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IMPROVING THE ITEM-BASED ACCOUNTING OF PRODUCTION COSTS AND THE FORMATION OF PRODUCT COST IN GRAIN CLUSTERS

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Annotatsiya. Donchilik klasterlarida asosiy ishlab chiqarish va mahsulotni qayta ishlash bilan bog'liq xarajatlarni xarajat moddalari bo'yicha hisobga olish hamda mahsulot tannarxini iqtisodiy jihatdan asoslangan holda shakllantirish masalalari tadqiq etilgan. Mahsulot turlari va texnologik jarayonlar kesimida ishlab chiqarish xarajatlari tahlilini chuqurlashtirish maqsadida xarajatlarni "me'yoriy/me'yordan chetlangan" hamda "tejamkor/ortiqcha" mezonlari asosida analitik tasniflash, shuningdek, xarajatlarni muayyan faoliyat turlari va xarajat drayverlari bilan bog'lovchi "Chain-ABC" modeli taklif etilgan. Mazkur yondashuv xarajat moddalari tarkibini batafsil nazorat qilish, har bir mahsulot turi bo'yicha ishlab chiqarish xarajatlarini tahlil qilish, ortiqcha va unumsiz xarajatlarni aniqlash hamda mahsulot tannarxini iqtisodiy jihatdan asoslangan holda shakllantirish imkonini beradi. Taklif etilgan metodik yondashuvni donchilik korxonalari hisob amaliyotiga joriy etish ishlab chiqarish xarajatlarini samarali boshqarish va mahsulot tannarxini pasaytirish imkoniyatlarini kengaytiradi.

Kalit so'zlar: donchilik klasteri, ishlab chiqarish xarajatlari, xarajat moddalari, hisob siyosati, mahsulot tannarxi, xarajatar tasnifi, me'yoriy xarajatlar, me'yordan chetlangan xarajatar, tejamkor xarajatar, ortiqcha xarajatar, unumsiz xarajatar, ABC-kalkulyatsiya, Chain-ABC modeli, xarajat drayveri

Аннотация. Исследованы вопросы учета затрат, связанных с основным производством и переработкой продукции в зерновых кластерах, по статьям затрат, а также экономически обоснованного формирования себестоимости продукции. В целях углубления анализа производственных затрат по видам продукции и технологическим процессам предложена аналитическая классификация затрат на основе критериев «нормативные/отклоняющиеся от нормативных» и «экономные/избыточные», а также модель «Chain-ABC», обеспечивающая взаимосвязь затрат с конкретными видами деятельности и драйверами затрат. Предлагаемый подход позволяет осуществлять детальный контроль структуры статей затрат, анализировать производственные затраты по каждому виду продукции, выявлять избыточные и непроизводительные затраты, а также обеспечивать экономически обоснованное формирование себестоимости продукции. Внедрение предложенного методического подхода в учетную практику зерновых предприятий расширяет возможности эффективного управления производственными затратами и снижения себестоимости продукции.

Ключевые слова: зерновой кластер, производственные затраты, статьи затрат, учетная политика, себестоимость продукции, классификация затрат, нормативные затраты, отклоняющиеся от нормативных затраты, экономные затраты, избыточные затраты, непроизводительные затраты, ABC-калькулирование, модель Chain-ABC, драйвер затрат

Abstract. The accounting of costs associated with primary production and product processing in grain-growing clusters by cost item, together with the economically justified formation of product cost, is examined. To deepen the analysis of production costs by product type and technological process, an analytical classification based on the "normal/abnormal" and "economical/excessive" criteria is proposed, along with a Chain-ABC model that links costs to specific activities and cost drivers. The proposed approach enables detailed control over the structure of cost items, analysis of production costs for each product type, identification of excessive and unproductive costs, and economically justified determination of product cost. The implementation of the proposed methodological approach in the accounting practices of grain-growing enterprises expands opportunities for effective production cost management and product cost reduction.

