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STRATEGIC COST MANAGEMENT AS INSTRUMENT FOR IMPROVING COMPETITIVENESS OF AGRIBUSINESS COMPLEX¹

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Summary

Cost accounting as a segment of an integrated accounting information system by generation of the relevant information provides significant support for both financial and managerial accounting. The above information represents the information base for decision making of internal and external users (management, investors, creditors and other stakeholders). In this paper a special attention is paid to contemporary systems of cost accounting, the application of which can be seen as an integral part of the effort undertaken in order to measure and control costs, since cost management is one of the indispensable elements to achieve, maintain and improve the competitiveness of enterprises. Having in mind the significant potential the Republic of Serbia has in the field of agricultural production, the aim of this paper is to highlight the challenges and specifics of cost management in the agribusiness complex enterprises. Hence, this paper discusses the modern systems of cost accounting as well as the cost management methods suited to the specific agricultural management activities, which could help to the local companies in efforts for share in the global agri-food products' market.

Key words: *cost accounting, cost management, ecological costs, agribusiness complex, competitiveness.*

JEL: *M41, Q13, Q56*

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Introduction

The contemporary business conditions have been characterized by intensive dynamics of changes as well as the growing competition in the global market. Many companies all over the world are ready to participate in the race for customers. This is among other things due to the quality of their products, the optimal delivery deadlines, product innovation and low operating costs. Although the costs are only one of the elements, they are of the key importance. This is because any inefficiency in business has its reflex in the costs. Also, all efforts to improve the quality and innovation of the product, the delivery, the development of sales channels etc. have been reflected onto the costs. This fact suggests that the costs represent a kind of double-edged sword - on the one hand, the high costs cause the price non-competitiveness of the product, if the costs tend to be shifted to the customers through the selling prices, while on the other side, the costs above the optimal level are followed by inability of their coverage from the operation revenues and, consequently, by the emergence of loss in the income statement.

The above-mentioned statement clearly shows the importance of one of the key strategies for gaining the competitive advantage of an enterprise - the strategy of leadership in costs. It is identified as the ability of the company to produce its products and distribute them to the customers at costs that are lower than those of the competing companies.

Successful cost management primarily requires the precise cost measurement. It is often repeated in business circles the following sentence: "That which cannot be measured, cannot be controlled". For the measurement of costs it is competent the cost accounting, which uses different techniques or cost accounting systems in the long period of time. Conventional cost accounting, which includes a system of calculation based on the actual costs, the system of standard costing and accounting system of the standard variable costs, had its untouchable place and importance in conditions where the human labour has dominated in the production process in relation to the mechanical work, i.e. when labour costs had a significant share in the total cost structure. Although this approach is suitable for the purposes of external financial reporting, information obtained on the basis of traditional costing systems are not suitable for managing the challenges faced by modern enterprises.

The solutions could be certainly found in the modern cost accounting systems that eliminate the weaknesses of the conventional system and provide more precise information. Just precise cost accounting and adequate system of cost management are important determinants of the enterprise cost-efficiency, and thus the factors that determine a long-term success of the enterprise. This is in the sense that the generated cost information are the basis for decision-making of numerous business decisions – e.g. the business planning for the upcoming periods, the control of current operations, an identification of all inefficiencies and deviations from the defined standards, as well as the corrective actions taking over. Through proper identification and measurement of costs, an enterprise will be able to manage the costs. Effective cost management is a source of the superior competitive advantage of an enterprise.

Methodology and Data Sources

The aim of this paper is to analyse the importance and range of the modern costing systems' information support to the management of the agribusiness enterprises in their efforts to achieve a sustainable competitive advantage.

In the paper it has been used a set of different methodological tools that best fit the character of the analysis given of the title topic. In the process of reviewing and analysing the strategic cost management items and in interpretation of the costing systems as an information base for the efficiency decision making process, there have been applied the scientific research methods usual for this type of work, such as the method of description, methods of analysis and synthesis, systematization method, the method of comparison, the inductive method of reasoning, as well as the desk research method. The contribution of this paper is reflected in the review and analysis of new approaches and methods for cost accounting which are not much used in practice of agribusiness companies nowadays, but could be used as the possible choices for the more adequate cost accounting in the future and as the basis for decision making process aiming at minimization of the costs. The sources of literature used for this research were the domestic and foreign scientific literature from the domain of the considered issues, as well as the data sources available on the Internet websites.

