INDEPENDENT JOURNAL OF MANAGEMENT & PRODUCTION (IJM&P)
http://www.ijmp.jor.br v. 10, n. 7, Special Edition ***PDATU*** 2019
ISSN: 2236-269X
DOI: 10.14807/ijmp.v10i7.901

MAKING MANAGERIAL DECISIONS IN THE AGRARIAN MANAGEMENT THROUGH THE USE OF ABC-ANALYSIS TOOL

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Submission: 21/11/2018
Revision: 08/02/2019
Accept: 28/02/2019

ABSTRACT

The current paper is focused on material resources as a controlling factor in crop production. It has been found that according to the analysis of crop production expenditures in agricultural enterprises of Ukraine an expense structure consists of approximately 70% of material costs. In this regard, the ABC-analysis is utilized with the aim to determine the items of material expenses that significantly affect the cost and consequently the process of operational management for making decisions. The findings of the ABC-analysis of material expenditures for crop production in terms of elements at Ukrainian agricultural enterprises made it possible to determine the types of control (systematic, periodic, selective) that should be applied for different cost groups focusing on the most significant items of the material expenses. Expenditures are classified according to the stages of the technological process and types of the technology for crop cultivation, allowing to control the

ISSN: 2236-269X
DOI: 10.14807/ijmp.v10i7.901

scope of production costs at each stage of crops growing. These stages can be the basis for the application in the system of cost management of Activity Based Costing model. It is proposed to apply the operational control of material costs through the budgeting system in the agrarian management. It plays a leading role in the management system providing the process of managerial decisions making with the operative information about the actual indicators of material costs and their deviations. A form fragment of a flexible budget on material expenditures for winter wheat production has been elaborated. The enterprise managers can make operational, current and strategic management decisions and, consequently, influence the change of material resources, adjusting them to the technological processes stages in production and sales of goods, works and services based on the proposed form of a budget.

Keywords: ABC-analysis; Activity Based Costing; agriculture; budgeting; costs; Cost Management; control; crop production and management solutions

1. INTRODUCTION

Agriculture plays an important role in the development of Ukraine's economy and, above all, in providing food to the population. The peculiarities of agricultural production, primarily related to the technology of crops and livestock biological assets growing, are the basis of this particular branch of economy, affecting the process of making managerial decisions, in particular, operational ones.

Branch specifics defines the expenditures structure and content. Within one farm they are engaged in the production of various types of agricultural products (works, services), their cost forming methodology has its own characteristics. At the same time, the value of prime costs depends primarily on material costs, which are the basis of agricultural products (works, services). The use of various types of raw stuff and materials in agricultural production affects the cost amount, and hence the price and financial results.

Therefore, special attention is paid to relevant production expenses in the process of cost management and making managerial decisions on the use of various kinds of material resources, which play a key role in the adoption of an alternative management decision. At the same time, in the system of agrarian management, the control of production expenses is carried out in parallel, allowing to determine those industry key costs items, which enable to provide the substantial savings.

ISSN: 2236-269X
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According to calculations based on the State Statistics Committee of Ukraine data (Statistical bulletin for 2014, 2015) plant production expenditures make up a significant share: 74.8% in 2014, 68.4% in 2015 and 67.6% in 2016, in the production costs structure of Ukrainian agricultural enterprises. That is why we think that the analysis of expenditures and certain types of expenses control expediency substantiation are actual precisely for crop production.

2. REVIEW OF EMPIRICAL LITERATURE

General theoretical approaches to cost management and control were considered by such scientists as Upchurch (2003); Bhimani, et al. (2008); Drury (2008); Hansen and Mowen (2006); Merchant (1998) et al.

In particular, Hansen and Mowen (2006) researched functionally oriented costs and control, Activity-Based Cost Systems and allocated a new section from problem accounting and orientation on technological tools that positively influence the practice of Cost Accounting.

Bhimani, et al. (2008), Upchurch (2003) provided a clear coverage of existing and current issues in the management and Cost Accounting, paying attention to the various methods of Cost Accounting and determining the production cost.

Drury (2008) researched the use of such Cost Accounting methods as: Process Costing, Regulatory Cost Accounting, Life Cycle Costing, Target Calculation, Activity Based Costing and argued that for more effective Cost Management, organizations that use Functional Based Cost Accounting create cost estimates on the Activity-Based Budgeting (ABB).