Keywords: grain-growing cluster, production costs, cost items, accounting policy, product cost, cost classification, normal costs, abnormal costs, economical costs, excessive costs, unproductive costs, Activity-Based Costing (ABC), Chain-ABC model, cost driver

INTRODUCTION

In grain-growing clusters, the production process encompasses interconnected technological stages such as preparing seed materials, cultivating and sowing the land, crop maintenance, harvesting, cleaning and storage, processing, and selling the finished product. The incurrence of production costs with varying content and composition at each of these stages makes their accounting, control, and rational allocation to product cost one of the critical areas of management accounting in grain-growing clusters.

In the current accounting system, grain cultivation costs are primarily grouped by economic elements and cost calculation items. While this classification provides the necessary information about the composition of costs and the main items that form product cost, its analytical capabilities can be further enhanced by identifying the reasons for cost incurrence, determining whether costs are inherent to the production process or abnormal, and assessing whether resource utilization is economical or excessive. Accordingly, there are opportunities to analytically distinguish between costs associated with the standard technological process and those arising from various deviations within the cost structure. The accounting practices of the 24 grain clusters studied as part of this research for the 2020–2025 period also demonstrated the potential for introducing a separate system for classifying costs based on the “normal/abnormal” and “economical/excessive” criteria.

Considering these specific cost characteristics in grain cultivation enhances the ability to conduct an in-depth analysis of the factors shaping product cost, identify the causes of abnormal expenditures, and promptly control excess costs arising from resource use. In particular, the fact that an expense with the same economic substance can be normal or abnormal, economical or excessive under different production conditions necessitates its classification based on additional analytical criteria for the purpose of cost management.

In this regard, simultaneously dividing grain cultivation costs into two groups based on two criteria—“normal/abnormal” according to their nature of occurrence in the production process and “economical/excessive” according to the efficiency of resource utilization—expands the analytical capabilities of cost accounting. This approach allows for an interconnected assessment of the nature of cost occurrence and the efficiency of resource use, enabling the separate identification of deviations from the standard process and excess expenditures. In this research, this two-dimensional classification is proposed as a scientific and methodological approach that enhances the analytical capabilities of cost accounting.

At the same time, the classification of costs can be complemented by an accurate determination of product cost. In grain-growing clusters, it is also crucial to identify which technological process or activity generated the costs and to link them to product cost through relevant cost drivers. Therefore, using an activity-based costing approach adapted to the technological characteristics of grain-growing clusters allows for a more precise determination of cost origins and the allocation of indirect costs based on economically sound criteria.

Building on this approach, a Chain-ABC model was developed that links the seven main stages of the grain production technological chain, the 32 types of activities within them, and their corresponding cost drivers. The model is designed to aggregate costs across technological processes, determine their impact on product cost, and generate the analytical information necessary for cost management.

Therefore, the purpose of this study is to improve the accounting of primary production and product processing costs in grain clusters by cost item, expand the capacity for analyzing production costs for each product type, and develop a methodological approach for the economically sound formation of product cost. Achieving this goal involves the analytical classification of costs based on the “normal/abnormal” and “economical/excessive” criteria and linking them to a Chain-ABC model adapted to the technological processes of grain cultivation.

LITERATURE REVIEW

In Uzbekistan, research on accounting for production costs, grouping them for management purposes, and accurately determining product cost has paid particular attention to industry-specific characteristics, identifying the locations where costs are incurred, and ensuring their justifiable allocation to relevant accounting objects. These scholarly approaches provide an important theoretical and methodological basis for deepening cost accounting in grain clusters in relation to their technological processes.

R.R. Obidov, investigating the issue of improving cost accounting within a cluster system, proposed a differentiated approach to cost formation based on the sectoral and seasonal characteristics of cluster activities. Specifically, he substantiated the necessity of calculating depreciation on seasonally used fixed assets in proportion to the volume of work performed and classifying the costs of production-related inventory and farm supplies into production, period, and future-period costs, depending on their involvement in production and their service life [1]. This approach highlights the need to account for costs in relation to the conditions of their occurrence and the nature of resource utilization. At the same time, this approach provides a methodological

basis for further developing the evaluation of costs in grain cultivation based on the “normal/abnormal” and “economical/excessive” criteria as a separate classification system.