The Importance of Competitiveness for the Long-term Success of the Agribusiness Complex

The complex business conditions, the presence of global competition and limited resource require from the enterprise to find a way to conduct its business much more efficiently than other companies, i.e. that it makes with the lower costs. It is no longer a matter of choice, but a condition for survival of the enterprise. The search for sources of core competence is in the basis of these efforts. The essence of competence must be defined in relation to the enterprise customers. So, the goal is to create and deliver a greater value to the customers with identical costs as the ones of the competitive enterprises, or to create and deliver an identical value to the customers at the lower costs. Under the value for the customers it has to be understood all the tangible and intangible benefits that customers enjoy on the basis of use of the product. Previous definition implies the technology functionality, the product integrity as well as the market access (Milisavljević, 2000). When the sources of competitive advantage are placed in the context of the target markets, it is possible to identify four generic strategies - low costs, differentiation, focus on costs and focus on differentiation. The first two strategies are related to the mass market, while the other two concern the market niche (Đuričin and Janošević, 2006). Although the search for sources of competitiveness requires a broader conceptual framework, for the purpose of this research it has been primarily considered the question of cost management as a premise of cost leadership. It is the enterprise's ability that the design, production and distribution of products should be implemented in a more efficient way, i.e. at the lower costs than the competitive enterprises.

Strategic Cost Management

As previously pointed out, costs are not only one a source of competitive advantage, but also its close limiting factor. This is because they are closely related to other sources of competitive advantage. Low costs are the premise of the value generating. Factors that contributed to the fact that individual firms produce identical product at different costs are determined primarily by differences in technology, then by available capacities and the existence of a major or minor restrictions regarding the availability of certain resources i.e. production factors. For the management of costs, it is important to identify their drivers. These are the factors which cause the appearance of the cost, which may be the structural and executional ones. The aforementioned classification is arising from the structural choices and executional skills that determine the competitive position of the enterprise. The structural drivers of costs are related to the size, experience, technology, while the executional drivers are relates to the share of labour in the production process, then use of the capacity, product configuration, TQM (total quality management) etc. (Shank and Govindarajan, 1993).

Strategic cost management aims to facilitate reducing of costs with simultaneous improvement of the strategic enterprise position through the creation of greater value for customers. Previous conclusion suggests that the sources of competitive advantage are associated with the costs, which justifies the efforts in the cost management domain. Strategic cost management strongly relies on strategic cost analysis, which refers to the creation of information basis for identifying superior strategies for the enterprise cost differentiation, which will further enable the achievement of sustainable competitive advantage. On the basis of this analysis it is the relationship between the goods' and services' production costs on the one hand, and delivered value on the other one. This analysis assumes the value chain analysis, then the analysis of the cost drivers as well as the analysis of the enterprise competitive position. The key areas of consideration include the production process and the associated costs of acquiring resources, labour force, investment possibilities as well as establishment of the sales price, in order to consider the strengths and weaknesses of the enterprise and accordingly to define appropriate strategies (Foster, 2006).

Modern Systems of Cost Accounting

Successful cost management primarily requires their precise measurement. In the business circles it is often highlighted the maxim: "What cannot be measured, it cannot be controlled". For the measurement of costs it is competent the cost accounting, which has already applied for a number of decades various techniques i.e. cost calculation systems. The conventional cost accounting system which includes the calculation at actual costs, then the accounting system of standard costs as well as the accounting system of the standard variable costs, had its place and importance in conditions where human labour has dominated in the production process (where the direct labour hours are considered as one of the key drivers of costs). Also, they have an importance in the production conditions of the homogeneous products and mass production. If we look at the agro-business complex today, it is clear that the production programs of many enterprises within the field of agri-food sector have

wide range of products. Although this approach suited to the needs of external financial reporting, information obtained on the basis of traditional costing systems are not always suitable for the management of modern enterprises. Hence, in the professional and scientific circles there have been developed numerous modern techniques of cost accounting in order to be overcome the limitations characteristic for the conventional cost accounting systems.

