of the produced goods and the financial results of selling them will be shown using the example of the agricultural production cooperative in "The Iraqi Company for the Production and Marketing of Agricultural Products" in the Republic of Iraq as in Table 2.

**Table 2: A comparative assessment of the cost of production and the financial results of its sale**

Type of agricultural products	The cost price of a single product of production	Deviations (+, -)	Market value of	The financial result from the sale of one of the products when estimating the biological costs of its production	Deviations (+, -)
-------------------------------	--	-------------------	-----------------	--	-------------------

and animals	when estimating the biological costs of producing it				(+, -)					
	At historical cost, dinars.	At an acceptable (fair) cost, dinars			historical cost		An acceptable cost (fair)		In the account of 1 product of production, dinars	In the account of each products sold, thousand. Dinar
					Profit, loss (+, -), dinars	Profitability level (loss percentage),%	Profit, loss (+, -), dinars	Profitability level (loss percentage),%		
Grain corn	200	204	+4	299,6	99,6	50	95,6	46,9	- 4	-16,4
Potato	193,2	196,5	+3,3	321,9	128,7	66,7	125,4	63,8	-3,3	-31,8
Open vegetables	701	704,4	+3,4	352,3	- 348,7	-49,7	-352,1	-49,9	+3,4	+0,7
Milk	600,2	623,5	+23,3	966,3	366,2	61,1	342,8	55,9	-23,3	-786,3
Cattle	3141,1	3252,7	+111,6	5341,2	2200,1	70,1	2088,5	64,2	-111,6	-390,6
<b>Total</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>-1224,4</b>

Source: Explanation of authors

This table shows that as a result of the historical (actual cost) assessment of the biological costs of agricultural production, their cost is artificially reduced, and when these products are sold, the amount of profit and the level of profitability increase artificially. So, in "The Iraqi Company for the Production and Marketing of Agricultural Products", for this reason, when selling the main types of products, the profit from the sale is artificially inflated by **1224,4** thousand dinars. This creates the appearance of additional luxury, distorts the results of factor analysis and profit distribution. The exact amount of profit is not provided in the organization by any means, but only an unreliable abstract value. This situation in the information system for managing production processes and biological assets also leads to wrong management decisions regarding the use of profit as a source of accumulation and consumption. The proposed methodology for evaluating the biological costs of production, such as feed, seeds, bedding, and organic fertilizers from our production, as well as expendable biological assets (draft animals, productive livestock, perennial farms), at an acceptable (fair) cost allows you to take into account the effect of inflation on production cost indicators, calculating its value more logically and obtaining real, objective and reliable indicators of costs and financial results from agricultural activities for their effective management.

In addition, in order to assess the level of effectiveness of the cost accounting system through production processes and the rational use of material resources and labor in these processes, a comparative analysis of actual indicators of the cost of production (selectively crop or livestock

