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INDUSTRY-BASED PECULIARITIES OF MAKING ESTIMATION OF EXPENDITURE ACCOUNTING AND PRIME-COST OF PRODUCTION AT FRUITS AND VEGETABLES PROCESSING PLANT

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Abstract. *This article is devoted to consideration of industry-based peculiarities of making estimation of expenditure accounting and prime-cost of production (case-study of fruits and vegetables processing plants). In addition, the article presents relevant conclusions based on the research.*

Key words: *expenditure accounting, prime-cost estimation, industry-based peculiarities, expenditure centres, estimation.*

Introduction. In conditions of the economy modernization, organization of accounting of making estimations of production costs and prime-cost of the goods makes a significant impact on the efficiency of the production type, plant productivity, management structure of the plant, production description, stock-list of products manufactured, as well as the manufacturing process itself. After all, when organizing accounting of expenditures it is necessary to take into consideration the expenditure accounting peculiarities of the processing industry: seasonality of production, consistency and continuity of the stages of technological preparation, variety and range of products. The basic principle of the expenditure accounting of expenses constituting the production prime-cost is the need to accumulate them by their place of origin. In our view, the purpose of dividing expenditures by the place of their occurrence is to study causal relationships, that is, where and why these expenditures occur, what are particular reasons of their occurrence at this very place and what is the objective necessity for these expenditures.

Literature review. Scientific literary sources and research papers provide various approaches to the issue of the place of occurrence of expenditures, as well as their grouping and classification.

In the opinion of N.B. Abdusalamova, "...one of the peculiarities of management and accounting of expenditures is their groupping in reliance upon their place of occurrence. In this regard it is crucially important to determine the place of occurrence of expenditures, as well as the responsibility centres" (Abdusalomova, 2017).

From the point of view of B.A. Khasanov, "expenditures centre is the segment of the enterprise or a sphere of a particular activity" (Khasanov B., Ganiyev Z., Mukhammedova D., 2018). We completely share this author's opinion, and we propose the chart of dividing all expenditures of the company in reliance upon their place of occurence (Figure 1).