Merchant (1998) evaluated various cases using a Cost Management System and applied a case study method for training management systems.

The Cost Management System, including Activity Based Costing and its use in the process of planning, monitoring and making management decisions were considered in studies of such scientists as: Arena and Azzone (2005), Vasilievoi and Riabenkova (2011), Drury (2008), Hundal (1997), Khromey (2015), Nachtmann and Needy (2003), Park and Simpson (2008) and Zheng, Chen, Wang and Li (2018).

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The Park and Simpson (2008) presented a Cost estimation model. These authors researched practical improvements to the Cost estimation by developing Activity-based costing (ABC).

According to Nachtmann and Needy (2003), Activity-Based Costing (ABC) are introduced to obtain accurate information about the cost of a product and process. Due to high data requirements, ABC input data is often evaluated, resulting in inherent inaccuracy and uncertainty in these systems. These authors researched the development and comparison of methods for processing this discrepancy of data and uncertainty in ABC systems.

Arena and Azzone (2005) covered the results of a Management Accounting survey of 289 Italian organizations. The study examined the adoption of three specific methods: ABC / ABM, Balanced Scorecard and EVA, analyzing the key success factors of companies applying for their adoption, their goals and the impact on management system performance.

Zheng, et al. (2018) investigated the necessity and feasibility of using the ABC method in hospitals based on current cost accounting in small and medium-sized public hospitals using cost management theory and cost theory on the basis of activities. The authors proposed some proposals concerning the management of medical center expenses based on the results of accounting according to the ABC method.

In general, the methods of Cost Management, Internal Control of Production Costs in agriculture, budgeting considered by Ackoff (1981; 2002), Carli and Canavari (2013), Deriy (2013), Dolishnya (2011), Gonzalez-Gymez and Morini (2009), Kostiakova (2015), Koutouzidou, et al. (2015), Pockeviciute (2008) and Shevchuk and Ovcharuk (2012).

For example, the works of such famous scientists as: Koutouzidou, et al. (2015) examines recent advances in cost accounting methods with special reference to the application of Activity Based Costing methodology in primary sector.

Carli and Canavari (2013) presented the model of a new information system for agribusiness management that supports Direct Costing and Activity Based Costing methodologies and conducted interviews with key-informants to evaluate their needs and identify the information requirements for the introduction of

ISSN: 2236-269X
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structured cost management approaches in a Farm Management Information System.

ABC analysis were considered by such scholars as: Bodryakov (2005), Hrek (2007), Marchenko and Bashylova (2017) and Fisher (2008). The methodology and feasibility of using ABC analysis, its advantages, disadvantages and limitations of the application were described by the following scientists as: Gusev and Marosin (2015), Tatarinova and Grishanova (2012) and Tyukaev (2012).

However, despite the theoretical and practical developments, the authors of this article believe that further research requires approaches to operational control of costs in agrarian management using the method of ABC analysis, which will reveal those items of expenditure that have the greatest impact on the cost of production of crop production and, accordingly, require intensified control over their magnitude.

3. RESULTS

In general, the processes of making managerial decisions, and hence the formation of the agricultural production cost are influenced by the following factors that are due to the peculiarities of the technology of biological assets and agricultural products (works, services) growing: the natural and climatic conditions; the soil; duration of the operational cycle; biological assets; variety of goods and production; technology and seasonality of production; production sales markets; labor force; material resources.

Features of agricultural production determine the costs classification, Cost Accounting methods, elements of analysis, planning, and, thus, affect the adoption of Cost Management System and current and strategic management decisions in agriculture. At the same time, they also influence the structure of production expenditures, methods of operational economic analysis and control, requiring special measures to improve the quality performance of agricultural enterprises, strict control over all production sites and levels of the enterprise.

Therefore, there should be well-organized and managerial accounting in the agricultural enterprises practice, which first of all should provide managers of agricultural enterprises with timely and reliable information as for planning, analysis, control and making reasonable management decisions.

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In addition, factors that affect the production process, and therefore the process of making decisions, can be divided into two groups:

- controlled – which can be influenced by the relevant decision or actions of managers;
- uncontrolled – which operate independently of the human factor.