The organization and implementation of each of the cost accounting systems require adequate human and material resources and initiate certain costs. Although at their disposal there are a number of the cost accounting techniques, the enterprise must define a particular approach in the cost determination. In relation to this, it is necessary to define the appropriate conceptual framework for the cost management in an enterprise. The company management is facing with the question: Which cost accounting system to choose?

When selecting a system of cost accounting, it is necessary to consider the following factors (Maher et al., 2012):

- system must be oriented to the decision-making process i.e. it has to provide relevant information for the management of enterprise;
- information obtained should enable the planning and control of business operations;
- to apply approach of different costs for different purposes, which should provide information on different costs, i.e. on variable costs for the purposes of decision making on the selection between the various available alternatives, while on the full or absorption costs relevant for the needs of external reporting;
- to achieve the balance of costs and benefits in terms that benefits of certain information utilization must outweigh the costs of their preparation.

As pointed out above, the selected cost accounting system has to produce information that will enable making numerous decisions critical to business success in the long run. Some of the decisions are relating to the fact whether to buy a specific product component or to produce it by itself, whether to accept a special order, whether to introduce a new product or to eliminate certain product from the product mix, whether to rearrange the existing product range etc.

When we are talking about the planning and control, the cost information should indicate to the management on what to do (in the case of agribusiness enterprises what to produce), then about the production volume, how much are the actual costs, the amount of deviation from the planned costs, the causes of deviations, as well as to enable the provision of recommendations for corrective actions.

Activity Based Costing

This concept is based on the activities implemented by the enterprise, but not on the narrow organizational parts i.e. cost centres. Activities can be defined as a set of tasks or groups of work operations related to the value creation process, i.e. the process of resources' spending in order to be created the result (product or service). From the cost accounting point, an

activity is realized as a set of activities with homogeneous character directed towards the creation of new values, i.e. the values for the customers. The advantage of this concept over traditional methods is reflected in obtaining more precise information on the costs of products and services (Popović and Vasilić, 2013). ABC information is widely used to assess continuous improvement and to monitor process performances. Also, this information is basis for making strategic decisions and for improving the profit performance (Cagwin and Bouwman, 2002).

When calculating the product costs, many manufacturers of agri-food products as keys for the allocation of overhead costs are using the revenues from sales of certain products. Also, it is dangerous to allocate all costs onto the produced products, since most of the costs do not vary with changes in production volume. Further this results in consequence that the selling prices of certain products are significantly higher than the prices of other manufacturers, which certainly does not speak in favour of achieving and maintaining a superior competitive advantage. By clearly showing the relationships between particular activities and overhead costs, the *Activity Based Costing (ABC)* allows much more accurate calculation of the costs, i.e. the allocation of indirect costs.

The essence of the *ABC* method consists of efforts that all activities in the enterprise should be differentiated onto the *primary activities*, i.e. those that directly contribute to the implementation of the tasks of a particular organizational enterprise unit and the *secondary activities*, which are a kind of support to the primary activities. For example, in an enterprise engaged in the production and processing of milk, the primary activities would include procedures for production and thermal treatment of milk, production and delivery of dairy products, while the secondary activities should be related to the process of the milking cows' feeding and watering as well as veterinary supervision of the cows.

Classification of activities can be carried out on the ones that add value of products and services (due to which customers are willing to bear the costs of such activities over the product price) and those activities that do not add value but increase the time and costs of production. In this regard, the *ABC* method contributes to an increase of the business efficiency by eliminating non-productive activities. The basic premise of *ABC* method is that the products and services consume activities, while activities consume resources and thus cause the occurrence of the costs (Mowen et al., 2012).

ABC method predicts that costs are allocated to activities that consume resources of an enterprise. These are as pointed out all the activities necessary to be produced a single product or the line of products. Then there have been identified the challengers for each defined activity that consumes resources. A number of cost drivers depend on the volume of production, while the majority of the cost drivers will be determined by the complexity of production, marketing and distribution. The greater complexity of the process means a greater number of the cost challengers. Some of the identified activities may have a greater number of cost drivers (machine hours, labour hours, the value of material, the number of

machine preparation, etc.). After allocation of the resources' costs to activities, the costs are further allocated from the activities to the cost objects i.e. the final products (Malinić and Janjić, 2012).