D.S. Tashnazarova puts forward the idea that, when improving the calculation of product cost, it is necessary to rely on the “cause-and-effect” relationship between the occurrence of costs and the cost object rather than simply allocating overhead production costs to selected distribution bases [2]. The study also develops a methodological approach for calculating the equivalent unit cost for material and conversion costs based on the use of budgeted allocation rates, identifying the base factor that influences cost incurrence, and applying process costing. These views strengthen the theoretical basis for linking costs in grain-growing clusters to the activities and cost drivers that generate them.

In his research on improving strategic cost management accounting, A.A. Abdurazaqov investigated issues related to managing costs along the value chain, accounting for deviations that arise during the budgeting process, and linking product costs with activity-based costing approaches [3]. The study proposes integrating the ABC system with other analytical classification tools, as well as accounting for costs according to the objects where they originate and by financial responsibility centers. This approach demonstrates the importance of determining, for management accounting purposes, not only the final amount of costs but also where and under the influence of which processes they were formed.

Research in the agricultural sector has also emphasized the direct link between cost formation and management accounting. K.T. Nurmanov, examining strategic management accounting and analysis in the context of agricultural enterprises, including rice-growing clusters, justified the need to generate information on cost and price formation through separate accounting objects [4]. The study formulated proposals for separately accounting for strategic costs and linking them to the enterprise’s operating budget. These perspectives confirm that the process of cost formation in agriculture serves not only as a function of financial accounting but also as a managerial tool for monitoring the efficiency of resource utilization.

Research directly related to the costs of grain and grain products was conducted by S.Q. Omanov. His study proposed that, at grain production enterprises, the costs of processing seed grain, as well as drying, cleaning, and further processing of commercial grain, should be established as separate analytical accounting objects [5]. Specifically, he substantiated that reflecting the costs associated with processing seed grain and with drying and cleaning grain in separate working accounts contributes to a more accurate determination of production cost. This approach highlights the necessity of transitioning from consolidated cost accounting to analytical accounting based on technological operations in grain farming.

The aforementioned views of local scholars form a general scientific direction regarding the necessity of linking costs to their place of origin, cause, technological process, and management objects. This approach is consistent with the principles of ABC (Activity-Based Costing) in international management accounting practice. R.S. Kaplan and S.R. Anderson emphasize that, in activity-based costing, it is necessary to link resource costs to the activities that generate demand for them rather than conventionally allocating them to products or services [6]. In their enhanced approach, the cost of resource capacity and the amount of resources required to perform an activity are considered the primary factors in cost allocation.

A review of the aforementioned research indicates that a significant methodological foundation has been established in both domestic and foreign scientific literature for accounting for production costs, grouping them by technological processes and cost objects, rationally allocating indirect costs, and utilizing elements of ABC costing. At the same time, there are opportunities to further develop the integration of the following components within a single accounting mechanism: in-depth accounting of costs related to primary production and product processing in grain clusters by cost items; their analysis for each product type; the separate identification of excessive and unproductive costs; and the economically justified calculation of product cost based on this information. Therefore, integrating cost accounting by item with the analytical criteria of “normal/abnormal” and “economical/excessive,” as well as with a Chain-ABC model adapted to the technological processes of grain farming, represents a promising methodological direction.

RESEARCH METHODOLOGY

The study utilized a systematic approach, monographic study, comparative and documentary analysis, grouping, calculation, and expert assessment methods. The empirical basis was formed from financial and internal management reports for 2020–2025, primary accounting documents, interviews with executive staff, and the results of a questionnaire survey conducted among 128 chief accountants and executive staff from 24 grain clusters in the Samarkand, Jizzakh, Kashkadarya, Surkhandarya, and Navoi regions. During the research process, the existing structure of production and processing costs was examined by cost item, and the possibilities for analyzing these costs by product type and technological process, analytically grouping them based on the “normal/abnormal” and “economical/excessive” criteria, and forming an economically sound

product cost using the Chain-ABC model were evaluated.