The latter are unpredictable in the process of enterprise economic activity and require considerable attention when organizing agricultural enterprises production and management system in general.

American economist K. A. Merchand (1998) identifies three types of uncontrolled factors:

- economic and competitive (changes in prices, interest rates, regulations, amount of taxes, actions of competitors, tastes of consumers, etc.);
- state of nature (natural and climatic conditions);
- interdependence.

From the factors listed above labor resources, product assortment, product sales are controlled by the material that is, those that can be influenced by the Head in the production process; and land, natural conditions, duration of the operating cycle, biological transformations, biological assets and seasonality of production are uncontrolled, which does not change depending on a someone's decision.

At the same time, the degree of factors influences the process of managerial making decisions and hence the cost of biological assets and agricultural products (works, services), can be traced and analyzed through planning (budgeting), the final result of which depends on each component of the information base and the elements of analysis and statistics.

It was found that material costs take up more than 50% in the expenditures structure (66.95% in 2014, 70.05% in 2015, 68.04% in 2016 and 52.74% in 2017) (table 1) in the result of expenditures structure research as for the crop production in Ukrainian agricultural enterprises based on State Statistics Committee of Ukraine data.

So, we consider it appropriate to conduct an elements-based ABC-analysis of material costs for the crop production in agricultural enterprises of Ukraine.

ISSN: 2236-269X
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Table 1: Structure of expenditures for crop production in agricultural enterprises of Ukraine

Elements of operational expenditures	2014		2015		2016		2017	
	Million hrn.	%	Million hrn.	%	Million hrn.	%	Million hrn.	%
Labor costs	7777,7	6,74	7963,1	5,10	9972,4	5,11	13246,7	4,92
Deductions on the social purposes	2956,1	2,56	2772,0	1,77	2234,7	1,15	2848,0	1,06
Direct material costs	77282,1	66,95	109468,0	70,05	132745,2	68,04	141904,2	52,74
Depreciation of fixed assets	6786,6	5,88	7527,9	4,82	10245,7	5,25	14046,7	5,22
Other expenses	20635,4	17,88	28544,0	18,27	39909,7	20,46	97031,2	36,06
Total costs	115437,9	100	156275,0	100	195107,7	100	269076,8	100

Consequently, the attention will be directed to the controlled factor in this study, such as material resources in crop production. The ABC-analysis is used in order to determine those items of material costs, which significantly affect the cost, and therefore, the relevant indicators in the process of making operational management decisions. This method is based on the Pareto principle, the essence of which is as follows: control of a small number of elements allows you to manage the situation as a whole. This rule formulated by Pareto is often called 80/20 rule, it can be interpreted as: reliable control of 20% of positions allows for 80% control over the subject management system as a whole.

The general algorithm for conducting an ABC-analysis includes the following steps:

1) definition of the analysis objects;
2) determination of the conducted analysis parameter;
3) sorting of research objects in the parameter values decreasing order;
4) determination of A, B, C groups.

In accordance with the above algorithm, the objects of our analysis will be elements-based material costs for the crop production in agricultural enterprises of Ukraine in 2016-2017.

The amount of mentioned expenditures will be selected as the parameter of conduced analysis. According to the methodology, the material costs ABC-analysis essence is in the division of expenses compounds into three unequal powerful A, B, C subsets on the basis of the expenses amount as the chosen parameter.

Thus, the purpose of the elements-based ABC-analysis of material costs of plant production at the agricultural enterprises of Ukraine for 2016-2017, using the principle of Wilfredo Pareto, is to identify the most important items of material

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expenses, since these items give an opportunity to provide significant cost savings. The use of the Pareto principle (rule 80/20) allows us to conclude: it is enough to identify and optimize 20% of expenses to achieve 80% of the effect. That is, it is necessary to optimize those expenses that have the largest share in the expenditures structure in order to obtain significant savings. We propose to choose an empirical method for the implementation of the elements-based ABC-analysis method for the crop production in agricultural enterprises of Ukraine, which is to divide the objects into groups based on the average results of previous studies. The most commonly used option is the following: A - 80% and B - 95%.

