Management accounting in the agricultural enterprise information system

Kobiljon Hushvakhtzoda*

Tajik National University, Rudaki Avenue, 17, Dushanbe, 734025, Republic of Tajikistan

Abstract. The complexity of the relationship of modern agricultural enterprise in connection with the change in their financial and economic situation puts forward new requirements for the connection of agricultural enterprises with the information support of the activity management process. Modern conditions of the external environment of agricultural enterprises and the aggravation of price competition complicate the issue of effective management of agricultural enterprises. This problem manifests itself during a period of crisis in the national economy, especially in the activities of industrial agricultural enterprises, and they are forced to look for other ways to maintain their positions in the market. In the agricultural enterprise management system, management decisions are made based on reliable and timely information through the use of modern management, accounting, planning, analysis and control tools. Points of view on the interpretation of management accounting vary depending on the development of economic systems and the impact of economic globalization processes. The modern view of management accounting did not arise immediately, many scientists and researchers in the study of historical periods are trying to find out the main foundations and conditions for its formation. Therefore, this article clearly studies management accounting in the information system of agricultural enterprise.

1 Introduction

In the conditions of market relations, it is necessary to make timely and immediate management decisions to increase the stability of the agricultural enterprise in a competitive environment and generate income.

In the theory of decision making, D. Duncan discovered two directions and a methodological approach. In the first direction, the rational principle leads to a revision of rational and systemic decision-making processes that justify the correctness of the set goals (norm, increase in profit or productivity function), comparison of strategic opportunities, formation of alternative strategies, selection and implementation of one of them.

The second approach assumes that rational action also has its limits. Making managerial decisions is a relatively rational process, since it depends on the influence of subjects. In fact, there is no complete information about all alternative solutions. This led to the emergence of a theory that facilitates gradual search and analysis. In it, based on uncertainty, step by step

* Corresponding author: firdavs300@mail.ru

they move towards what is defined and accepted. They also use a limited sequential comparison method in which they are based on goals that are never fully understood. The subject is constantly looking for random alternative solutions and achieves satisfactory results rather than maximum end results. In logical incriminalism, it is assumed that goal setting cannot be completely perfect, and at the same time, in order to make practical decisions during strategic changes in the organizational structure, it is assumed that the manager processes several options for decisions. This creates the need to obtain and process additional information about the subjects of management [1].

Nizamov S.F. notes that «an interconnected integration system that has its own organized elements (subsystems) and provides the process of converting accounting and analytical information in order to make operational, tactical, strategic and problem management decisions that help managers perform their functions is necessary» [2].

Also M.Yu. Babaev said that «an internal information system that uses financial and non-financial indicators in order to provide managers with the necessary information to make effective tactical and strategic management decisions» [3].

K. Arrow rejects the popular reflection of the behavior of market entities under the influence of price changes caused by non-market factors, i.e. information [4].

Information is the required information about something, the value of economic indicators, the object of storage, processing and transmission, and is used in the processes of analysis and development of economic management decisions. The concept of information as communication, in the process of which uncertainty is eliminated and the complexity of the structure, the possibility of choosing its features and its significance are measured. As an economic resource, all economic descriptions apply to it: price, costs, profit, offer for exchange, demand for payment. It is used directly because of its structure. When performing functions related to the provision of information for making accounting decisions, in the process of control and analysis, on the one hand, labor resources are expended, and on the other hand, labor resources. K. Marx notes that accounting as a means of control and conclusion of production processes becomes more necessary if the production process is carried out on a social scale and loses its individual characteristics. Accounting costs are reduced along with the accumulation of products and bringing it to public accounts [5].

V. Knorring and J. Ryzhenkova defined information as a set of data about changes that occur in the operating system and the environment and reduce the level of our understanding due to the uncertainty of a particular object. Information does not decrease, it constantly increases, improves, contributes to the creation of new resources and their emergence. The main characteristics of information is the ability to eliminate uncertainty, but the acquisition of knowledge allows you to see new opportunities depending on previous situations, and therefore increases its level and significance [6].