ANALYSIS AND RESULTS

Within the scope of the study, the cost structure associated with primary production and product processing in grain clusters was examined, along with the current practices for accounting for these costs by cost item. Such an analysis makes it possible to identify the main cost items that form product cost, their share in total costs, and their impact on the final cost. To this end, the composition of the average production costs for cultivating wheat on 1 hectare of land in 24 grain clusters, based on data up to 2025, is presented in Table 1.

Table 1

The Structure of Average Production Costs for Wheat Cultivation per Hectare in Grain Clusters, 2025¹

No.	Cost Item	Amount, thousand UZS	Share, %
1	Seeds and planting materials	850.4	7.9
2	Mineral and organic fertilizers	1,720.3	15.9
3	Plant protection products	632.8	5.9
4	Fuel and lubricants	1,985.7	18.4
5	Electricity	420.5	3.9
6	Repair of machinery and aggregates	512.4	4.7
7	Depreciation allowances	745.8	6.9
8	Employee remuneration	1,340.7	12.4
9	Social security contributions	160.9	1.5
10	Irrigation and land improvement costs	685.3	6.4
11	Transportation costs	340.1	3.2
12	Land tax and lease payments	275.2	2.5
13	Other direct costs	210.6	2.0
14	General production overheads	645.3	6.0
15	General and administrative expenses	261.8	2.4
	Total	10,787.8	100.0

The data presented in Table 1 show that the main portion of wheat cultivation costs is attributable to fuel and lubricants, mineral and organic fertilizers, and employee remuneration. The share of fuel and lubricants in total costs is 18.4%, mineral and organic fertilizers account for 15.9%, and employee remuneration constitutes 12.4%. When the costs of seeds and planting materials, depreciation allowances, irrigation, and plant protection products are also considered, these primary cost items account for nearly three-quarters of total production costs.

These results highlight the importance for grain-growing clusters to clearly define the main cost items related to production and processing in their accounting policies, account for them separately by product type, and conduct regular analyses.

At the same time, determining the amount and composition of expenses by cost item can be complemented by an assessment of their economic justification. For example, an increase in fuel consumption may be a normal occurrence associated with an expansion in the volume of agrotechnical work performed or may represent an overage resulting from the inefficient use of machinery. Likewise, an increase in irrigation costs may arise from agrotechnical necessity or from the inefficient use of water resources. Therefore, from a management perspective, differentiating the economic substance of costs within the same cost item provides an opportunity for a more comprehensive assessment of their formation.

In the clusters studied, production costs are primarily accounted for in a generalized manner based on existing cost calculation items. Accordingly, there are opportunities to further develop the capacity for an in-depth analytical assessment of these costs by product type, technological process, and level of economic justification. Specifically, analytical accounts can be enhanced by separately reflecting whether costs were incurred within the planned technological process or as a result of deviations, as well as by indicating standard versus excessive consumption in resource utilization. This approach expands the ability to distinguish between economically justifiable costs to be included in product cost and those that are excessive or unproductive,

¹ Source: Calculated based on data from 24 surveyed grain clusters.

analyze the reasons for their occurrence, and determine appropriate management measures.

To enhance this approach, it is proposed that the current accounting of cost items be deepened through additional analytical criteria. Within this framework, the first dimension reflects the nature of costs arising during the production process, classifying them as normal or abnormal. The second dimension reflects the efficiency of resource use, dividing costs into efficient and excess groups. This classification serves as an additional management accounting tool for analyzing the amounts accumulated by cost item from the perspective of their causes and compliance with established standards (Table 2).

Table 2
Methodological Content of the Two-Dimensional Classification of Grain Production Costs²

Classification Dimension	Cost Category	Analytical Content
Nature of Cost Incurrence	Normal Costs	Costs incurred within the established technological process and production conditions.
Nature of Cost Incurrence	Abnormal Costs	Costs associated with unforeseen circumstances, technological deviations, and departures from the normal production process.
Efficiency of Resource Use	Efficient Costs	Expenditures reflecting the results of efficient resource use relative to established cost norms.
Efficiency of Resource Use	Excess Costs	Costs reflecting the consumption of resources beyond established norms.