Although this method suffers criticism that it is expensive to be implemented due to the fact that it is necessary to analyse the overall activities in the enterprise, it is important to note that an effective *ABC* system contributes to an identification of the bottlenecks in production, which further contributes to a significant reduction of operating costs.

Target Costing

Starting from the changeable business environment and more intensive competition, one of the mechanisms to preserve the enterprise's market share is to define a target price that buyers are willing to pay and that its business (in terms of costs) adapts to the price defined in such way. This concept of management and cost reduction should be applied in the earliest stages of the product life cycle. Namely, the timely involvement in the design and development of all participants' products in the value chain, it is done adapting to market demands. Starting from the defined market price and the fact that the difference in price can identify a buyer to purchase a particular product, this concept realized costs as an input, and not as a result of the process, which means that the selling price determines the level of allowed costs. In other words, the costs are determined by the market, not by the enterprise. In the first step, it is necessary to determine what product should be offered to the market at a price that a potential buyer wants to pay, and in which it is also contained a sufficient target profit. Also, it is necessary to determine whether the existing enterprise competences provide the ability to produce a product at target costs, and that the quality and functionality of the product should not be reduced (Malinić and Janjić, 2012). The target cost amount must cover all of the expenses for producing the product: costs of inputs, costs of production and other operating costs such as marketing, sales and research expenses (Ellram, 2002).

The *Target costs* are defined as the difference between the anticipated price and the required return. In practice, target profit often is driven by medium term corporate profit plans, which reflect the returns demanded by the financial markets (Woods et al., 2012). This method is simple to apply in circumstances where prices are determined in advance or when they can be determined based on the products of other enterprises in the branch. Just one of the key problems with the application of this technique in agri-business complex is the fact that product prices often fluctuate, due to which it is not rare that in some years the manufacturers are making a profit, while at other periods there is a complete absence of profits, although there are no significant differences in production costs. Hence, determination of target price, as a starting input for defining the target costs, assumes market research, but also understanding the broader context of business. Within mentioned it is also included the problem of defining by the state the purchasing price for certain agricultural products, which varies from year to year significantly, not infrequently leading the producers in unenviable position. Hence, it is suggested that in such cases, when defining the target price, it is starting from the lowest price in the range of available prices for the recent few years.

Other issues that should be considered when defining the target prices are the following (Jack, 2008):

- Whether it can be negotiated on prices on the basis of costs and returns;
- Whether the prices can be determined on the basis of financial instruments (futures, options, forwards);
- Which is the lowest price at which it is possible to operate with a positive result;
- What are the potential risks if the defined price should not be realized?

Regarding the second element, i.e. the target profit or margin, it should cover interests, taxes and a part of the owners. What is specific in this case is the need that the fixed costs, that cannot be avoided (i.e. uncontrollable costs), should be added to the amount of the target profit or margin. In the case of one enterprise or a farm it is the absolute amount, while in the case of multi-enterprise organization the mentioned amount is determined as a percentage rate (Jack, 2008).

Finally, a problem with the *Target costs* contained in the fact that it is not possible to predict the prices of all inputs (because of the mentioned differences in the guaranteed purchase prices of certain products, but also because of the variable business operating conditions and a high degree of the production dependence on climate). In the case of agribusiness enterprises, the target costs include direct costs such as seed, feed, then the labour costs, machinery and equipment costs, maintenance of the facilities, quality costs, environmental costs (which will be more analysed later in the text) and numerous other costs. So, all these costs should be incorporated into the remaining part of the target price, which undoubtedly requires a high degree of rationalization of the business operations.

Achieving of rationalization requires that the *Target cost* should be more detailed decomposed onto the cost components. It is evident that a considerable amount of costs is related to the costs of materials and product components, because of what in reduction of the costs an exceptional place have the efforts undertaken by suppliers and other participants in the supply chain aiming at reduction in the purchase price of inputs used by manufacturing enterprises (Lalević, 2007).

In connection with the *Target costing* it is important to note that this concept is certainly not exhausted only by reducing costs. On the contrary, it is focused on continuous improvement of the enterprise business operations as well as the product operations aiming at an increase of the value for customers as a fundamental prerequisite for acquiring, maintaining and improving the enterprise competitiveness.