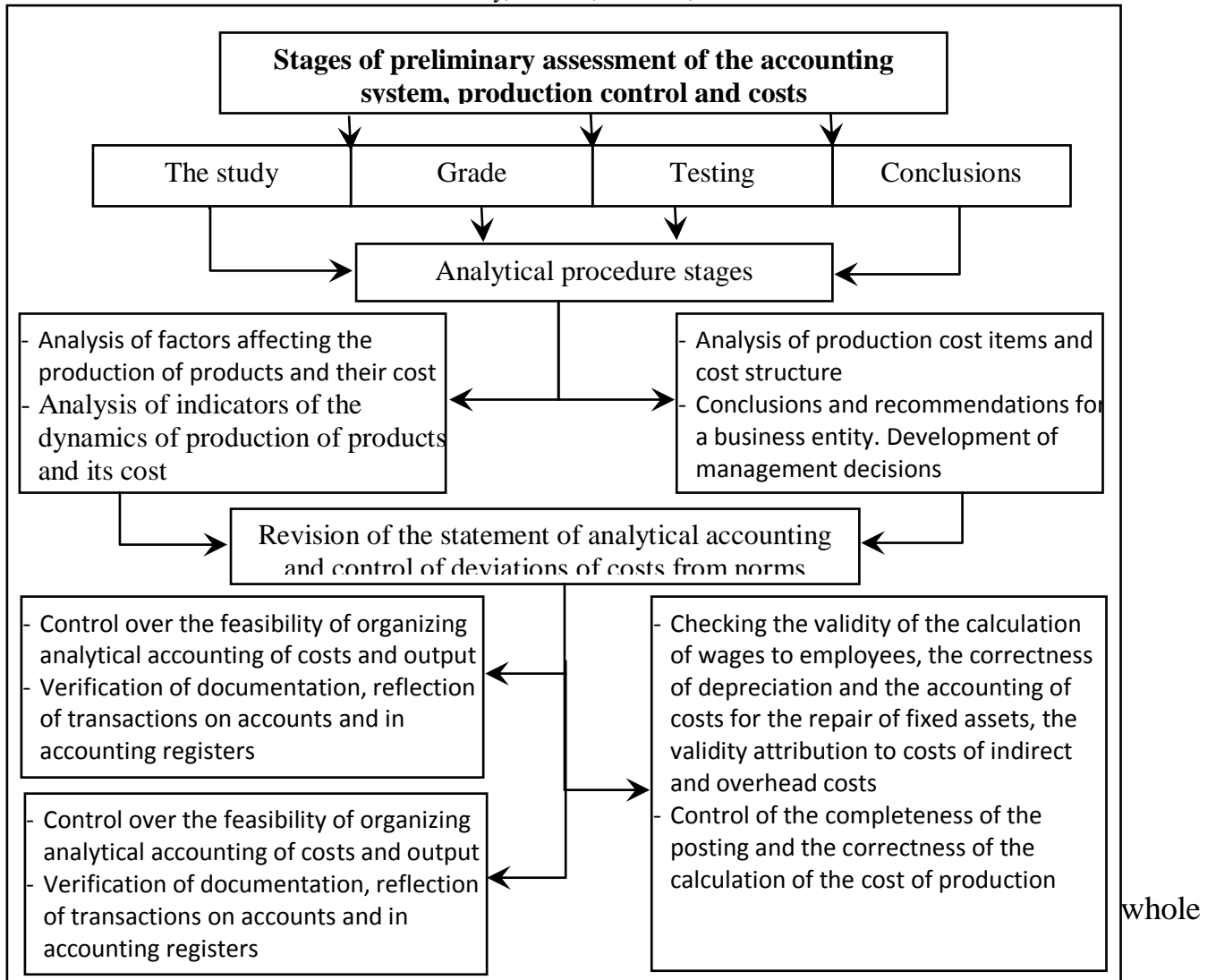
production) should be carried out with planned indicators of the cost of these products. If significant deviations are identified, it is necessary to find out the reasons for this, which to some extent will give an opportunity to evaluate the cost accounting system, in which the planned production cost is determined on the basis of technological maps. In technological maps, the cost of production is calculated by crops and types of livestock, by cost items, taking into account the list of required works, soil and climatic conditions, reasonable consumption rates of material resources and criteria for biological costs of labor and financial resources, taking into account the rational use of land and fixed assets, the use of activities Agricultural, biological, progressive, animal, organizational and managerial.

The master plan of control and revision of documents for cost accounting can be represented as shown in Figure 3.

When controlling the costing system, various methods of production cost analysis should be used, since cost is a complex economic concept that is formed under the influence of many interacting factors. The study of their formation patterns presupposes a deep study of each of them, which is possible only with careful and reliable analysis.

The use of factor analysis of the volume of production allows the auditor to determine which factor had a positive effect on the volume of production, which factor had a negative effect, and which factor is the main and the other secondary.

Based on the control data, it is possible to calculate the influence of factors in the following ways: series substitution, absolute differences.



