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## Важливість ведення обліку в сільському господарстві для прийняття управлінських рішень

*Прийняття управлінських рішень в сільському господарстві неможливе без існування адекватних облікових записів тобто документації, яка б містила всі зміни, пов'язані із здійсненням господарської діяльності на фермі. Беручи до уваги особливості біологічних перетворень, які характеризують сільськогосподарське виробництво, необхідно відстежувати і записувати ефекти, що виникають у зв'язку із здійсненням такої діяльності. Крім того, аналіз інвестованих коштів та виробленої продукції має важливе значення для оцінки результатів діяльності в цій галузі.*

*Виявлення та аналіз фінансових результатів фермерських господарств безпосередньо залежить від фіксації інформації в системі бухгалтерського обліку. Об'єктом даного дослідження є теоретичні, методологічні та практичні аспекти бухгалтерського обліку як інформаційної системи, з метою підвищення якості управління на макро- і мікро рівні в галузі сільського господарства. Важливість обліку розкривається в процесі постійного моніторингу виробничих і фінансових показників на фермах. Основною передумовою цього є наявність бухгалтерських записів, які формують високоякісну інформаційну базу для аналізу тенденцій розвитку сільського господарства.*

**Ключові слова:** прийняття рішень, інформація, сільське господарство, бухгалтерський облік.

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## Важность ведения учета в сельском хозяйстве для принятия управленческих решений

*Принятие управленческих решений в сельском хозяйстве невозможно без существования адекватных учетных записей то есть документации, которая содержала бы все изменения, связанные с осуществлением хозяйственной деятельности на ферме. Принимая во внимание особенности биологических преобразований, которые характеризуют сельскохозяйственное производство, необходимо отслеживать и записывать эффекты, возникающие в связи с осуществлением такой деятельности. Кроме того, анализ капиталовложений и выхода продукции очень важен для оценки результатов деятельности в этой отрасли.*

*Выявление и анализ финансовых результатов фермерских хозяйств напрямую зависит от фиксации информации в системе бухгалтерского учета. Объектом данного исследования являются теоретические, методологические и практические аспекты бухгалтерского учета как информационной системы, с целью повышения качества управления на макро- и микро уровне в сельском хозяйстве. Важность учета раскрывается в процессе постоянного мониторинга производственных и финансовых показателей на фермах. Основной предпосылкой этого является наличие бухгалтерских записей, которые формируют высококачественную информационную базу для анализа тенденций развития сельского хозяйства.*

**Ключевые слова:** принятие решений, информация, сельское хозяйство, бухгалтерский учет.

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## The Importance of Recording Data in the Agricultural Sector for Decision-Making

*In order to better decision making in the agricultural sector, it is necessary to the existence of adequate records or documentation base containing all changes relating to the implementation of business activities on the farm. Taking into account the characteristics of biological transformations, which are characterized by agricultural production, it is necessary to monitor and record the effects arising from the implementation of activities on the farm. Also, the analysis of the invested funds or inputs and realized value of production- outputs, are of importance for understanding the results of operations in this sector.*

*Identification and analysis of the financial results of farms is in direct conjunction with appropriately-designed system of accounting information. The research subjects, presented in this paper, are theoretical, conceptual, methodological and applicative aspects of accounting information system, in order to raise the quality of governance at macro and micro level in the field of agriculture. The importance of accounting informing is reflected in the continuous monitoring of production and financial indicators on the farms. The basic premise for this is the existence of high-quality accounting records on farms, in order to create high-quality information base for the analysis of the agricultural sector.*