Structure of material costs for crop production at the agricultural enterprises of Ukraine in 2016-2017 is presented in Table 2. The analysis shows that the expenses on payment of services and job of other organizations and other direct costs are the largest (38246.8 million UAH or 28.81% in 2016, 27551.6 million UAH or 19.42% in 2017), as well as the expenses for inorganic fertilizers (36694.8 million UAH or 27.64% in 2016, 43039.4 million UAH or 30.33% in 2017) in crop production agricultural enterprises of Ukraine.

Table 2: Structure of material costs for crop production at the agricultural enterprises of Ukraine in 2016-2017

№	Direct costs	2016		2017	
		mln UAH	% to the total costs	mln UAH	% to the total costs
1	Payment of services and job of other organizations and other direct costs	38246.8	28.81	27551,6	19.42
2	Inorganic fertilizers	36694.8	27.64	43 039,4	30.33
3	Seeds and planting materials	22009.6	16.58	26 371,5	18.58
4	Oil products	19156.1	14.43	24 500,8	17.27
5	Spare parts, repair and construction materials to repair	13339.3	10.05	14 278,6	10.06
6	Electric power	1483.1	1.12	1 409,1	0.99
7	Fuel	1147.1	0.86	1 963,5	1.38
8	Other products of agriculture	668.4	0.50	2 789,7	1.97
	Total	**132745**	**100**	**141904,2**	**100,0**

Distribution of material costs and the Laurence curve (ABC-curve) for plant production in agricultural enterprises of Ukraine in 2016 is shown graphically in Gragh 1, in 2017 is shown graphically in Graph 2.

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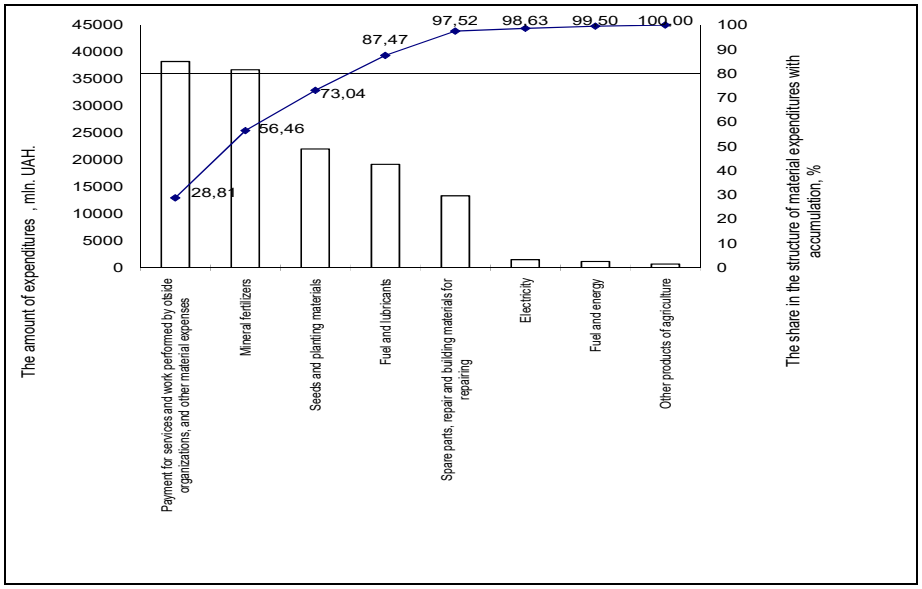
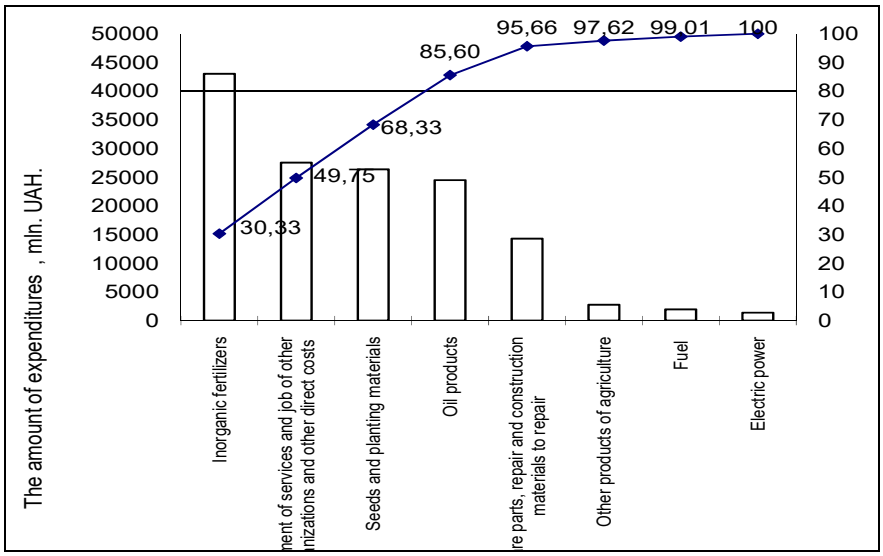
DOI: 10.14807/ijmp.v10i7.901