**Figure 3: Methodology for controlling information accounting from production processes for the agricultural management system.**

Source: Explanation of authors

In the exercise of cost system control, the following methods of production cost analysis can be used: within the economic sector; between farms; cost-price dynamics series analysis; index; statistical aggregation method; link method.

Sectoral analysis of the farm consists of cost breakdown by biological cost elements or computational elements. At the same time, elements of biological costs are distinguished from total cost in cost and relative indicators. This is the first stage of the analysis.

Cost economic analysis is a method of detecting reserves to reduce them by direct comparison of the factors that determine them between firms of the same or different types of production. The size of the reserves for cost reduction is determined mainly by the degree of comparison (homogeneity) of the products of the analyzed farms.

Usually, the analysis is carried out between farms either for individual types of products, or for the cost per dinar (the currency of Iraq) of marketable production. Then the cost components are compared and the reasons for the discrepancies between them are identified. Inter-economic analysis is effective in solving specific issues, since its basis is a direct comparison of cost price and its corresponding factors.

Economic analysis of cost allows you to determine the reasons for its formation and determine the ways of using internal production reserves. One of its drawbacks is that it can only be applied in a limited circle of the economy. Moreover, their results do not allow to make suitable predictions. In the sectoral analysis of cost price, it can be effectively used as part of other methods, in particular, the method of statistical aggregation, correlation analysis.

Cost price dynamics series analysis is a set of statistical techniques used to determine the direction of changes in cost price by adjusting and comparing the statistical series of cost price dynamics and the corresponding factors affecting it, calculating and comparing indicators of growth rates and increase in cost price and their factors.

One of the most important control tasks of the costs system when analyzing the chain of cost-price dynamics is the selection of a base for comparison, including this moment or period of time, starting from the enterprise that has not undergone significant changes. Only under this condition can the production indicators for the reporting year be compared with the indicators of the base year. It is impossible, for example, to study the cost dynamics of the period during which a radical reconstruction of the enterprise occurred or natural disasters occurred. Consideration of indicators of dynamics with a fixed base and a variable base for comparison in relation to them allows you to find out the periods in which the greatest or least cost change occurred.

The choice of time period for analysis depends on the formulation of the problem. A long period of time greatly complicates the analysis due to changes in production conditions, the introduction of scientific and technological progress, the political situation in the country, etc.

As a rule, a period is taken from 3 to 5 years, less often - more than 5 years.

In practice, a number of elementary mathematical techniques are used to determine the tendency to change cost as a dynamic multifactorial process. In particular, a number of formulas help to determine changes in cost depending on the influence of factors affecting it.

The formula is reflected in the change in cost depending on the percentage growth in labor productivity and average wages:

$$\Delta S = \left| \frac{A_{ID} + I_{ID}}{G_{TP}} \right| \times S_W$$

Where  $\Delta S$  is the change in the cost of production under the influence of the ratio of growth in labor productivity and average wages, %;

$A_{ID}$  - increase (or decrease) in the average salary in the reporting period against the baseline, %;

$I_{ID}$  - increase (or decrease) in labor productivity in the reporting period against the baseline, %;

$S_W$  - the share of wages in the cost of production, %;

$G_{IP}$  - growth of labor productivity in the reporting period against the baseline, %.

The influence of labor productivity and average wages on the change in cost is determined by the formulas:

$$\Delta S_{IP} = \frac{(\pm I_{IP} + S_W)}{(100 + I_{IP})}$$

Where  $\Delta S_{IP}$  - the change in the cost of production under the influence of changes in labor productivity, %;

$I_{IP}$  - increase (+) or decrease (-) labor productivity, %.

$$\Delta S_{AW} = \frac{(\pm I_{AW} + S_W)}{(100 + I_{IP})}$$

Where  $\Delta S_{AW}$  - is the change in the cost of production under the influence of changes in average wages, %;

$I_{AW}$  - increase (+) or decrease (-) average wages, %.

One of the main disadvantages of this method of analysis is that it does not reflect in a single mathematical formula the cost price of the influence of the set of factors you determine and does not take into account the interaction of these factors. However, it allows you to get an idea of the processes that occur in production.