**Keywords:** *decision making, information, farm, accounting.*

**Determination of the problem.** Agricultural holding is a complex production system, whose structure consists of certain business activities or processes of transformation of matter, energy and information. Processes are the substance of the agricultural holdings and must have a purpose (the creation of use value) and its objectives (economic effectiveness and efficiency). Quality informations are a key resource in the business of all businesses, including farms. Their timely availability is vital for effective decision-making and execution of production activities, and thus the survival of farms in a competitive market environment. Of course, important are also market, technical, technological and other general informations, but accounting informations are irreplaceable. Accounting is the only complete system of ongoing monitoring and quantitative analysis of the business activities. Without a reliable accounting and financial information on the operations of agricultural holdings is not possible to make good decisions at the micro and macro level, which should improve the results of the farms and hence agriculture as a whole. In order to evaluate production results, it is necessary to quantify and measure single and aggregate inputs and results in agricultural production. The results are, in the end, always quantified with the economic (financial) indicators. The importance of the share of quantitative information in the field of internal economy comes from the accounting information system.

**Review of recent research.** Reliable production and economic indicators from agricultural holdings represent a solid information base to take adequate measures at all levels of decision-making in agriculture, which is a prerequisite for the improvement of efficiency of farms. Information's enable farmers to have daily access to the course of their activities. Škorecová and Farkašová pointed great attention to informing farmers in order to improve their living standards [1]. Quality of information is decisive for the economic and social progress in the field of agriculture. New forms, methods and ways of managing agricultural sector, requiring adequate information that arise from business farms. For business analysis and better decision making on farms, it is necessary to possess accounting information about the farms that have similar production process.

Figurek points out that in the market conditions, prices of agricultural products are formed without affecting the producers themselves. Improving the economic situation of farms in these conditions can be achieved only by increasing the level of production efficiency on the farm [2]. In addition, it is necessary to implement appropriate agricultural policy. Agricultural production cannot be adequate planned, organized, supported and improved without monitoring data from

farms and the effects of some measures undertaken over a longer period of time. Zarda in their study highlights the importance of the application of management accounting in the agricultural sector [3]. Collected and analyzed data from agricultural holdings are converted into informations that iare necessary to generate for decision making up and managing processes on the farm. Agricultural production is associated with certain risks, and without adequate information and analysis, it is not possible to construct a short-term and long-term plans. The informations are of great importance for all industries, especially in the agricultural sector, where holders of farms have a managerial role at the farm. Petkovic emphasizes the importance of having a system of accounting information in agrosektoru. In market conditions, there is the need for possessing of the informations about the activities of agricultural holdings [4]. From the volume, speed and quality of presentation of the informations depends the efficiency of business decision-making in competitive conditions. Florey, Adams and Robinson emphasize the need to provide technical assistance to farmers in organizing and managing accounting records [5]. Particularly emphasizes the necessity of making appropriate brochures, forms, manuals, etc., in order to facilitate the monitoring of production or the results of recording and compiling reports on various farms. Frye emphasizes the importance of recording financial events on the farm, in order to facilitate agricultural holders to plan production and overall management of the farm [6]. Arfini explains the reasons behind the system for collecting data from agricultural holdings and points out its importance because of the agricultural policy, primarily for the purpose of monitoring the income of farm annually [7]. The lack of accurate data on the production and business operation of agricultural holdings is one of the serious obstacles to the development of agriculture.

**Formulation purposes of the paper.** The viability of agricultural holdings is based on knowledge regarding the management of production processes on farms and adequate decision. Agricultural producers should have the ability to make timely and appropriate decisions in order to better organize their own production activities. Decision-making and making a plan of productive activities undertaken by the agricultural producers is influenced by many factors, such as experience, preferences and overall social context which surround the agricultural producers. Different aspects of the environment affect the financial results and the decision-making process of farmers. The term 'social environment' is used as an umbrella term to describe the relationship of farmers in the environment.