Graph 1: Elements-based distribution of material costs and Laurence curve (ABC-curve) for plant production in agricultural enterprises of Ukraine in 2016



Graph 2: Elements-based distribution of material costs and Laurence curve (ABC-curve) for plant production in agricultural enterprises of Ukraine in 2017

The ABC-analysis of material costs for crop production in agricultural enterprises of Ukraine in 2016 shows the following expenses sharing:

- group A has 3 positions (payment of services and job of other organizations and other direct costs, inorganic fertilizers, seeds and planting materials);
- group B has 1 position (oil products);
- group C has 4 positions (spare parts, repairs and construction materials to repair, electric power, fuel, other products of agricultural).

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The summarized results of the analysis of material costs for crop production at the agricultural enterprises of Ukraine in 2016-2017 are presented in Table 3.

Table 3: Summarized results of the material costs analysis for crop production at the agricultural enterprises of Ukraine in 2016-2017

Group	Amount of expenses, mln, UAH.		Share according to the sum of expenses		Number of positions	Share according to the number of positions, %
	2016	2017	2016	2017		
A	96951.2	96962.5	73.04	68.33	3	37.5
B	19156.1	24500.8	14.43	17.27	1	12.5
C	16637.9	20440.9	12.53	14.40	4	50
Total	132745.2	141904.2	100	100	8	100

Thus, the group A has the largest share according to the sum of expenses (73.04% in 2016, 68.33% in 2017) and the average share according to the number of positions (37.5%) in the structure of material costs of plant production in agricultural enterprises of Ukraine. The group B has an average share in the structure of material costs according to the amount of expenses (14.43% in 2016, 17.27% in 2017) and the smallest share according to the number of positions (12.5%). Consequently, the group C expenditures have the smallest share in the material costs structure by the sum of expenses (12.53% in 2016, 14.40% in 2017) and the largest share by the number of positions (50%).

Therefore, based on the results of the elements-based ABC- analysis method of material costs for the crop production in agricultural enterprises in Ukraine, it is necessary to apply:

- systematic control of the A-group material costs (payment of services and job of other organizations and other direct costs, inorganic fertilizers, seeds and planting materials);
- periodic control of the B-group material costs (oil products);
- selective control of the C-group material costs (spare parts, repairs and construction materials to repair, electric power, fuel, other products of agricultural).

So, production costs, in particular, material costs, being the basis for determining the cost of production, require operational control and analysis of the material resources rational use, management decision-making and planning of the enterprise future activities. That is why, it is appropriate to divide them into controlled and uncontrolled in order to manage material costs; and this practice depends on the

ISSN: 2236-269X
DOI: 10.14807/ijmp.v10i7.901

authority of the respective manager. At the same time, it is advisable to classify them according to the stages of the technological process taking into account the technological features of the crop production process and in order to control and regulate material expenses during each stage of production. So, expenditures should be divided depending on the technology of growing crops in crop production, which will enable to create and organize the amount of production expenditures at each stage of growing crops: basic soil cultivation, before seeding tillage, sowing, care for crops, harvesting. These stages can be the basis for application in the cost management system Activity Based Costing model.

Activity Based Costing model in crop and livestock production could be an important tool for planning and accounting analysis (KOUTOUZIDOU et al., 2015). Gonzalez-Gomez and Morini (2009) applied Activity Based Costing model for Cost Calculation and management in a multiproduct agricultural framework, using ornamental plant cultivation as a case in point. In their approach internal costs are used instead of accounting data.