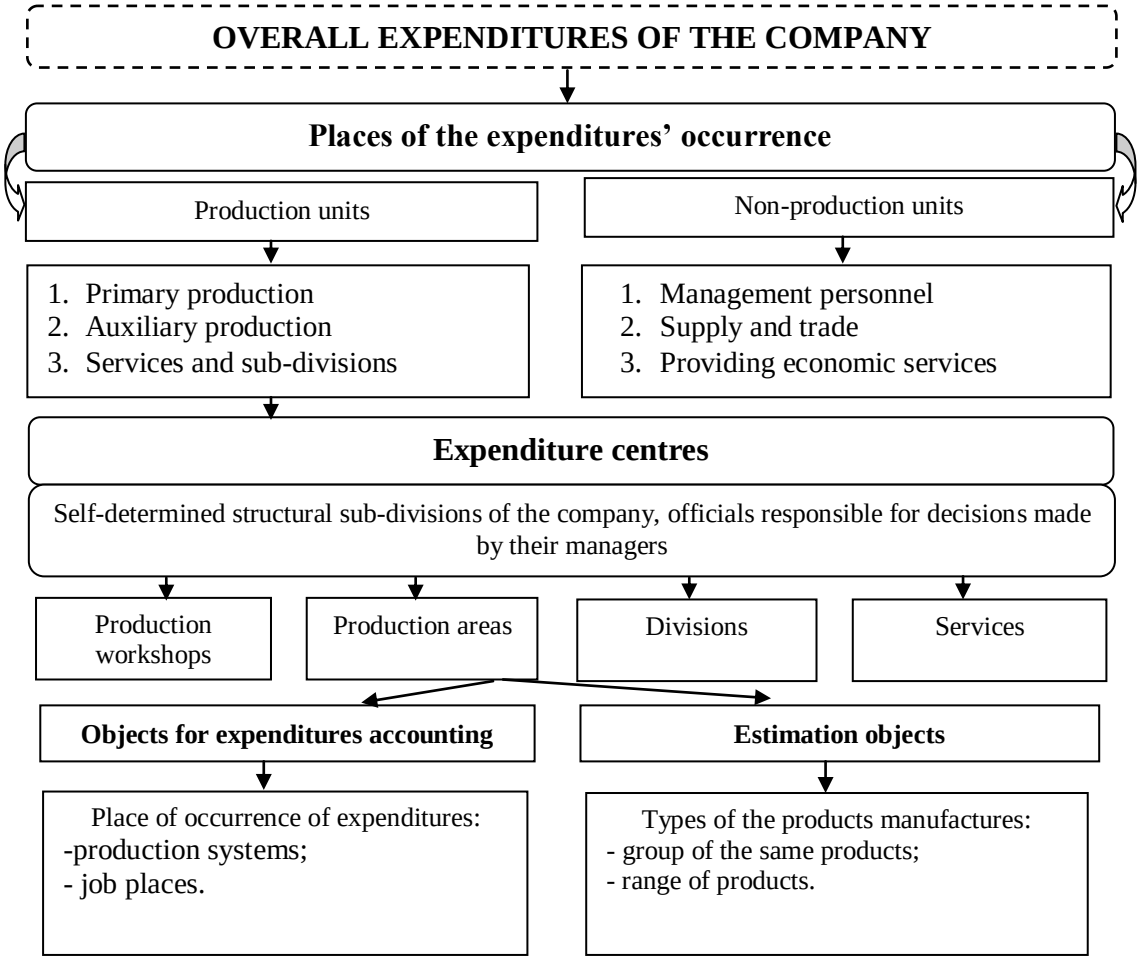

Figure 1. The system of formulating expenditures by the place of occurrence of management accounting expenditures[1]

In our view, it is recommended to implement accounting of production costs in terms of their place of occurrence in compliance with their activity essence. The difference method we propose on the basis of obtaining management accounting information in terms of its occurrence is based on differentiating the economic essence of the expenditures, their relevance to various practical branches and peculiarities of creating their prime-cost.

In this case the concept of "overall expenses" is restricted by the sphere of the fruits and vegetables processing enterprise and irrespective of the goal of the enterprise and completion of the production processes, and indicates the total volume of all expenditures of the enterprise. Each of the expenditures of an industrial enterprise is related to the

[1] Developed on the basis of the author's proposal.

production or organization of production and its management. As for fruits and vegetables processing plants, it is advisable to allocate production and non-production aspects of formulating expenditures. Non-production aspects (areas) of occurring expenditures are the following: management and administrative personnel; production complex and complex for rendering services to the economic entities and households. Production aspects of accounting expenditures are production types, areas of the business, subdivision of the enterprise and its production areas.

Once a cost report is compiled with detailed breakdown of production costs, direct division of workshops, and production areas, it is necessary to appoint a responsible person to oversee the production technology and costs of expenditures made. Therefore, the next step in the system structure of the cost formation process is their estimation of points of their responsibility.

The expenditures center is the structural subdivision which carries out the production process. Criteria for justifying expenditures centers depend primarily on the network affiliation and specificity profile of the enterprise. The expenditures center undergoes all technological processes of production of goods and the formation of basic production costs, where it is crucially important to study their structure and essence.

In Figure 1 proposed above, the lowest layer of the system is grouping expenditures on the basis of the objects of spending. However, there are contradicting opinions in the scientific literature regarding the dividing the objects of expenditure accounting. On the other hand, there is no doubt that management accounting practices need to include such a value as an object of the expenditure accounting.

It should be noted that proper selection of object of the expenditure accounting will make a significant impact on the efficiency of the estimation process. As we have mentioned earlier, the technological properties of the production and the nature of the products manufactured can make a huge impact on the selection of the object of the expenditure accounting. In our opinion, it is advisable for an enterprise to independently identify the object of the expenditure accounting, as well as the object of the estimation and the estimation units.

The estimation object is understood as the prime-cost of product which must be estimated or calculated. At fruits and vegetables processing the majority of estimation objects and expenditures objects are in mutual compliance. In this case, in order to calculate prime-cost of the production item the consolidation of all expenditures by the accounting object is divided into the quantity of finished products. If estimation objects

and expenditure objects are not in compliance, and in order to determine the prime-cost of the estimation object, expenditures on the accounting objects are added to each other and then a final figure is divided into the quantity of finished products. In this case the object of the expenditure accounting is considered to be a portion (share) of the estimation object.

Before compiling a more convenient list of the estimation object for processing enterprises, in our opinion, it is advisable to clarify the concept of "estimation" and "making estimation" in the scientific economic literature.

In its initial meaning, estimation implies the set of expenditures; making estimation – the process of calculating these expenditures. In the dictionary of economics the "estimation" concept is defined as determination by calculation of costs in monetary form attributable to the production of a unit or group of units of products, or to individual types of production. Estimation is required to determine planned or actual cost of an object or product (Encyclopedia, 2008).