The analysis of the primary cost index is a statistical method by which the degree of influence of individual factors on the magnitude of their change is determined.

This method is widely used in the analysis of plan implementation and cost-price dynamics series. An important advantage of the index method over others is the high accuracy of the calculated indicators, which is achieved due to the comparability of the raw data.

In the process of analyzing cost and its elements, we suggest using the following aggregate form of the index:

$$E_F = \frac{\sum C^1 \times FC^1}{\sum FC^1 \times C^0}$$

Where  $E_F$  - is the efficiency of feed use, dinars;

$C^0, C^1$  - respectively, the cost of (1 dinars) of the feeders in the base and reporting years, dinars;

$FC^1$  - Feed consumption in dinars of feed units in the reporting year, dinars.

The indicator of changes in costs of biological feed depending on changes in volume and structure is determined by the formula

$$W_{FSW} = \frac{\sum C^1 \times F^1}{\sum C^0 \times F^0}$$

Where  $W_{FSW}$  - wage fund and the structure of working days, %,

$C^0, C^1$  - respectively, the cost of (1 dinars) of feeders in the base and reporting years, dinars;

$F^0, F^1$  - respectively, feed consumption in dinars, feed units at baseline and reporting years, dinars.

To calculate it, we will use the ratio of indicators:

$$W_{FSW} = [(\sum C^1 \times F^1) : (\sum C^0 \times F^0)] : [(\sum C^1 \times F^1) : (\sum C^0 \times F^0)].$$

Similar formulas can be used to analyze the biological cost components of the cost price.

In this case, the effect of individual elements of biological costs on reducing the total cost is determined by the formula:

$$I_{CO} = \frac{\sum(Ad - 100)}{\sum 100 \times S_{BCY}}$$

Where  $I_{CO}$  is the indicator of cost reduction due to the ninth component of biological costs, %;

$S_{BCY}$  - the specific weight of a particular component of biological costs in the initial cost of the base year, %;

$(Ad - 100)$  - the magnitude of the actual decrease (increase) of this element of biological costs compared to the comparison base, %;

$Ad$  - the index of individual cost items, calculated when comparing dissimilar products.

The cost reduction due to the first component of biological costs is calculated by the formula:

$$I_{CO} = \frac{(I_1 - 100)}{100 \times S_{BCY}}$$

The cost reduction index is calculated as:

$$I_{CO} = \frac{\sum C_n^1 \times F_n^1}{\sum C_n^0 \times F_n^0}$$

Where  $C_n^1$  is the amount of heterogeneous products produced in the reporting year, dinars;  
 $C_n^0$  - the amount of heterogeneous products produced in the base year, dinars;  
 $F_n^1, F_n^0$  - respectively, the value of cost elements in reports and base periods, dinars;  
 $n$  - is the ordinal number of the cost element ( $n = 1, 2, \dots$ ).

Relative wage savings is determined by the formula:

$$I_{wc} = \frac{I_{sop}}{I_{co}}$$

Where  $I_{wc}$  is the index of relative savings in wage costs, or index of wage costs, %;

$I_{sop}$  - an indicator of the average salary of one person per day, calculated by the formula:

$$I_{sop} = \frac{\sum S_1 W_1}{\sum S_0 W_0}$$

Where  $S_0, S_1$  - respectively, the average salary of one person per day in base years and reporting years, dinars;

$W_0, W_1$  - respectively, working days in the base and reporting years;  $I_n$  is an indicator of production per man per day.

It is proposed to analyze the indicator to study the cost price in terms of calculation and in terms of economic elements of biological costs. The advantage of this method over others is that it can be used to analytically express the general change in cost based on its dynamics and structure. At the same time, the index method is limited in covering the factors included in the analysis and does not reflect the influence of one on the other, which is a significant methodological drawback.