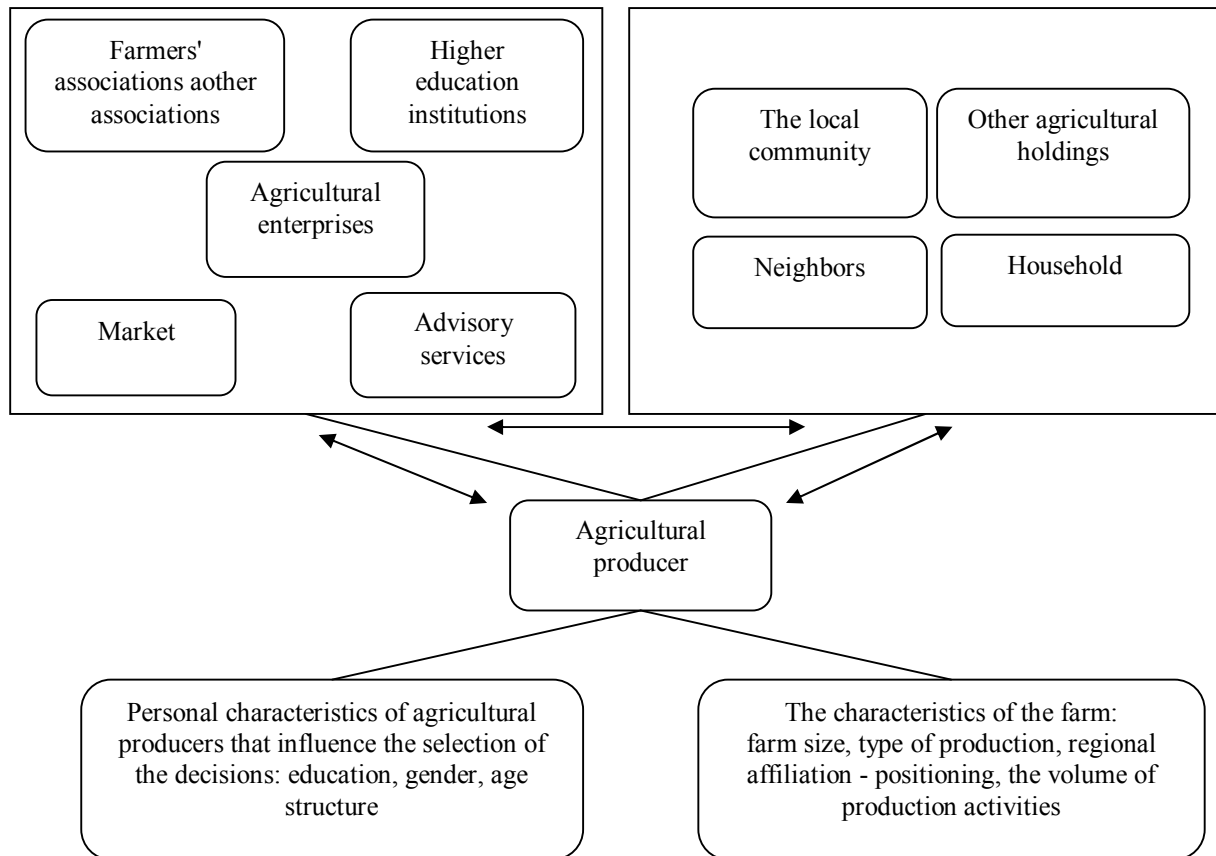


Figure 1. The interaction of farmers and the environment in the decision making process

Any communication with environment affects the complexity of the decision making process, but provides more information that, if properly and timely used, they can guide and enable successful business of the farmers. The advantages of this approach are contained in the fact that in this case it is possible to perform adjustment of production processes to individual farms, and make a significant impact on the process of making better decisions. Agricultural producers have a wide range of opportunities for acquiring data in terms of governance and management holdings, with the aim of achieving a more successful business and providing funds for the next production cycle. In order to be useful for decision makers, the data must be transformed into information. For better understanding of the collected data, it is necessary to access to their processing. When the data are collected and then structure in the context of their future use, or during data processing and analysis, they determine their true meaning and then can be called information. The differences that exist in terms of commitment of farmers to adopt new information sources, indicated on the existence of two groups of farmers: a) traditional and b) innovative. On the diagram 1 are identified differences in the approach to collecting the necessary information of mentioned two groups of farmers. Traditional farmers use printed materials such as certain guides that are used to improve certain production activities for certain types of agricultural production (eg, crop production - sowing). This group of farmers have limited skills in using the Internet and they have

difficulties for making contact face-to-face with other producers and agricultural consultants or advisors. Innovative farmers resort to collecting information from multiple sources. They possess skills in using the Internet and using appropriate computer programs which facilitate decision making.