J. Stiglitz notes that numerous imperfections of reality (market, information, competition, adjustment costs) reflect the problems of the modern economy. Incomplete information not only changes the description of the function and purpose of the agricultural agricultural enterprise, but also changes the balance of the macroeconomic structure [7].

K.Kh. Barfiev notes that a special role in ensuring the effective functioning of the agricultural enterprise management system is played by information resources manifested through accounting and analytical systems, which is created in accordance with the requirements of the regulatory, organizational, production and financial activities of the agricultural enterprise. The potential for economic development, production management and increasing its efficiency depends on the reliability and timeliness of the information provided. In modern conditions of agricultural production, sufficient and reliable, as well as operational information is often lacking, which deprives the management of an economic entity from owning specific real guidelines in management activities, which ultimately leads to significant negative consequences [8].

2 Results

We consider the conclusions of researchers about the impossibility of making decisions with complete certainty to be correct, since the alternatives are always uncertain and the subject cannot have complete knowledge, therefore irrationality and risk are inevitable in the economy. The information is incomplete and often incomplete for decision making. But at the same time, it is also true that it is impossible to achieve development and progress without striving for rationality. To achieve the best decisions, it is necessary to use an informational approach that orients managers to search for complete information and, when making decisions, to respond to the information of the subject. And this is certainly reasonable.

L. Perekrestova shares the informational approach to the manifestations of uncertainty and future manifestations of reality: lack of information, its deficit and asymmetry of information [9].

J. Stiglitz notes that the absence and incompleteness of information, as well as the possibility of their passage in the aggregate, are solved by several methods: targeted search, scientific and technical work, and consulting. The modern development of modern competitive mechanisms that control the movement of capital is influenced by information asymmetry. It differs from rational models of agents' expectations and allows the subject to determine the importance of variables and act in such a way as to minimize the effectiveness of public policy [10].

With the growth of uncertainty, the problems of transactional management increase, so the structuring of information by objects increases the completeness of information in the management of competitiveness factors. Transaction costs become the smallest when choosing a relatively rational decision of management decisions that are justified by analytical information. Comprehensive and continuous control, quantitative and qualitative description, analysis of real operations, continuous and reasonable management accounting should be provided by the information system of the agricultural enterprise.

An information system is a system for collecting, processing, storing, transmitting, updating data using various information technologies. Rapid changes in this area affect the description of the competition of market participants. The development of an information system depends on the organizational and production structure, the degree of centralization and the level of development of infrastructure communication links, on the choice of methods of control and management, on the understanding of subjects at all levels, on the benefits and results obtained. Functional areas of substructures, the need to develop quality standards for technological operations and products, training employees in control methods affect the elements of the information system.

The development of techniques and technologies, changes in management requirements over time based on information imply different types of management – influencing, leading and coordinating. The impact of management entities on trends and the need to reduce costs is described as a type of impact, and the planning and use of solutions that increase the efficiency of economic activity reflects proactive management. As for the type of approval, this is a working consultation on doing business and clarifying the requirements for the implementation of technological production. In a market system, the information system must ensure the use of all types of perception in agricultural enterprises.

In the agricultural sector, the structure of the information system of an agricultural enterprise is affected by natural, biological and other types of resources, seasonality, the need for work in progress in some industries, the duration of production and sales cycles, and failures in the coordination of activities.

Due to the complexity of internal and external relations, currency devaluation, non-payments, agricultural organizations are forced to change the strategy and tactics of their decisions and look for other sources of financing for economic activities, which creates a

problem for information support of decision-making processes. Information about the state, development and dynamics of control objects in various analytical groups, which give a complete description of the object, make it possible to identify development trends, identify trends and make timely management decisions. For the practical activities of economic entities, information of a normative description, planned and up-to-date, is required.