Thus, a comparative analysis of the actual and planned production cost structure and identification of significant deviations at the same time will give the auditor the opportunity to judge the effectiveness of controlling production processes on the farm, especially if this analysis is supplemented by a study of each item of biological costs for each unit of output (Ibrahim, 2016)

All costs of agricultural production are accounted for on the basis of primary documents prepared in the established manner.

Therefore, it is necessary to check selectively: the quality of primary accounting documents (accounting statements, invoices, seed consumption works, use of fertilizers, pesticides, etc.) from a legal point of view and the reliability of the reflection in the primary accounting of business transactions; Correctness of keeping cumulative and consolidated records (records of work and biological costs; production reports; personal accounts of relevant types of production, etc.).

Accounting should ensure a fast, reliable and complete flow of information about the organization as a whole and its individual departments (teams, workshops, farms) about the quantity and value of the products received (work performed and services rendered), labor, materials and

cash costs for production and sale of products (Al-Ugaili, 2010; Brito, Ribeiro, Martins, & Lemes, 2014)

In this regard, he must establish: the ability to organize the analytical accounting of all costs and outputs of products (works, services) separately in each type of main production (crop, livestock, industrial production) and auxiliary production (repair and technical production, motor transport, etc.); whether production costs are taken into account in accordance with the specific designations of goods; Are there any facts regarding an unjustified organization of accounting for the items of aggregate cost in connection therewith; Do the data of analytical accounting correspond to the data of synthetic accounting for account “Main production”, sub-accounts (“Crop production”, “Livestock”, “Industrial production”, etc.) under the account “Auxiliary production”, accounts Sub (“Repair workshops”, “Repair of buildings and structures”, “Parking of machines and tractors”, “Motor transport”, etc.); Correct identification of accounts corresponding to business transactions related to the production of goods (works, services).

When checking biological cost accounting, it is necessary to determine: the correctness of the definition of accounting elements in analytical accounting (whether analytical accounts are open for crops, groups of crops, species of animals, groups of animals, etc. in accordance with the approved guidelines for accounting); Validity of building biological costing components.

The costs associated with the production and sale of products (works, services), when planning, accounting and calculating the cost of products (works, services), should be grouped by cost items as in Table 3.

Based on this, the accountant needs to check: whether the accounting of labor costs is maintained in all cases on the basis of the volume of work performed, the production of products in the registration and bills of lading, personal accounts and in other relevant primary documents; whether the labor costs included in the costs of producing products by element always correspond to the data of primary documents or consolidated records; whether the inclusion of payments in kind in the costs of production of products (works, services) is confirmed by a special account; Whether social discounts are taken into account and relate to the corresponding accounting items in proportion to labor costs (general ledger).

**Table 3: Aggregation of costs by account items**

No.	Cost item in agriculture	Type of agricultural production			
		Plant cultivation	Cattle	Industrial production	Auxiliary production
	Fixed Assets Content:				

<b>1</b>	a- petroleum products	X	X	X	X
	b- depreciation (depreciation) of fixed assets	X	X	X	X
	c- Fixed asset repair	X	X	X	X
	d- Wages with deductions for social needs				
<b>2</b>	Seeds and planting materials	X			
<b>3</b>	Mineral and organic fertilizers	X			
<b>4</b>	Plant and animal protection products	X	X		
<b>5</b>	Feeding		X		X
<b>6</b>	Raw materials for processing			X	
<b>7</b>	Work pay with deductions for social needs	X	X	X	X
<b>8</b>	Works and services	X	X	X	X
<b>9</b>	Production organization and management	X	X	X	X
<b>10</b>	More costs	X	X	X	X

*Notice. The "X" represents the amount expressed in monetary terms.*

When checking the consumption of material resources (feed, seeds, fertilizers, oil products, spare parts, electricity, etc.), the accountant and auditor must remember that the main tasks of calculating these values are to objectively reflect the biological costs of production, to ensure control over their rational use and to determine Reserves provide resources. Therefore, it is necessary to determine: whether the accounting of inventories and the values used for the production of products are confirmed by the intake limit lists, invoices and other documents; Whether the consumption of inventory items in production in excess of the established (standard) limit is confirmed by documents signed by the head of the organization or persons authorized by him.