In reliance upon modern economic literature, A.M. Vakhrushina identifies the concept "estimation": "Estimation is defined as a system of economic calculations of the unit cost of a particular product. In the process of calculating estimation, the number of products manufactures and production costs are measured (assessed) and thus a production prime-cost is determined" (Vakhrushina, 2018).

According to the opinion of I.Ye. Mizikovskiy, "Estimation is a tabular accounting calculation of costs, expenses in monetary terms for the production and marketing of a unit (or lot) of an item. It is the estimation that serves as the basis for determining the average cost of production and establishing the production prime-cost as acquired values" (Mizikovskiy, 2016).

From the point of view of V.B. Ivashkevich, to a wide extent, the concept "estimation" implies the process of measuring (assessing) the set of estimation objects in line with the expenditures. In terms of management accounting, "The estimation should be considered as an estimate of the cost of the organization and its subdivisions for production management purposes" (Ivashkevich, 2015).

Summing up the statements specified above, we can make a conclusion that, in our opinion, making estimation is the stage of final grouping of expenditures through their distribution by the types of products. During making estimations, the additional costs, accrued by type and place of occurrence, are compared with the volume of products.

From our point of view, accurate determination of the estimation unit is one of top-target issues in calculating prime-cost of production. An estimation unit is the measure of

the estimation object. Its selection is connected with the peculiarities of the product preparation, line of goods (assortment), units of measure applied and technological facilities for the goods manufactured. Natural measurement units (natural tins, liters) and conventionally-natural units (conventional tins and liters) can be considered as estimation objects at fruits and vegetables processing plants.

Analysis and discussions. At "Greenworld" Limited Liability Company (LLC) which we are researching, the processing of fruit and vegetables consists of two stages. The first one is primary processing of the agricultural products to obtain a raw concentrate as a business output, and the second stage represents production itself which implies processing of the concentrate and manufacturing ready products. The final output which meets the requirements of technology and quality and satisfies the demand of consumers is considered to be a final result of the production cycle.

Therefore, in this case the production system can be accepted as the object of expenditures accounting, and the finished production represents the object of making estimation. One liter of the production manufactured is admitted at the estimation unit at "Greenworld" LLC.

Another object of our analysis is "Tony-green" LLC. Its technology of the production process implies processing of agricultural raw materials by their stages as well. Thus the object of the expenditures accounting, as well as the order of dividing the objects of making estimation comply with the example considered above and a conventional tin is the estimation unit of the production manufactured.

Planned and actual (reporting) estimations are crucially important for the purposes of the management accounting. Planned estimation provides for the production and sales costs of the product to be achieved during the planned period of time. Actual estimation includes the data on the expenditures which really occurred at the production process. Actual estimation is used for supervising accomplishment of the planned indicators and deviations occurred. With the aim of supervising and managing estimation expenditures it is required to completely introduce expenditures into estimation settlements. Making estimation is closely related to the composition of the items subject to the estimation. Grouping of items must be in compliance with the type of expenditures occurred in the process of the corporate governance of the subject of assessing profitability, efficiency and other quantitative and qualitative indicators, as well as their oversight.

In reliance upon the research on the basis of the data of the enterprises analyzed, general structure and essence of making planned estimation inherent to processing

enterprises is considered below. Meanwhile, a planned estimation must be made on the basis of current norms and estimate costs separately for each manufactured product. Table 1 given below provides the data on the expenditures of "Greenworld" LLC and "Tony-green" LLC by the estimation units made on the manufacturing of each production unit.

Table 1

Planned calculation of the production prime-cost

"Greenworld" LLC (Case-study of the apple natural juice)	**"Tony-green" LLC (Case-study of squash spread)**
Self-made semi-finished products: concentrated apple juice	Self-made semi-finished products: raw squash paste, milled onions and carrots, and other spices
Auxiliary materials (glue, ink, packaging boxes)	Other raw materials (salt, tomato paste, milled carrots, etc.)
Packaging materials (Tetra Pak, Brick Accntic, straw, cover)	Auxiliary materials (glue, gauze, detergents)
Corrugation box (cardboard packing for 8 or more units)	Packaging boxes and packing materials (glass jars, covers, labels)
Expenditures of the workshop (salary of employees and deductions for social needs, taxes and other compulsory payments, depreciation of production systems and other expenses related to the workshop performance)	Expenditures of the workshop (salary of employees and deductions for social needs, taxes and other compulsory payments, depreciation of production systems and other expenses related to the workshop performance)
Auxiliary production facilities (water, steam, electricity, deviations)	Auxiliary production facilities (water, steam, electricity, deviations)
General production and general economic expenditures (expenses related to the organization and management of the production process, equipping and maintenance of production facilities and premises, other production costs)	General production and general economic expenditures (expenses related to the organization and management of the production process, equipping and maintenance of production facilities and premises, other production costs)
Loss from faulty goods	Loss from faulty goods
Other production costs	Other production costs
Total production prime-cost	Total production prime-cost