S. Kalikhman and N. Khorkova defined the decentralization of decision-making processes and the assignment of responsibility to lower levels, taking into account the preservation of the current management and their control over all business infrastructures and service units, as one of the effective measures to improve agricultural enterprise management [11, p.117].

Structural changes in the information system are explained by the need to provide analytical and multidimensional data for managerial decision-making processes. V. Paly and V. Shirobokov note that the financial position of an organization is characterized by such elements as assets, liabilities and capital, and they are the result of economic activity – income and expenses. Information about them is formed in all accounting subsystems, which leads to the leading information function of accounting [12].

Qualitative changes in agricultural enterprise management in the world experience of the second half of the twentieth century led to the division of information and accounting systems into two interconnected parts. In some countries, management under conditions of uncertainty and risk in the external environment has led to the differentiation of the unified accounting system at agricultural enterprise into managerial and financial accounting. All forms of direct technical and statistical accounting are also involved in the implementation of managerial and coordinating functions and must be integrated into a single agricultural enterprise management information system. General methods of accounting, standardization, planning, analysis, control and management, differentiated by purpose and strategic and direct management issues, make it possible to effectively perform managerial and marketing functions.

T. Rogulenko revealed the importance of internal audit in the organization of legal relations and compliance with the rules of economic activity at the agricultural enterprise. There are different rules for the relationship between the internal control system and internal audit. Some consider internal control as an integral part of the overall system of internal control, others distinguish between them. However, all authors are of the opinion that it should be independent in checking the activities of the company, and its main task is to help its participants perform their functions effectively [13]. The author proposed the following structure of the information system of an agricultural organization (Figure 1).

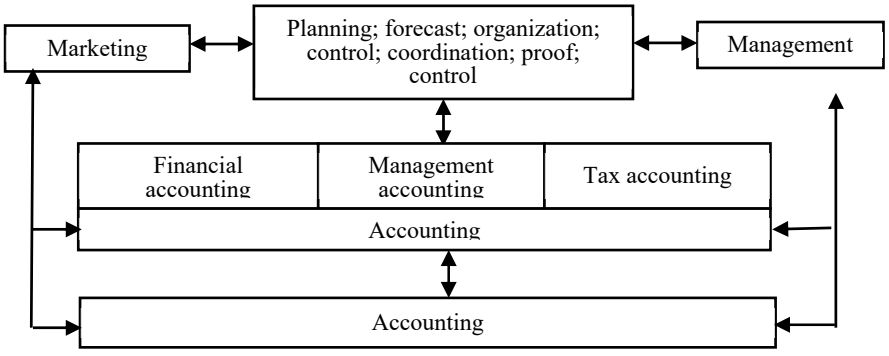

Fig. 1. The structure of the information system of the agricultural enterprise

Strategic management requires forecasting the demand for products, planning measures to stimulate it and directions for product diversification. This requires information about the market, consumers, the development of new production methods and technologies, and the

priorities of people's needs. Making decisions related to the volume of production, the development of new sales markets, the policy of pricing strategies in different markets, various forms of sales and calculations, must be justified by accurate and complete information.

In competitiveness management, the author suggests that the general idea of rationality in setting the organization's goals is to achieve them and ensure the competitiveness of production, which makes it possible to find the right solution, and one of the tools of the information approach for its implementation is the activity of the management accounting system.

Management accounting is a system of economic information about the costs and income of various management objects and is an effective tool for operational and strategic management of production and sales of products. Information about the factors affecting the cost and volume of production and sales of products, the performance of structural infrastructures, the amount of income, makes it possible to make decisions and manage production processes. An accurate description and forecasting of information ensures the adoption of rational management decisions aimed at obtaining high economic results and achieving the strategic and current goals of the agricultural enterprise.

The system for collecting, processing and interpreting information in management accounting for management objects must meet the following requirements: objectivity, reliability, efficiency; timely, analytical, rigorous, useful, continuous, multidimensional, closed and targeted.