Documents to write off inventory items should be prepared by those responsible for their correct use in production.

Documents confirming the consumption of feed, seeds, plant and animal protection products, fertilizers, chemical and biological additives (stimulants) during the processing of products, etc.

Selective recalculation should be applied to the correctness of calculating the cost of main and related products and by-products of different industries. The last stage of control should be tracking the correctness of the correspondence of accounts for calculating biological costs of production, output (work performance, services), posting of returnable waste, writing off arithmetic differences, checking the correspondence of analytical accounting records in personal accounts (production reports) with entries in Journal, general ledger and reporting data.

## 5. Conclusion

Based on the results of the audit, the accountant must draw reasonable conclusions and make proposals to eliminate identified errors in the accounting of biological and other costs of agricultural production (works and services), and recommend the Department of Economic Affairs. An entity introducing more progressive methods and systems for production and management accounting for costs in the main and auxiliary industries that will contribute to improving the information and managerial aspects of accounting. In addition, the reviewer identifies proposals for the use of identified reserves in order to improve the efficiency of agricultural production.

All this will make it possible to calculate the cost in planning and management accounting at the end of each stage (cycle) of the period of the technological process of production, allowing you to quickly analyze and manage production processes according to the management model “costs - outputs - result”, i.e. variable technological costs, marginal income and profits In the production stage of the total product circulation. In addition, the proposed models also make it possible to determine the equal volume of production, the profitability threshold and the planning of the value of sales prices for products, taking into account the internal production capabilities, the needs of liquid working capital and external conditions of the overall sphere, including the market position in accordance with the sustainable development strategy of the organization.

## 6. References

AL-TAMIMI, J. H.; HASSAN K. J. Comparison between the International Standard on Agricultural Activity No. 41 and the Iraqi Standard on Agricultural Activity No. 11, Analytical Study. *Journal of Economic Sciences*. V. 8, n. 31, p. 171-188. 2012.  
<https://www.iasj.net/iasj/download/0ae33e15ad6f86c3>

IBRAHIM, F. A. Z. A comparative study of the application of the ABCM activity-based cost management approach. *Educational Administration Journal*. 11, p. 113-143. 2016.  
[https://emj.journals.ekb.eg/article\\_92535\\_c071ea326110eb3b9aeafcc8bf1e6946.pdf](https://emj.journals.ekb.eg/article_92535_c071ea326110eb3b9aeafcc8bf1e6946.pdf)

ABDULLAH A. M. The importance of cost accounting in government units and their role in monitoring their performance. *Journal of Management and Economics*. v. 35, n. 92, p. 26-36. 2012.  
[https://www.researchgate.net/profile/Ali-Alsandy-2/publication/338035780\\_The\\_importance\\_of\\_cost\\_accounting\\_in\\_government\\_units\\_and\\_their\\_role](https://www.researchgate.net/profile/Ali-Alsandy-2/publication/338035780_The_importance_of_cost_accounting_in_government_units_and_their_role)

[e in performance control/links/5dfafd28a6fdcc28372bec8c/The-importance-of-cost-accounting-in-government-units-and-their-role-in-performance-control.pdf](https://www.researchgate.net/publication/358428881)

ALBOROV, R. Improvement of management accounting in the system of internal management of agricultural production. *The economy of agricultural and processing enterprises*. v. 2, p. 46-50. 2012.