Cost Accounting through the Supply Chain

One of the key concepts that can help enterprises in their efforts to achieve and improve competitive advantages through cost reduction is the cost accounting through the supply chain. This comes from the fact that the issue of competition in modern business conditions is no longer viewed only in narrow boundaries between individual enterprises, but much

wider - between their supply chains. The supply chain includes all the participants, from the primary producers, suppliers, through distributors, which participate by their activities in the flows and transformations of goods from their initial stages, i.e. the raw material basis, to the final product for the consumer. In addition to the flows of goods, through the supply chain they are circulating certain information as well (Handfield and Nichols, 1999).

When it comes to the agribusiness complex, an experience shows that participation in the supply chain provides the following advantages (Rockel et al., 2002):

- reducing of losses in the storage and transport thanks to optimal coordination of activities in the chain;
- the product freshness and quality could be significantly improved;
- increased level of food safety;
- integrated supply chain that operates as a network generates products with a high degree of added value;
- significantly increase of the sales revenue;
- advancement of knowledge about the market for primary producers and at the same time an increase of their margins.

The value chain analysis is performed in order to be optimized and coordinated the links within the value chain. This is to contribute to greater satisfaction of customers in terms of cost efficiency, higher quality and faster product delivery. Hence, it is necessary to consider how the activities in the supply chain have been implemented and what looks like their mutual interaction (Hansen et al., 2009).

To achieve success in their efforts to make competitive advantages of particular supply chains, it is of crucial importance their stabile cooperation as well as an integration of efforts, in order that the jointly created value for customers should be significantly higher than the value that would be achieved through unsynchronized and separate efforts of individual members in the supply chain. It is important to note that suppliers and other participants make their own decisions about whether to participate in these efforts. Hence, the trust between business partners is considered a crucial element for the success of business improvement initiatives and reducing costs. Benefits associated with inter-enterprise collaboration include: increase the market share, share and reduce cost of product development, decrease risk of failure and increase quality of product, reduce inventory, gain rapid access to new markets (Bititci et al., 2004).

When it comes to the costs in the context of acquisition the competitive advantage of the supply chain, the aim is that amount of reduced costs reached on the basis of cooperation among participants in the supply chain exceeds the amount of savings in costs that the participants should achieve by their individual efforts (Sekerez, 2007). Transferred into the agribusiness complex, the goal is that the supply chain (e.g. in a dairy plant) achieves the greater savings in costs and in that way to deliver the greater value to the customers than the individual farmers, suppliers, distributors and other participants could achieve without such cooperation.

In the efforts to achieve a competitive advantage, a central position certainly belongs to the producer which should initiate the mentioned cost reduction. In other words, the aim is not to shift the costs to the next participant in the supply chain (thus the costs should be only additionally increased), but that through effective control within the enterprise itself, but also within the wider supply chain, the superior value should be delivered to the customers. This further requires a detailed analysis i.e. the breakdown of the supply chain onto the strategic segments, as well as identifying the drivers of costs in order to be detected the areas where costs can be reduced, i.e. where value can be increased. The next logical step is to reduce and eliminate activities that provide no contribution to creation of value, as well as the more efficient management of those areas that are key drivers of value creation (Malinić and Janković, 2011).

For these purposes it is often carried out the reconfiguration of the value chain, which should contribute to greater flexibility in the production process, then to the higher product quality, reduction in inventory levels and thereby in reduction of costs arising from holding of inventory (for storage, insurance, obsolescence, deterioration, interest costs based on the binding of funds in stocks), then reduction of waste due to a more efficient implementation of business processes, which directly contributes to the cost reduction (Malinić and Janjić, 2012).

In the case of a dairy plant, reconfiguration of the value chain may involve relocation of production and storage, greater flexibility of distribution process, changes in the schedule of the unprocessed milk delivery delivered by the cooperating partners, the choice of new cooperating partners that can provide the required quantity and quality of milk, but also changes in deliveries of finished products to the stores. This is especially because the costs of storage and transport can have a significant share in total cost structure and further complicate the struggle for achievement of competitive advantage. In this context, it is rational to consider the alternative of switching to *Just-in-time* inventory management system.