Under this classification method, each cost is first attributed to the corresponding cost item and product type. At the next stage, the nature of its occurrence and the efficiency of resource utilization are analytically evaluated. For example, the portion of fuel, irrigation, fertilizer, or labor costs that is justified by the technological process can be classified as normal costs, while the portion exceeding established norms can be classified as excess costs. The causes of abnormal and excess costs are examined through documentary and causal analysis. The portion that is not economically necessary for the primary activity or does not yield the intended result is designated as unproductive costs and becomes a separate object of management control. Consequently, this approach expands the capacity to analyze production costs for each product type, identify economically unjustified expenditures within the cost structure, and develop management decisions aimed at reducing them.

To implement the proposed approach in a practical accounting system, it is advisable for the accounting policy of a grain cluster to define the cost items related to primary production and product processing. This policy should also establish the procedure for their analytical accounting by product type and technological process, as well as the rules for assessing costs based on the “normal/abnormal” and “economical/excessive” criteria. Furthermore, the relevant appendices to the accounting policy should reflect the cost standards for relevant activities, the procedure for documenting and analyzing deviations from these standards, and the process for making management decisions regarding identified excess and unproductive expenses. Such a procedure transforms cost accounting into an integrated information system aimed at the economically justified formation of product costs and the reduction of unproductive expenditures.

The practical effectiveness of the two-dimensional classification is directly linked to the ability to accurately determine which processes and activities generated the costs. For this reason, to calculate product costs in grain clusters, a Chain-ABC model was developed that combines elements of process costing and ABC costing with traditional calculation methods.

This model is based on a three-level hierarchy. The first level covers the 7 main stages of the grain value chain, the second level comprises a total of 32 activities within these stages, and the third level consists of the cost drivers that represent how costs are incurred in these activities.

The first level of the chain is divided into the following seven stages: seed production; land cultivation and sowing; field care; reaping and harvesting; cleaning and storage; processing; and sales and export. These stages are subdivided into 3, 5, 6, 4, 4, 6, and 4 types of activities, respectively, for a total of 32 activities.

The main aspect of ABC costing is to link costs to the activities and cost drivers that generate them rather than to allocate them through conventional allocation bases. Based on the specific characteristics of grain farming, the following cost drivers are used: hectares for plowing and sowing costs; cubic meters of water for irrigation; the amount of fertilizer applied or land area for fertilization; combine-hours or tons of harvested crops for reaping; tons of processed grain for cleaning; tons of raw materials for milling; and tons of finished products for flour and pasta production. For export operations, it is planned to use indicators related to product tonnage

2 Source: Compiled based on research findings.

and export value.

This approach allows for the step-by-step tracking of costs as they move through the technological process and for determining the contribution of each activity to the final product cost. As a result, instead of distributing total production costs once using conditional coefficients, it becomes possible to assign them to cost objects based on the quantitative indicators of the activities that generate the costs.

The practical accounting mechanism of the Chain-ABC model also requires the deepening of analytical accounting. The study proposes using 28 special analytical sub-accounts for activities 1–28 within account 2010, “Primary Production,” the corresponding sub-accounts of account 9410 for sales-related activities 29–31, and a separate analytical sub-account of account 9010 to reflect export operations, designated as activity 32. This enables the tracking of costs across technological processes and activities, from the source document to the final cost.

In assessing the practical effectiveness of the proposed approach, special attention was given to the ability to account for production and processing costs by cost item, analyze them by product type, and identify excessive and inefficient costs. The outcomes of implementing the research findings in the accounting practices of grain enterprises are summarized in Table 3.