Comparing traditional and innovative approaches to agricultural producers for gathering information, it can be concluded that according to the traditional approach, farmers have a limited amount of information, depending on the scope and content obtained through publications and frequency of communication with advisors. Collected informations on this way are generalized and do not have many alternatives to be adjusted for individual farms. Making decisions based on a small number of sources complicates the decision-making process and reduces the chances for selection adequate and timely decisions. The flow of informations and decision-making are the processes that can be devided and on that way, facilitate the choice of suitable alternatives. Incorrect informations can be eliminated, using this approach in the decision making process, and cannot exert influence the choice of alternatives that are not in the interests of farmers. Innovative farmers make greater individual effort to gather more information from different sources. They achieve better communication with advisors, farmers' associations, government institutions, and thus come to more informations than the agricultural producers with traditional approach.

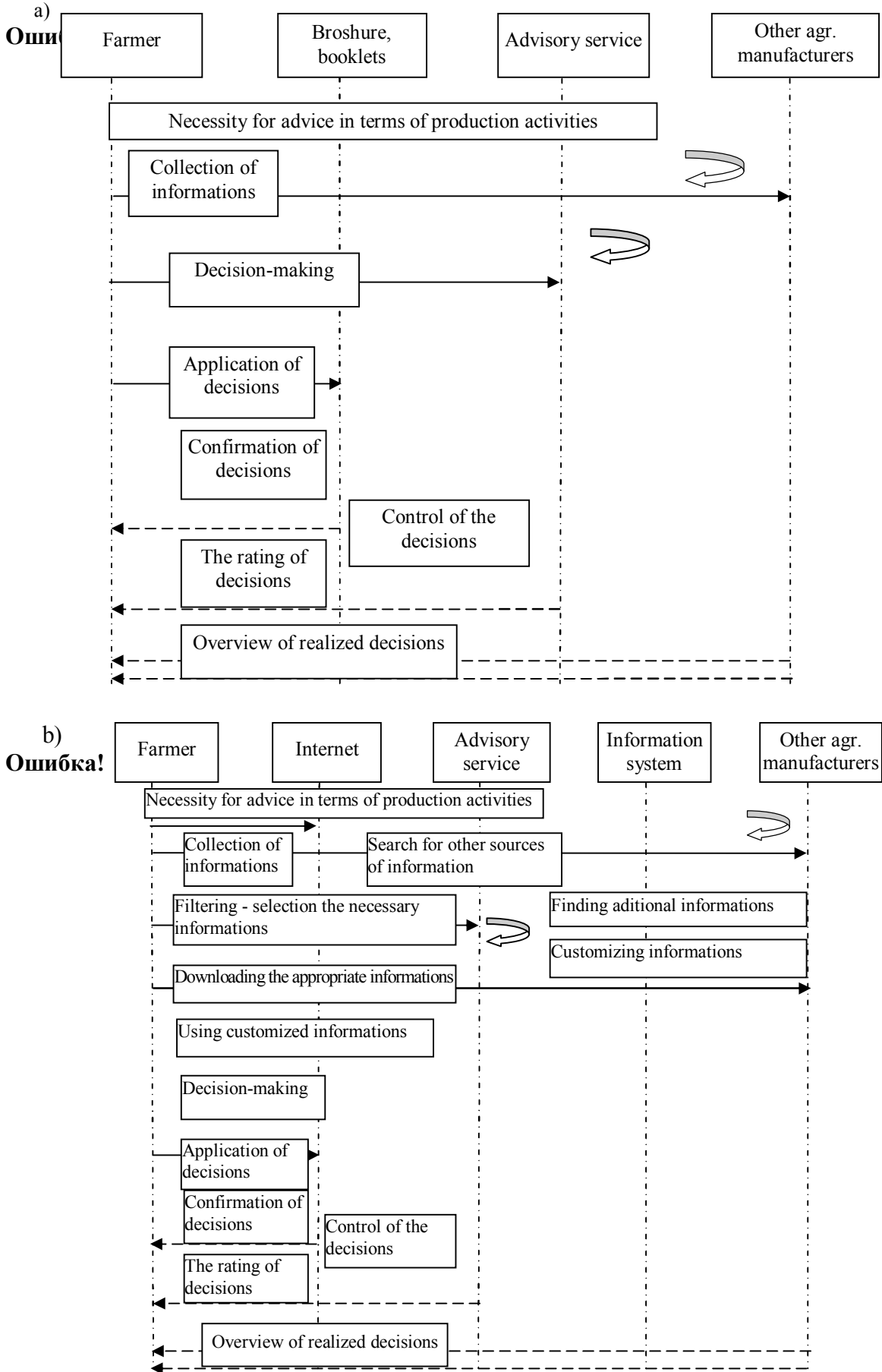


Figure 2. Traditional (a) and innovative (b) access to agricultural producers in the process of gathering information adjusted according [8]

Adequate and timely informations are of great importance for farm business, due to the fact that the perception of past activities related to the production process affect the planning of future activities, and also the final financial result. Achieving better results in the agriculture sector demands the existence of an adequate system of accounting information. In the process of the formation of said system, is of great importance to identify information needs of the agricultural producers. The task of this system is to identify the limiting factors affecting the farm business, and based on detailed survey of all production resources, plan adequate and timely changes in terms of production activities. Improving the organizational skills of farmers and the establishment of the benefits of competition in the market, depends primarily on the possession of quantitative and financial information on manufacturing processes.

Recording data on production processes (quantities and prices of consumed feed, fertilizers, harvested area, yield, revenue from the sale of agricultural products) are the basic prerequisite for control of the production activities. If in a given period performances discrepancies between planned and implemented activities, recorded data in the previous period can serve the purpose of identifying critical points that are registered in the previous production cycles. Then, it is necessary in the coming period adjust the production plan of activities and budget or financial assets on the farm.