Compliance with the principles of accounting in the management accounting system allows the use of integrated accounting models for agricultural business in agricultural enterprise.

Although there are different approaches to the classification of the management accounting system, the general approach is that the main object, costs, is taken as the basis. E. Mizikovsky and T. Karpova, according to the prevalence of information coverage of activities, the organizational structure of an agricultural enterprise, types of products, they distinguish integral systems consisting of individual elements and having target areas, systemic and problematic accounting [14].

R. Anthony, C. Horngren, K. Drury defined the budgeting or budgeting system as a tool for planning, coordination, accounting and control by responsibility centers [15].

J. Shank and V. Govindarajan divide the management accounting system into the following structural elements: production, regulatory and strategic [16].

Based on the study of the theory and practice of management accounting in the work of domestic and foreign economists, a conclusion was made about the management accounting system (Table 1).

Table 1. Classification of management accounting system.

Classification symbols of the management accounting system			
Breadth of coverage	The level of communication between management and financial accounting	Description and purpose of the data	
1.Systematic accounting. 2.Problematic accounting. 3.Budgeting systems 4.Production accounting. 5.Common management accounting. 6.Accounting for strategic management	1.Integrated accounting system (direct and reciprocal communication between management and financial accounting).	1.Information about the past. 2.Current information. 3.Forward-looking statements	1.Data for control. 2.Information for immediate management. 3.Information for forecasting and planning.

	2.Accounting system of autonomous management		4.Information for strategic management of the organization

Source: compiled by the author

According to the level of types of accounting links, integrating and autonomous systems are also distinguished.

Taking into account the main object of accounting, i.e. costs, the author described management accounting in terms of the following indicators (Table 2).

Table 2. Description of management accounting by method of accounting and cost control.

Classification symbols			
Objects of cost accounting	Complete inclusion of costs in the original cost	Calculation of the original cost of the product	Types of control
1.Materials and cost elements. 2.Locations of expenses. 3.Cost centers. Bearers of expenses.	1.Full cost accounting. 2.Calculation of variable costs. 3.Calculation of standard costs (normative)	1.Determining the real full cost. 2.Determining the original limited value. 3.Determining the real value and trends from the normative system.	1.Immediate control. 2.Current control. 3.Future control. Audit and internal control system

Source: compiled by the author

According to the description and intended purpose, information is allocated for the operational and strategic management of the organization. To make the right decisions for the future, you need detailed information about expenses and expected income, and this requires information about past expenses.

The actual cost of production is determined in the production accounting system and is used to estimate stocks of finished products and profits. Opportunities for choosing alternative solutions and planning become wider with a full description of costs and revenues. K. Drury proposes to systematize costs according to the following scheme:

- the dynamics of costs in relation to the volume of production;
- future costs that are taken into account or not taken into account in the calculation and evaluation;
- sunk costs or costs of past periods;
- expenses on liabilities;
- marginal and additional costs and revenues. This allows a more complete description of the true costs [17].

The execution of management and marketing issues is implemented in such structural elements of management accounting: production, management and strategic accounting. Internal processes depend on the efforts of employees to maximize the difference between buying and selling (value added). J. Shank and V. Govindarajan believe that from the standpoint of strategic priorities, the concept of added value does not make it possible to use the relationship between suppliers in their favor due to temporary shutdown and cost analysis from the moment of purchase [18].

In management accounting, large agricultural commercial agricultural enterprise collect information about competitors, realize the state of the competitive environment, predict the structure of the balance sheet in terms of the ratio of assets and liabilities. In strategic cost accounting, companies also take into account the fact that all factors are variable in the long run. The development of value chains ensures the stability of the agricultural enterprise when working with suppliers. The strategic aspect of management accounting is its high level.

An agricultural enterprise cannot have high-level elements of an accounting system if production accounting is not organized at the proper level. Strengthening the links between technical, operational and technological accounting in the internal environment allows you to manage processes in accordance with cost standards and improve the quality of work and products. In this case, accounting types are integrated into the accounting system.