In reliance upon the data provided in Table 1 we have developed certain proposals on the structure and essence of the planned estimation at the processing enterprise with the account of its peculiarities. First of all, the management of the enterprise makes a decision on the manufacturing of a certain type of product. Then the lab compiles a recipe that assures that the product meets all technological requirements, taste and consumption characteristics. The task of the economic department is to calculate the prime-cost of the proposed recipe and the cost of its planned sale and, in turn, the profit expected.

In the planned estimation, elements of expenditures must be presented in terms of cost per unit of finished product. In the next step the estimate is submitted to the management of the enterprise to decide whether the product's planned value is reasonable, how much the price will match the estimated average price of the same product, and whether the profit expected will match the desired amount. The effectiveness of the estimation procedures to a large extent depends on the method used by the enterprise to account and calculate the expenditures.

In the economic literature the concept "method" is treated as "movement, attempt" (Dictionary, 2009). In our opinion, M.A. Vakhrushina has provided a comprehensive interpretation of the term "method" used for accounting production costs and making estimation of the prime-cost of the product. In her opinion, a method is "a set of means used for documenting and reflecting production costs that help determine the actual prime-cost of a product, as well as calculating the costs per unit of production" (Vakhrushina, 2000). According to the point of view of M.A. Vakhrushina, in our opinion, it is a set of analytical tools used for calculating production costs by estimation objects and calculating estimation units.

There are various ways to account expenditures and making estimations of the production prime-cost. An economic entity under its own power selects the most convenient method. Herewith it is crucially important to take into account such factors as peculiarities of the manufacturing process, composition of the products manufactures, as well as the range of products available.

Currently there is no unified generally-accepted classification of the methods used for accounting expenditures and making estimations. However, in the modern economic literary sources current systems of accounting expenditures are presented in terms of analytical accounting objects, normative standards and completeness of expenditures accounting.

By the analytical accounting of expenditures, the objects are divided into the process methods, gradual methods and special-order methods. In terms of the norms of expenditures they are divided into the accounting system of actual expenditures and accounting system by the standard ratios of expenditures. Completeness of the accounting of expenditures implies the making estimation of the prime-cost of production on the either complete or non-complete basis ("Direct-costing" system).

Technological and organizational peculiarities of the production, quantitative and qualitative characteristics of the manufactured production requires bringing in compliance

of the methods of accounting expenditures and making estimation of the prime-cost of the production. Most importantly, the option of optimizing the cost accounting systems selected by the enterprise should provide an opportunity to control production costs.

As it has been stated above, the fruits and vegetables processing plant undergoes several stages of cycle in the process of manufacturing production. In turn, it is advisable to use a gradual method of cost accounting and making estimation of prime-cost of production in the surveyed enterprises.

Figure 2 demonstrates common process of accounting expenditures on the basis of the gradual method of making estimation.

In reliance upon the proposal specified in Figure 2, agricultural products are processed in two stages, and herewith the prime-cost of the finished products constitutes a kind of "basis" for the expenditures added at the next stage.