**Presentation of the research material, including methodology description and key results of the research.** Starting from the fact that agricultural producers have an obligation to make decisions within their production activities, it is necessary to have everyday data on the amount of funds invested for each production cycle on the one hand, and business achievements on the other side. Monitoring of production processes or individual activities on the farm, and spending that cause production processes, can facilitate the control or management of the farm. For the planning and control of production activities, subsequent decisions taken on the ground are of great importance and should be treated with great responsibility and on the basis of well-planned future activities.

Management activities are necessary to concentrate towards adequate planning and control of production activities [9]. It should be noted that the activity of observing and monitoring of the results, is a key factor in achieving a successful business on the agricultural holding. In this way, the task relating on the monitoring results can be formulated in accordance with the actual needs of the situation on the farm, especially in terms of costs and benefits of agricultural holding. During the planning and implementation of production activities, the central aspect is to collect informations about the current and future states of the agricultural holdings.

The process of organizing the accounting informing for the purpose of improving agricultural production, is mutually agreeing and functioning of the accounting

information system and business decision-making. Accounting informing provides the necessary information in the field of strategic, tactical and operational planning, recording and accounting analysis for decision-making process. Understanding the business of farms, makes it possible to detect all the specifics that are related to agriculture and the processes that they are immanent. Providing information on the operations of agricultural holdings for the purposes of the management process, requires the formation of the accounting information system. Accounting information system is aimed to support the following:

- Supporting decision making,
- Achieving the planed economic results,
- Exercising direct control over the ongoing business activities.