The proposed classification of expenditures at the agricultural enterprises provides an opportunity to cost management) in agrarian management with the aim of ensuring the effective control of material costs directly in the process of crop production and sale.

We think that, it is necessary to apply the rationing of material costs to organize the implementation of production programs and to calculate the normative cost in the agrarian management and to use elements of planning, control and expenditures analysis for drafting plans and programs of an enterprise development.

It has been established that the vast majority of agricultural enterprises in the Volyn, Khmelnytska and Ternopil region (47,6%) use a simple method, 9,5 % use a normative method and 3.1% use a redistribution method based on the survey results of the agricultural enterprises in five districts of Volyn region (Horokhiv district, Kivertsi district, Lutskyi district, Manivtsi district, Ratnivtsi district), Khmelnytskyi and Ternopilskyi region. At the same time 55.5% of enterprises use accounting method of the total expenses and identify the total cost for internal needs only. As we see, rationing of expenditures is applied less than in 5% of enterprises. In this case, only some components of expenditures rationing are applied and not at all types of

http://www.ijmp.jor.br v. 10, n. 7, Special Edition ***PDATU*** 2019
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products. At first, it depends on the influence of natural and climatic conditions on the production processes, leading to changes in production technology and the establishment, change and observance of material and labor expenses norms.

The normative method of expenses accounting should be used when calculating the crop production. It is based on the normative cost, which most accurately takes into account the changes in the production process and enables to carry out operational analysis and make strategic management decisions. According to Upchurch (2003) Calculating Actual Cost is "posthumous".

We offer to calculate the standard cost monthly (quarterly, yearly) on the basis of the developed and approved norms of raw materials and standards of mechanized works.

Medium-sized industry expenses standards for the production of major types of agricultural products (works, services) are being developed in Ukraine. As for the enterprises themselves, such crop production norms should be developed in technological maps for the cultivation of each type of crop (in the agricultural enterprises of the Volyn region such documents are very rare: they are only in few enterprises). Thus, only 31% of the researched enterprises develop the expenses norms for the crop production materials.

The study of practical experience in the development of technological maps in the number of agricultural enterprises in Volyn, Khmelnytskyi and Ternopil region showed that 17 agricultural enterprises of 63 respondents keep such maps. This fact indicates a low level of development of internal norms for production and the lack of application of the expenses accounting normative method and normative cost calculation.

We propose the use of budgeting to organize the control of material expenses in the agricultural enterprises effectively, playing a leading role in the management system, providing the process of making managerial decisions with operational information about the actual indicators of material expenses and their deviation from the budget values.

The budgeting process is closely connected with the analysis and control processes, since after the end of the period for which the budgets have been developed, a comparison between the actual indicators and the budget is made and,

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hence the analysis of deviations and identification of their causes and perpetrators. We believe that detection of deviations and, therefore, the control itself should be conducted monthly. This control helps to identify the opportunities for improving the enterprise financial and production activities and planning directions in general. We can conclude based on the research results of Volyn, Khmelnytskyi, Ternopil region agricultural enterprises practice that the expenditures control in agriculture is currently carried out only by 46% of the investigated enterprises.

Practical use of budget planning primarily depends on the specifics of the industry itself and the internal organizational features of each economic entity, and therefore its process will be of an individual character for each of them.

Application of budgeting in agrarian management should take into account the features of this sector enterprises functioning and promote the rational management of cash flows and the adoption of operational and alternative management decisions.

The enterprise management can accept and forecast operational, current and strategic decisions with the help of budgets and, hence influence the change of material resources by making appropriate adjustments in the technological processes stages of goods (works, services) production and sale. Unfavorable situations need to be foreseen before they occur and find ways to prevent and minimize their negative consequences. At the same time, the ability to respond in a timely manner to avoid negative consequences and improve overall results depends on the frequency of budgeting. Thus, Ackoff (2002) expresses the right opinion: “Wisdom is the ability to anticipate the remote consequences of the actions being taken, the willingness to sacrifice the temporal benefits for the greater welfare in future, and the ability to manage what is manageable, but not to be upset of what is not managed”. Consequently, the future results of the company depend on the results of the budget planning, that is, the decision affects the result. Budgeting through the budget system allows us to identify the key issues of business entities before obtaining actual results and prepare to receive such results in advance.