Table 3

Results of Implementing Proposals to Improve Production Cost Accounting in Grain Enterprises³

Enterprise	Implemented Approach	Accounting and Analysis Outcomes	Impact on Cost Price
“Samarqanddonmahsulot” JSC	Defining cost items related to primary production and product processing within the accounting policy and improving their analytical accounting	Expanded the capacity to analyze production costs for each product type, determine an economically justified cost price, and identify and reduce unproductive expenditures	The potential to reduce the cost price by 4–6% was created
“KATTAKURGAN GALLA CLUSTER” LLC	Improving the accounting of primary production and product processing costs by cost item	Created the opportunity to analyze production costs by product type, form an economically justified cost price, and reduce unproductive expenditures	The potential to reduce the cost price by 6–8% was achieved

The data presented in Table 3 indicate that the practical significance of the proposed approach extends beyond the reorganization of costs into new groups. The main result is the integration of cost item accounting with analytical analysis across product types and technological processes, the identification of deviations from established norms, and the treatment of excessive and unproductive expenditures as distinct objects of management control.

Applying this approach in the operations of “Samarqanddonmahsulot” JSC created an opportunity to reduce the cost of production by 4–6% through the analysis of production expenses for each product type, the determination of product cost on an economically sound basis, and the reduction of unproductive expenditures related to core activities. At “KATTAKURGAN GALLA CLUSTER” LLC, this approach created the potential to reduce the cost of production by 6–8%.

These results demonstrate that combining cost item accounting with a two-dimensional analytical classification and the Chain-ABC mechanism expands the informational capacity of the cost formation process. The primary source of cost reduction in this case is the effective management of economically necessary production expenditures through the identification of the causes of costs and deviations from established norms, as well as the control of excessive and unproductive spending.

The results indicate that, in grain-growing clusters, accounting for production costs by economic elements and general calculation items can be further enhanced to generate more comprehensive analytical information necessary for managing product costs. Therefore, it is essential to clearly define the cost items related to primary production and product processing within the accounting policy, account for them separately by product type and technological process, and conduct regular analyses. In this context, an additional analytical assessment of costs based on the “normal/abnormal” and “economical/excessive” criteria does not replace the existing classification of cost items but rather enables a more in-depth analysis of their economic justification.

A key aspect of the two-dimensional classification is the ability to link the economic substance of costs

³ Source: Compiled by the author based on data from the practical implementation of the research findings in the activities of the enterprises.

with the reasons for their occurrence. For example, the same cost for fuel, irrigation, fertilization, or labor may arise as a justified expense within the scope of production technology, or it may become an excess cost due to deviations from established norms. Therefore, in management accounting, reflecting not only the cost amount itself but also the reason for its occurrence and its status relative to the established norm expands the informational capacity of cost management. The accounting practices of the studied clusters demonstrate opportunities to further enhance the qualitative analysis of production costs and the identification of excess expenses by introducing such a classification.

The practical implementation of the proposed approach requires the interconnected establishment of several procedures within the accounting policy of a grain cluster: forming cost items, conducting their analytical accounting by product type and technological activity, setting cost norms, and comparing actual expenditures with these norms. Identifying the reasons for deviations between actual and standard costs allows for the separation of excess expenditures, the analysis of abnormal costs, and the treatment of unproductive costs—those that are not economically necessary and have not generated a corresponding result—as distinct objects of management control.

The research findings also indicate that the management capabilities of the two-dimensional classification can be further enhanced through its integration with the Chain-ABC model. In addition to determining whether a cost is normal or abnormal, economical or excessive, it is necessary to identify the specific technological activity in which it occurred. From this perspective, the Chain-ABC model integrates the seven main stages of the grain production technological chain, 32 activity types, and their corresponding cost drivers into a single system, which serves to identify the source of cost incurrence. Since the model is based on a combination of process costing and activity-based costing, it allows for the consistent tracking of cost formation throughout the technological process.

Another important aspect of the Chain-ABC model is its ability to transition from the conventional allocation of indirect costs to product cost toward an allocation based on the quantitative indicators that cause these costs. Utilizing cost drivers such as hectares for land cultivation, the volume of water used for irrigation, combine-hours or the amount of harvested crops for harvesting, and product tonnage for cleaning and processing strengthens the causal link between costs and activities. This, in turn, makes it possible to determine which processes have the most significant impact on the formation of product cost and to define cost optimization measures for specific activities.