The establishment of an information system which will provide accounting informations in the agricultural sector is of great importance for agricultural development. The purpose of the existence of an accounting information system is contained precisely in the transformation of inputs (knowledge of relevant business events) into outputs (business informations). Due to lack of adequate information of a financial nature by agricultural holdings, finding critical points in the production and organizational process is difficult and encounters many obstacles. Establishing a system of accounting information on the agricultural holdings is a long and complex process, with a number of critical points.

It is necessary to develop complex structure, with the following elements:

- Monitoring activities on the farm,
- Monitoring of the production results,
- Data processing,
- The establishment of a database of all production ongoing activities.

It is of great importance, that the recording of data on business activities on the farm is based on a consistent approach, which is based on reliable and systematized documentation. Information on the status and movement of resources and production processes in the agro-sector are expected in the establishment of adequate records within the accounting information system. The records of the business operations of agricultural holdings represent systematic documentation of business activities that take place on the farm in a given period of time. In order to meet those requirements, it is necessary to dispose of the four basic types of records:

- Records of the available capacities,
- Records of costs for crop and livestock production,
- Records of the final products,
- Records of the realization of plant and animal products, accounts receivable, billing, obligations, payments, etc. On the basis of these records, it is possible to create reports on specific cost categories, according to the implemented activities, spent working hours for each type of production, suppliers, customers, etc.