Lean Costing

The *Lean concept* is introduced into enterprise in order to creating value for the customers. The *Lean* reflects the strategic choice aimed to improve the competitiveness (Rao and Bargerstock, 2013). On the basis of the traditional approach to production, there are efforts to achieve economies of scale, then overproduction, as well as the creation of the stock surplus. This approach is diametrically opposite to the nowadays more accepted concept of lean production, which is characterized by advanced production techniques such as the cellular production, then the imperative of teamwork, *Just-in-time inventory management system*, *Total Quality management* and *Total Preventive maintenance* (in order to eliminate bottlenecks in production), then the *Supply Chain management*, etc. (Shah and Ward, 2003).

Although the *Lean concept* has been originally introduced by the *Toyota* (famous Japanese car manufacturer), the experience has shown that the concept can be successfully applied in all production branches including the agribusiness complex. Namely, the *Lean* philosophy

is infused by the efforts of reducing costs through the elimination of wastage (unproductive spending) in an enterprise with simultaneous improvement of the product quality and timely appreciation of the customer requirements. In fact those are the activities that are aimed at continuous improvement of business processes, in order to fully meet the needs of customers. It is well known that customers want high quality products with the lowest possible price, and that the small differences in price between the particular products may influence the choice of customers.

The fact that the *Lean* production concept is significantly different from the conventional production concept implies that for the purposes of the cost measuring and managing it has to be applied a slightly different system of cost accounting. This is especially because the *Lean* system is focused on value, particularly the value for customers. Furthermore, the processes that are necessary for the production of the products have been differentiated by the *Lean* system onto the flows of value and activities that generate value for customers. Hence, from the cost aspect it is necessary to determine the costs of particular activities. On the basis of obtained costs is possible to identify areas for improving business operations and consequently for reducing the costs. In order to obtain reliable information for the purpose of cost management, the performance can be measured at the level of the working cells (shifts in production), of the value flows and at the level of an enterprise (Shah and Ward, 2003).

The performances on the level of the working cell are monitored several times a day, for each working shift, in order to be immediately noticed the omissions in the work and to be prevented their repetition. As the omission it can be realized the spending that is larger than the standard one, or the inability to be reached a defined production quota. This would provide timely information, the data could be collected relatively easily and at low costs, in the short term it is possible to take corrective actions, while the employees are encouraged to actively participate in implementation of the *Lean* production objectives (Shah and Ward, 2003).

The performance at level of value flows are related to the efficiency of the value flow to deliver the required value for the customers. This assumes that it should be carried out the sharing of employees and machinery onto the value flows. Each value flow consists of the certain process and activities. Data (financial and non-financial) are collected on a weekly basis, and all expenses incurred within the value flow have the character of direct costs. The costs incurred outside the value flow relate to the maintenance of business operation and as such they are not relevant for the decision making process from the aspect of the value flow (Kennedy and Widemer, 2008).

As it was mentioned before, the *Lean* concept can be successfully applied in the field of agribusiness as well. In this regard, it is interesting the project initiated by the Swedish government in 2010, which was aimed at supporting agricultural enterprises in order to operate in accordance with the *Lean* philosophy. The goal of these efforts was focused on the “cleaner” agricultural production and strengthening of the agricultural sector competitive advantages. Concerning the farmers- co-operator of the large manufacturing enterprises,

they could also be included in the program through appropriate training. The aim is to organize the business so that every aspect is functioning efficiently, without stoppages and unnecessary wastage of resources, and that the human, material and biological resources contribute to the implementation of the *Lean* objectives. In this way the individual tasks will be realized more efficiently and in a shorter period of time, which will not only reduce costs, but will increase the share of leisure time that farmers can use in more creative ways. This reflects the basic idea of the *Lean* concept, which is that all efforts for improvement are directed towards an increase of satisfaction both for customers and employees.

Since the *Lean* idea is based on the continuous improvements, this assumes it is necessary to be detected problems in the production. For example, in a dairy plant the sources of the business non efficiency could be the following: inadequate maintenance of the milking equipment, frequent breakdowns and consequent stoppage in production, irrational cattle seating, the production volume exceeding the demand, ignoring the suggestions for improvements, misinterpretation of the tasks by the employees, errors in the selection of animals etc. The goal is to be eliminated the identified deficiencies, to be maintained the high quality of products and satisfaction of the customers, to be provide the strategic leadership and finally to be increased the profitability.