The proposed approach also necessitates improving the organizational structure of analytical accounting. Opening special analytical sub-accounts for each activity allows for tracking costs from the initial source document through to the final product cost. Within account 2010, "Primary Production," the use of separate analytical sub-accounts for production activities, along with corresponding special sub-accounts for sales and export operations, ensures the practical implementation of the Chain-ABC model in bookkeeping.

Furthermore, the practical application of the model highlights the importance of evaluating cost not merely as a final result but as an economic indicator that is formed incrementally throughout the technological chain. This approach makes it possible to identify which activities generate additional costs in the processes ranging from wheat cultivation to its processing and the production of finished goods. Concurrently, separately accounting for primary and secondary products, as well as technological losses, further clarifies the economic substance of cost calculation.

The practical implementation of the proposed methodological approaches also confirms their managerial significance. At "Samarqanddonmahsulot" JSC, an approach aimed at improving the accounting of primary production and product processing costs by cost item, analyzing costs by product type, and reducing unproductive expenditures created the opportunity to lower production costs by 4–6%. At "KATTAKURGAN GALLA CLUSTER" LLC, applying these proposals resulted in a potential cost reduction of 6–8%. These results demonstrate that the primary source of cost reduction lies in the effective management of necessary production expenses through the control of costs by item and product type, the identification of deviations from established norms, and the reduction of excessive and unproductive expenditures.

CONCLUSION AND RECOMMENDATIONS

The research findings demonstrate the importance of further developing the accounting of production costs and the calculation of product cost in grain clusters in accordance with management accounting requirements.

First, it was proposed that the accounting policies of grain clusters should clearly define the cost items related to primary production and product processing and establish a procedure for their analytical accounting by product type and technological process. This approach expands the capacity to analyze production costs separately for each product type and determine product cost on an economically sound basis.

Second, to deepen cost accounting for management purposes, a two-dimensional analytical classification

of costs based on the “normal/abnormal” and “economical/excessive” criteria was proposed. Such a classification enables the separate identification of standard production expenses, deviations from established standards, and excess costs, as well as the analysis of their underlying causes.

Third, based on a causal analysis of abnormal and excess costs, it was proposed to identify expenditures that are not economically necessary for core activities or do not generate a corresponding result as unproductive costs and to treat them as separate objects of management control. This approach contributes to reducing the impact of economically unjustified expenditures on product cost.

Fourth, a Chain-ABC model was proposed to link production costs with technological activities and allocate indirect costs based on economically justified criteria. This model connects 7 technological stages, 32 activity types, and their corresponding cost drivers. The model enhances the analytical capabilities of the cost accounting process by identifying which activities generate specific costs and providing a clearer understanding of product cost formation.

Fifth, to apply the proposed approaches within a practical accounting system, it is advisable to define the following elements in the accounting policy: cost items, objects of analytical accounting, cost standards for activities, the procedure for documenting and analyzing deviations from these standards, and the process for making management decisions regarding identified excess and unproductive expenses.

Sixth, the implementation of the proposed scientific and methodological approaches has created the potential to reduce product costs by **4–6%** at “Samarqanddonmahsulot” JSC and by **6–8%** at “KATTAKURGAN GALLA CLUSTER” LLC. It is important to note that this cost reduction is achieved through the effective management of essential production expenses by analyzing costs by product type, identifying deviations from established standards, and reducing excessive and unproductive expenditures.

Thus, integrating the accounting of production and processing costs by cost item with a two-dimensional analytical classification and the Chain-ABC model enables the creation of a holistic management accounting mechanism aimed at controlling costs in grain clusters, ensuring the economically sound formation of product cost by product type, and reducing unproductive expenses.

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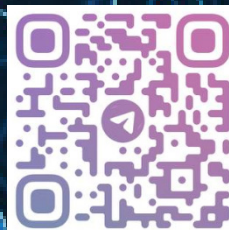
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