Volyn region agricultural enterprises survey demonstrates that today the process of budgeting in agriculture is in its initial stage and it is not used by all the enterprises. So, only 11 enterprises (17.5%) out of 63 respondents use planning in

ISSN: 2236-269X
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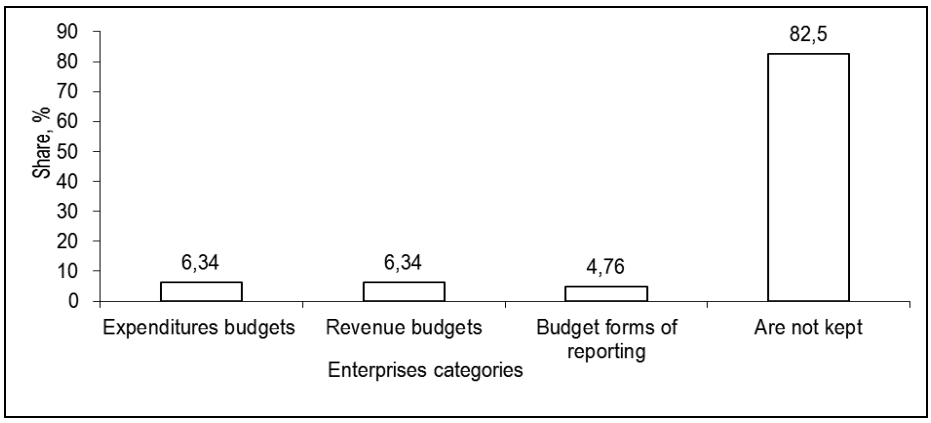
practice. All at once 6.34% of them comprise revenues and expenses budgets, and 4.76% keep the budget forms of reporting (Graph 3).



Graph 3: Structure of investigated agricultural enterprises on the basis of drawing up budgets

At the same time, the features of technological processes of the biological assets cultivation and agricultural goods (works, services) production, the need to influence separate stages of the production process, require the introduction of operational budgeting into agricultural enterprises. Operational and ongoing managerial decisions on the basis of operational budgets aimed at achieving the present but not future tasks, are taken. Normative, relevant and irrelevant expenses are important in this case.

We believe that in agriculture, operational budgets should also include the budget of material costs or the provision of material resources in terms of own-made and purchased stocks (various options: the expenses on seeds, fertilizers at different prices, types, quantities and depending on the type of plant production). Such budgets should be based on technological budgets that depend on the technology of crop production growing: different soil cultivation, different yields, etc.

We have developed a form fragment of the material expenses flexible budget (for group A - mineral fertilizers, seeds, plant protection means) (Table 4), to ensure the crop production, in particular, winter wheat, which involves the use of different types of material resources for each technological stage and appropriate technological operation under condition of mechanized soil cultivation.

At the same time, the expenses on seeds, mineral fertilizers and plant protection means depend on their types and the type of agricultural work and equipment, given in the note to the budget. The form of the budget is characterized

ISSN: 2236-269X
DOI: 10.14807/ijmp.v10i7.901

by several variants of material resources different types of combination with the choice of their optimal use for the corresponding expenses amount. The complete form of the budget should include other types of material resources, including fuel.

Table 4: Material costs Budget of (mineral fertilizers, seeds, plant protection means), UAH

Agricultural Private Enterprise "Druzhba" Product type-winter wheat The area of planting 100 hectare

№	Technological stages of growing	Seeds*	Mineral fertilizers*					Means of protection*						total, UAh.	Productivity, c/he
		reproductive, UAH	Superphosphate	Potassium-magneziun	nitrate ammonia	Carbamide	Ecoleaf	Lambardor	Mars	Vitavaks	Phalcon	Granstar	Danadim		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Primary tillage		15600	14400										30000	
2	Proceeding tillage							6820						6820	
3	Seeding	121600												121600	35
4	Care of crops				39000	1900	46000				12960	6976		106836	
5	Harvesting														
Total		121600	15600	14400	39000	1900	46000	6820			12960	6976		265256	