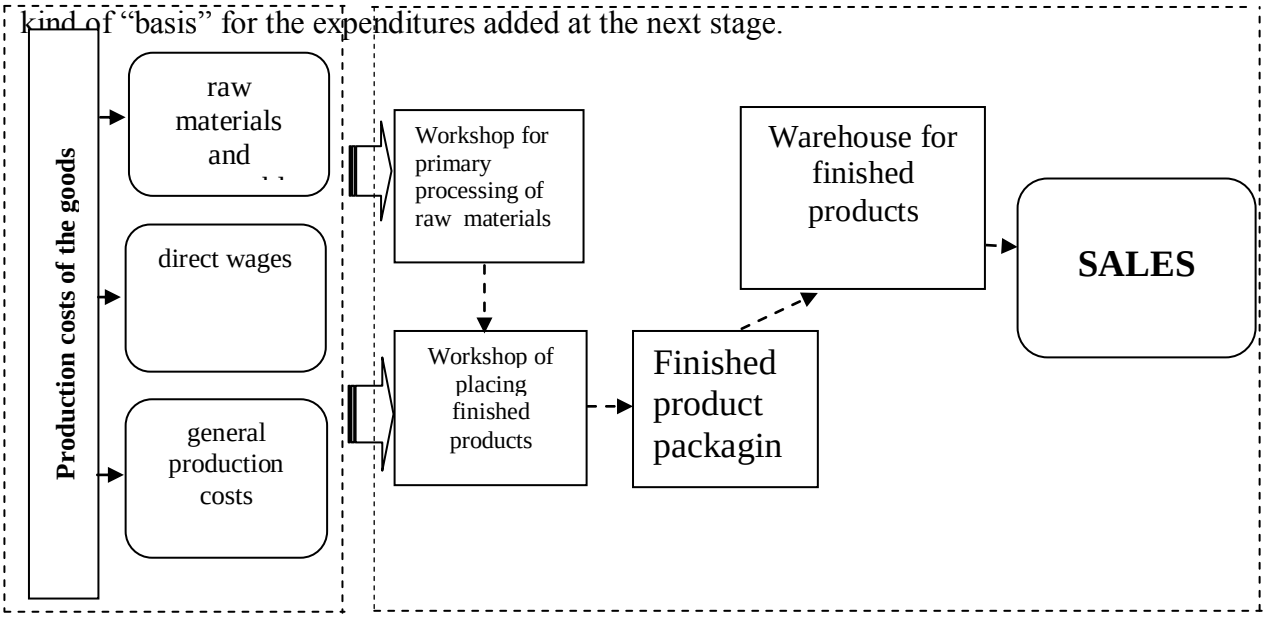

Figure 2. Procedure for accounting expenditures by the gradual method of making estimation of the production prime-cost (case-study of "Greenworld" LLC)

When applying the gradual method for estimation at fruits and vegetables processing plants direct production costs are planned and recorded by stages of production process, and within each stage, as approved per list of estimation objects. Production of each completed stage turns into the object of making estimation.

In compliance with the supply, agricultural products (fruits and vegetables) received at the first stage by the fruits and vegetables processing plant are considered to be initial raw materials. Semi-finished goods are: concentrated juices, vegetable and fruit pastes, roasted vegetables, herbs and other spices are the finished products of this stage. Semi-finished products come to the second stage where they are processed and the final product is obtained.

In order to separate expenditures of the main production (core business) at the fruits and vegetables processing plants between the finished products and residuals of the non-completed production, we propose to apply the method of "conventional units" developed by Ch.T. Horngren (Horngren, 2004). The use of conventional units allows to re-account incomplete products into conditional ready products. This value consists of the following two additional elements: a total amount allocated to the production and completely finished products during the reporting period and the expenditures incurred by non-completed production during the reporting period.

Application of the gradual estimation of accounting expenditures in the domestic practice is widespread in the country in the form of the method of semi-finished products and the method of non-semi-finished products. The use of one or the other method depends on the need to determine the prime-cost of some semi-finished products, which are considered to be non-finished products of the main production (core business). This normally happens due to the sale of semi-finished products abroad. In our view, it is advisable to use the semi-finished product method at fruits and vegetable processing plants. For example, "Greenworld" LLC can sell abroad concentrated juice or vegetable and fruit spreads. Therefore, at the surveyed enterprises the estimation of the prime-cost of finished products includes the item "Semi-finished products of own production" (Table 1).

Conclusion and proposals. At the enterprises surveyed, the main advantages of the application of semi-finished products method of accounting expenditures at the industry-based enterprises are the following:

- this method enables to determine the prime-cost of semi-finished products after each stage, which, in turn, creates the opportunity to identify the price of semi-finished products when they are sold abroad;
- in addition, this method provides with an opportunity to account residuals of non-completed production by stages with a high degree of trust;
- furthermore, this method will facilitate enhancing oversight on internal transportation and consumption of semi-finished products of own production.

During the research process "traditional" ways of making estimations of direct production of the prime-cost, production workshop, manufacturing and complete prime-cost types have been considered. According to these methods, prime-cost of production workshop is calculated by adding general production costs to the prime-cost of indirect production. The production prime-cost is calculated by adding common economic

expenditures to the prime-cost of production workshop, and complete prime-cost is calculated by adding items of commercial expenditures. Making estimation of the product prime-cost is considered to be a basis for developing the information source of the management accounting, thus playing a significant role in making managerial decisions.

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