AL-ADLY M. M.; AL SAABRY I., Fair Value as a Basis for Valuation of Biological Assets (Applied Study in the Al kafeel Co. For General Investments). *Journal of University of Babylon for Pure and Applied Sciences*. v. 27, n. 6, p. 135-160. 2019. [https://www.journalofbabylon.com > download](https://www.journalofbabylon.com/download)

ALKARAWY, H. G W. Optimal evaluation metrics to select the best offers on an outsourced basis. *Custos e @gronegocio on line*. v. 16, n. 4, p. 348-369, 2020. <http://www.custoseagronegocioonline.com.br/cinquenta%20e%20nove.html>

AL-QAYNAEI E. Al., Accounting for the agricultural sector between international accounting standards and the accounting system financial. *Journal of Research and Commercial Studies*. v. 4, n. 2, p.147-172. 2020. <https://www.asjp.cerist.dz>

AL-SAGHIR, M. Al. A proposed framework for the integration between the entrance to the cost of specifications and the accounting of resource consumption for the purposes of supporting competitiveness in the agricultural sector. *Journal of Contemporary Business Research*. v. 25, n. 1, 2011.

AL-UGAILI, O. K. Economic analysis of production costs for wheat crop in Rashidiya. *Journal of Administration and Economics*. v. 79, p. 1-17. 2010. <https://www.iasj.net/iasj/download/8ffc7582e437c83c>

BRITO, E.; RIBEIRO, M. D. S.; MARTINS, V. A.; LEMES, S. Fair Value application to biological assets and agricultural produce in livestock farming. *Asian Journal of Business and Management Sciences*. v. 3, n. 6, p.21-32. 2014. <https://www.cabdirect.org/cabdirect/abstract/20143305553>

BOSCH, JOSEP; ALIBERCH, A. S. A comparative study of difficulties in accounting preparation and judgement in agriculture using fair value and historical cost for biological assets valuation. *Revista de Contabilidad*, v. 15, n. 1, p. 109-142. 2012. <https://www.sciencedirect.com/science/article/pii/S1138489112700407>

DRAFT, S.; DASSAMA, M. Obstacles to fair value measurement in biological asset accounting. *An-Najah University Journal of Research (Human Sciences)*. v. 31, p. 65-71. 2017.

FAEQ, M. ET AL. The Influence of External Contingency Factors and Activity-Based Costing Implementation on Organizational Performance. *Journal of Management*. v. 55. 2019. [https://jsst.journals.ekb.eg/article\\_83812\\_0e41054174e8e6f78ba37cc464e0929b.pdf](https://jsst.journals.ekb.eg/article_83812_0e41054174e8e6f78ba37cc464e0929b.pdf)

GALKINA, E.V. Modern model of internal control in corporate management. *Journal of Russian Entrepreneurship*. No. v. 1, n. 223, p. 55-60, 2013. <https://cyberleninka.ru/article/n/sovremennaya-model-vnutrennego-kontrolya-v-korporativnom-menedzhmente>

KONKINA, B. C. foundations of the formation of cost management system in agricultural enterprises. *Bulletin of Altai State Agrarian University* No. v. 4, n. 90, 2012. <https://cyberleninka.ru/article/n/osnovy-formirovaniya-sistemy-upravleniya-zatratami-na-selskohozyaystvennyh-predpriyatiyah>

LAWAL, B. Effect of Cost Control and Cost Reduction Techniques in Organizational Performance. *International Business and Management*. v. 14, n. 3, p. 19-26. 2017. <https://core.ac.uk/download/pdf/236300505.pdf>

SALIM, Z., M. Analysis of the problems of measurement and accounting disclosure of the biological assets of agricultural activity in accordance with International Accounting Standard No. 41. *Journal of Financial and Business Research*. v. 18, n. 4, p. 50-77. 2017. <https://jsst.journals.ekb.eg>

SAYEKTI, Y.; IRMADARIYANI, R.; AGUSTINI, A. T.; SUPATMOKO, D. The Implementation of Accounting Standards for Agriculture (Psak 69): The Analysis of Companies' Readiness. *International Journal of Accounting*, v. 6, n. 2, p. 23-28. 2018. <https://repository.unej.ac.id/bitstream/handle/123456789/89366/F.%20EB%20Jurnal%20Yosefa%20S%20The%20Implementation%20of%20Accounting%20Standards.pdf?sequence=1&isAllowed=y>

## 7. Disclosures

Authors declare no conflict of interest.