The informational control of the state plan ensured that production was accounted for at agricultural enterprise before the market reforms. In the economic market system, the influence of situational factors hides (covers) information for direct strategic management. In this case, production accounting becomes one of the elements of the management accounting system, which improves the quality of its information content.

The goal of ensuring the competitiveness of products at the same time gives rise to the need to predict the future of the agricultural enterprise. Production cost management, quality management and marketing increase the importance of economic data and financial analysis in terms of management objects. It makes it possible to evaluate the results of the work of structural divisions and move to new levels of economic activity of the agricultural enterprise. The adoption of rational management decisions is based on a direct comparison of costs and detailed results of management objects and activities.

3 Discussion

It is necessary to build a multi-level information system of the organization, and effective management of the organization is impossible without a management accounting system. Evaluation of the current system for collecting, processing information of the agricultural enterprise and the rate of consumption of seeds, feed and other resources is the initial period in its organization.

When organizing all levels of the information system, especially in production accounting, the identification of cost objects is considered the most basic. P. Bezrukikh and N. Kondrakov note that the objects of cost accounting are the places of their occurrence, that is, individual workshops, production sites and other structural units, where the costs are grouped according to the procurement of products, the performance of work, the provision of services, and the results of the activities of individual structural units are determined. divisions [19].

The classification of costs at the place of their occurrence makes it possible to control, take immediate action on costs, ensure reliable sorting by cost-effective products, and monitor the performance of each department. They solve the problems of correctly calculating the initial cost of production, trends, slow and leading positions, and other issues (accounting) of cost centers.

As we have already mentioned in the previous paragraphs, responsibility centers, depending on the organizational and structural form of the agricultural enterprise, are either combined according to functional, regional and other indicators, or divided into parts according to the similarity of costs.

Under the conditions of computerization, information can be generated for all types of cost objects, and at the same time expand the capabilities of the agricultural enterprise management system and different models can be used. The centralized control system uses different models, with different principles, depending on the cost centers, where it becomes more difficult to determine the direct control of the causes of trends.

From our point of view, analytical accounting and legal models are more suitable for the implementation of an accounting system in economic market conditions. In them, the main objects are cost centers. The choice of the center, the definition of data collection indicators for each center must meet the requirements of management. In general, the model has the following form (Figure 2).

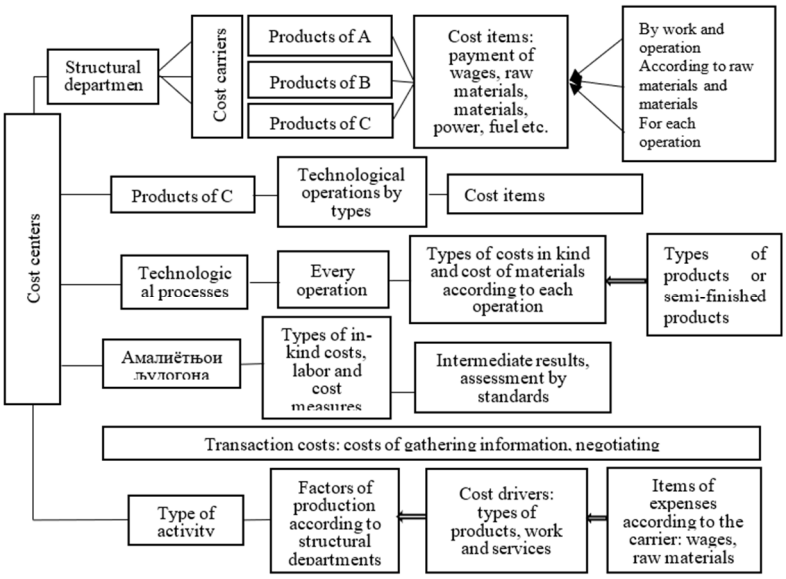

Fig. 2. Model of analytical accounting by cost centers.