** Note. Expenses on seeds, fertilizers and plant protection means*

№ №	Materials	unit of measurement	Number per unit	Number per the entire amount	Cost, UAH	Amount, UAH
1.	**Mineral fertilizers**					
	nitrate ammonia (plowing, vegetation)	t	2 c/he	20	1950	39000
	Carbamide (vegetation)	t	0,1 c/he	1	1900	1900
	Ecoleaf (vegetation)	l	4 l/he	400	115	46000
	Superphosphate (plowing)	t	2 c/he	20	780	15600
	Potassium-magneziun (plowing)	t	2 c/he	20	720	14400
2.	**Seeds**					
	reproductive	t	3,2 c/he	32	3800	121600
	Superelite	t	3,2 c/he	32	8000	256000
3.	Plant protection means					
	Lambardor (seeds poison)	l	0,15 l/t	4,8	1421	6820
	Mars (seeds poison)	l	0,2 l/t	6,4	97	620,8
	Vitavaks (seeds poison)	l	2,5 l/t	80	110	8800
	Phalcon (during growth and earing)	l	0,6 l/he	60	216	12960
	Granstar (during growth)	кг	20 g/he	2	3488	6976
	Danadim (against weeds)	л	1 l/he	100	80	8000
	Zinc phosphide (against mice rodents)	кг	0,3 kg/he	30	105	3150

We think that for a rational combination of the short-term and operational budgeting, the agricultural enterprise should develop a budget for a month, which in a result becomes a part of the quarterly (annual) budget and can be the main

ISSN: 2236-269X
DOI: 10.14807/ijmp.v10i7.901

working document for managing the current activity. At the same time, the quarterly budget is compiled on a monthly basis, annual (summary report) - by quarters at the end of the year, budget for the next year should take into account budget data for the planned year.

Thus, it is possible to assess and predict the activities of individual liability centers and the enterprise on the basis of the result of operational budgets and hence the financial ones as a whole depends on change of any indicator of operational budget or the choice of the most optimal variant of management decisions under the most effective conditions of the various influence factors combining.

Consequently, the main task of operational budgeting is to ensure a close relationship between the resource and financial capabilities of agricultural enterprises in order to optimize the expenditures and increase the efficiency of the means production use to achieve the best indicators of the financial budgets.

4. CONCLUSIONS

Thus, the conducted ABC-analysis of material costs for crop production at the agricultural enterprises of Ukraine in 2016-2017 makes it possible to distribute expenditures into A, B, C categories by the amount of expenses as the chosen parameter.

The conducted distribution is a confirmation of practical application of the Pareto principle or the “rule 20 to 80”, the essence of which is that 80% of the values in qualitative criterion is determined by 20% of the values in the number of total objects selected for the study. Surely, these limits are only approximate guidelines and may have some deviations for various objects of analysis. In this case, 73.04% in 2016 and 68.33% in 2017 of the material expenses for crop production at the agricultural enterprises of Ukraine amounted to 37.5% (or 3 out of 8) items of these expenditures.

The conducted ABC-analysis of material costs for crop production at the agricultural enterprises of Ukraine in 2016-2017 makes it possible to develop recommendations for types of control over A, B and C groups expenditures and to focus on the most significant positions in the material expenses compounds. In plant

http://www.ijmp.jor.br v. 10, n. 7, Special Edition ***PDATU*** 2019
ISSN: 2236-269X
DOI: 10.14807/ijmp.v10i7.901

growing these are the payment of services and job of other organizations and other direct costs, inorganic fertilizers, seeds and planting materials.

The authors identified the stages of cultivating crops (basic soil cultivation, before seeding tillage, sowing, care for crops, harvesting) taking into account the technological features of the crop production process which became the basis for application in the cost management system of the Activity Based Costing Model.

According to the authors the budget form of material costs for crop production should be directed at the application of such methods that would provide a reliable warning and timely detection of economic violations facts connected with the use of material resources various types, in particular the use of costs budgeting methodology with the aim to adopt the alternative management decisions while growing crops.

The developed form of the material costs budget for the plant production gives an opportunity to choose the most optimal one among several variants of the material resources different types of combinations, which will allow applying the operational control of material resources and making adjustments to the budget directly during the production of goods. It is possible to accept and forecast decisions for the next period of the agrarian management on the basis of detected deviations from the budget data of the current year, taking into account shortcomings and avoiding them in future.

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ISSN: 2236-269X
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