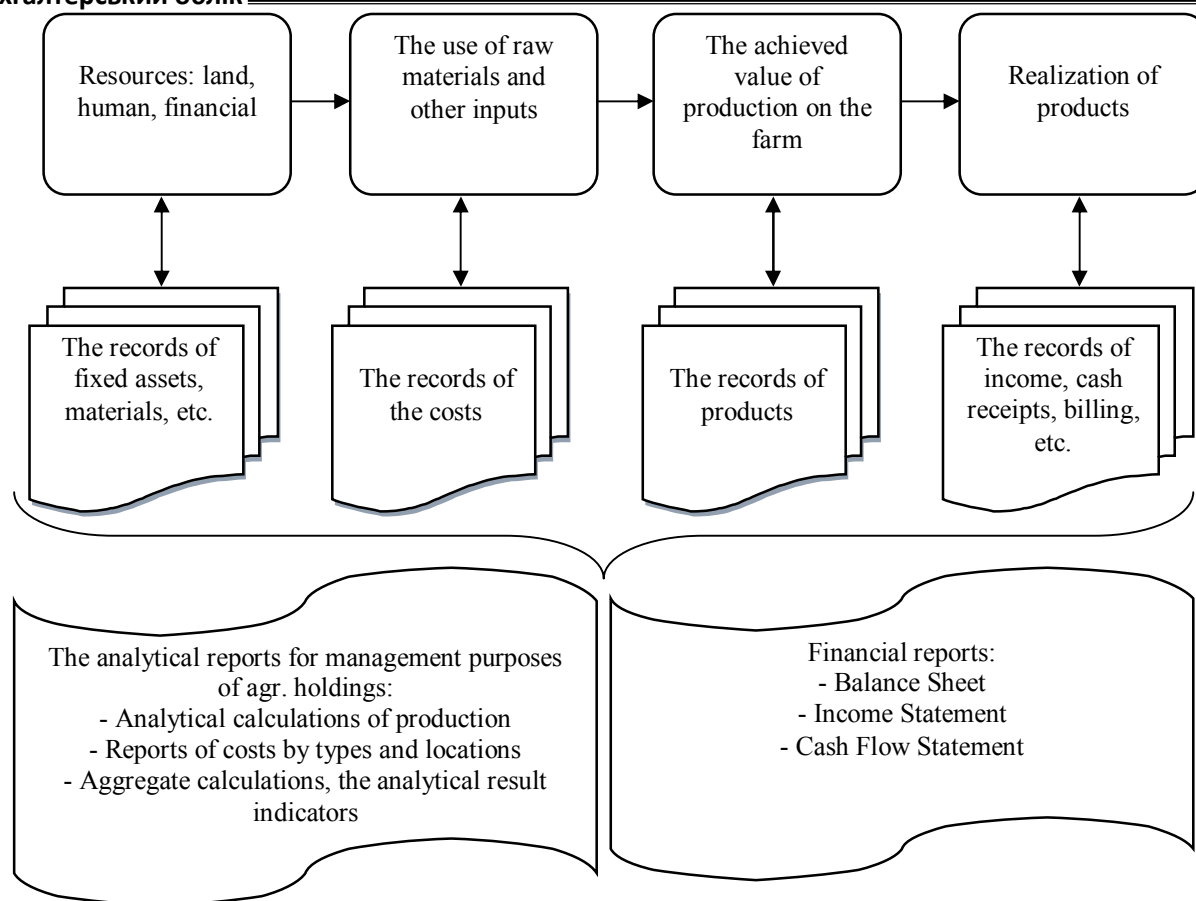


Figure 3. The system of records about operations of agricultural holdings

Also, those records provide the basis for drafting summary reports (summary reports for crop or livestock production, monthly reviews of spent concentrate, work hours, achieved sales of plant and animal products, etc.). The records should provide insight into the movement of the means of production as well as purposeful, correct and rational use of these resources. In this regard should be covered all the other activities that affect the operating results of farms. The efficiency of all involved factors, as well as cost-effectiveness of investments depending on objective or subjective impacts. Analysis of financial statements with the micro and macro aspects should serve to verify the rationality and efficiency of agricultural production in a particular territory.

Adequate financial statements can be formed on the basis of accurate and timely informations and represent indicators of business success of the manufacturers in agricultural sector, showing also the results of their management resource. Such information base along with the production factors can have a significant impact on long-term improvement of business results farms. Collected accounting information allow performance of valid macroeconomic indicators, and on the basis of their analysis, the adoption of appropriate measures in various areas related to agriculture (credit, monetary policy, etc.). At the micro-level, high-quality information is the basis for making the right decisions, or improving the operating efficiency of the farms. All this should have a

significant impact on the acceleration of agricultural development.

**Conclusions and further studies prospects.** For the purposes of decision making in agricultural sector, adequate access to information in the field of accounting is very broad and complex. Accounting information are resources in agricultural sector, whose basic role is reflected in the presentation of all other agricultural resources, on the basis of which decisions are made about implementation of agricultural activities. In terms of constant change and numerous risks of market way of business (that highlighted the need for quick and flexible decision-making behavior of farmers), there is a necessity of continuous recording of production activities on the farms. In order to establish the adequate accounting information system at the micro and macro level, the prerequisite is the existence of adequate accounting records in single households. Only in this way it is possibly to provide reliable informations, of which will benefit all interested decision makers in the agricultural sector.

Establishing a comprehensive system of accounting information will undoubtedly bring a number of benefits to all entities that are associated with agricultural production, such as:

- Primarily farmers: numerous production and financial information's on the operations obtained in the form of various accounting statements (balance sheet, statement and cash flows; derived indicators of success

for the farm as a whole; analytical and summary calculations and a number of other analytical reports on the assets, liabilities, costs, results, etc.) will enable better decision making, more efficient operations or farms;

– Advisory Service: will have reliable information to provide appropriate advice to the agricultural producers;

– Ministry and other state institutions: reliable information basis for the adoption of appropriate forms of incentives or measures of agricultural policy as a whole;

– Professional associations of producers of the agrarian sector (chamber of commerce clusters, etc.) Will have quality information basis for proposing measures and undertaking activities in order to improve the economic position of all participants in the reproduction process;

– Scientific and educational institutions and organizations: accounting information system will enable better agro economic researches, better training of personnel, etc.

The development of the accounting information system of farms will contribute displaying objective (realistic) picture on the farm, then comparing its past and current situation, which will also be a good basis for assessing performance in the future. Timely informing will create the conditions for significant improvement of the management process at all levels, which will bring multiple benefits for farms and agricultural sector in general. The final effect is to increase the competitiveness of the agricultural producers, ie raising the total agricultural production at a much higher level.

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