Cost centers independently reflect the information subsystem necessary for managing indicators, which can be supplemented with new conditions and taking into account changes in management issues over time and without losing data from previously implemented indicators.

4 Conclusion

The author defines cost centers as detailed groups that are considered relatively important for the organization of management objects. Their use ensures the high-quality performance of managerial functions and, in turn, opens up opportunities for strategic cost management. In agricultural production, cost centers for agricultural industries should be allocated to the value chains in the production of each product. This makes it possible to quickly determine the trends in the norms and standards for the consumption of each type of resource in technological operations, analyze the performance of work on production cycles and carry out their regulation.

Determining costs in separate centers and storing them together in one element (segment) of the information system of transaction costs reveals their content in the elements and subjects of the transaction, evaluates the results of costs, expands the possibilities for planning the development of the enterprise in the areas of cooperation and integration with other subjects.

References

1. D. W. Duncan, *Lessons from the founders of management and management practice*, Translation from Russian into Tajik (Delo, M., 1996), pp. 65-71
2. S. F. Nizamov, A. A. Mirzoaliev, S. Kh. Rahimov, *Management accounting* (Dushanbe, 2017)
3. M. U. Boboev, *Abstract of the thesis. dis. for the competition of can. economy Sciences. MSU named after M.V. Lomonosov* (Moscow, 2009)

4. V. D. Kamaev, Economic theory **640**, (2001)
5. K. Marx, Capital **1**, 891 (1998)
6. V. I. Knorring, Theory, practice and art of management, 529, (2001)
7. J. Yu. Stiglitz, Mirovaya ekonomika i mezhdunarodnye otnosheniya **5-6**, 54-72 (1997)
8. K. Kh. Barfiev, *Competitiveness of agricultural production and its accounting and analytical foundations: theory, methodology, organization*. Based on the materials of the Republic of Tajikistan. Kyrgyz National University. Zh. Balasagyna, Kyrgyz-Russian (Slavonic) University named after. B.N. Yeltsin. Bishkek (2019)
9. L. V. Perekrestova, Management of local agro-industrial systems of market orientation based on relevant information, 39 (1998)
10. S. Kalikhman, N. Khorkova, Problems of the theory and practice of management **4** 114-119 (2020)
11. V. F. Paly, Problems of theory and practice of management **3**, 86-91 (2000)
12. T. M. Rogulenko, *Organizational and economic conditions for the implementation of property interests of agricultural producers* (Vnitush, 1997)
13. T. P. Karpova, Fundamentals of management accounting, 392 (1997)
14. R. Anthony, J. Rice, Accounting: situation and examples, Translation from English into Russian. Edition **2**, 560 (2001)
15. Ch. T. Horngren, J. Foster, Accounting: management aspect, translation from English into Russian, 416 (1995)
16. J. Shank, V. Govindarajan, *Strategic cost management, new methods of increasing competitiveness* (St. Petersburg, 2019)
17. K. Drury, Introduction to management and production accounting, translation from English into Russian. Edition **2**, 560 (1994)
18. P. S. Bezrukikh, N. P. Kondrakov, V. F. Paliy, Accounting **576** (2016)
19. F. P. Arabov, U. A. Sharipov, T. O. Samiev, E. Sh. Mirzoeva, K. A. Sodikov, H. F. Sadiev, IOP Conf. Ser.: Earth Environ. Sci. **839** 022072 (2021)
20. K. A. Sodikov, F. P. Arabov, Digitalization is a key factor in the sustainable development of agriculture in Tajikistan in Materials of the International Scientific and Practical Conference Integration of Sciences Krasnodar, 85-90. July 2021, Krasnodar, Russia, (2021)
21. Kh. R. Isaynov, F. P. Arabov. Bulletin of the Tajik National University. Series of socio-economic and social sciences **8**, 15-22 (2019)