Since it has been increasingly paid attention to the environmental issues and that agriculture emerges as a significant source of greenhouse gas (GHG) emissions, the *Lean* concept through reducing waste can significantly contribute to solving environmental problems and hence the climate problems. In the production of milk, for example, this can be achieved by more efficient use of feed, fuel and electricity. What is important is to reduce the amount of GHG emissions per unit of product (in our case per litter of milk). This will not only improve the business operations of mentioned dairy plant, but the entire supply chain.

It is also important to note that the *Lean* philosophy does not require significant investments; this is the time to invest in thinking and problem solving. What is crucial is that through the troubleshooting process there has been acquired adequate knowledge that will help in achieving and maintaining the competitive advantages.

Environmental Costs as a Determinant of the Decision Making Process

In recent years, globally there have been increasingly manifested the problems associated with climate changes. The considerable impact in this process has the emission of harmful gases that produce the greenhouse effect. It is known that certain branches of agriculture and processing industries are important emitters of these gases. In addition to that, in agricultural production there are regularly used pesticides and other chemicals, fuel, water, which may have an unfavourable impact on the environment. The legal regulations of almost all countries of the world have introduced certain environmental laws and consequently high levies to limit pollution. In this regard, there appear the significant costs for enterprises concerning payments to different environmental taxes and penalties for disrespecting of the law. Increasingly rigorous legislation suggests that these costs tend to rise, which can certainly nullify the efforts of enterprises aimed at

reducing costs and maintaining of profitable business operations if they do not under taken adequate measures.

The practical experiences suggest that in many cost calculations the component of the environmental costs remains invisible. This hidden costs include the up-front environmental costs, such as search costs relating to finding the environmentally-conscious suppliers, initial design costs of environmentally preferable products, regulatory costs which are often obscured in overhead costs, etc. (Deegan, 2008).

This further has resulted in wrong information on the profitability of particular products and, more importantly, causes the making of wrong business decisions. Namely, failure to identify the causes of these costs (products whose production significantly degrades the environment) not only can prevent the advancement of the enterprise competitive position, but often these products appear as cannibals of the profitable products due to the increase of total expenses and endangering of the enterprise survival. In addition, a negative reputation in the field of environmental protection does not support the ability to increase sales of the enterprise. Hence, it is important to identify and carefully analyse the environmental costs for each product that the enterprise produces.

These costs can be classified into the following groups (Hansen and Mowen, 2010):

- *the costs of prevention* (evaluation and selection of suppliers, evaluation and selection of equipment, design of process and product, development of system for management of environmental issues, recycling of the products, the costs of ISO 14001 certification);
- *the costs of detection* (audits of environmental activities, inspection of products and processes, development of a system for measuring environmental performance, testing whether there was contamination of water, air and soil, measuring of the contamination level);
- *internal failure costs* (costs of operation and maintenance of equipment for pollution control, treatment and disposal of toxic waste, licensing, write-offs remaining after recycling);
- *external failure costs* (cleaning of contaminated soil and water, compensation for occupational injuries incurred due to environmental excesses caused by the enterprise, missed sales due to inadequate environmental performances, inefficient use of materials and energy).

Having at disposal precise information on the environmental costs undoubtedly increases the quality of management decisions, while by their timely consideration and through appropriate changes in design of products and business processes it is possible to eliminate unfavourable environmental influences.

Conclusion

In Republic of Serbia agriculture is a significant potential for economic development and at the same time it has an important place in the creation of GDP. However, it could be often

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heard the complaints that Serbian economy as well as agrarian economy are not sufficiently competitive. Problem is, among other things, contained in the fact that many bearers of these activities (agricultural producers and processing industry) do not possess the relevant knowledge and ideas that would improve their competitive position in the market. One of the possibilities is in the operating costs' reduction together with maintaining and improving the product quality and functionality of the product. Effective cost management requires an adequate information base that could provide relevant information.

The limitations of conventional cost accounting systems observed in the practice initiate a need of more efficient cost identifying and accounting as the information basis for the need of management in the decision making process. The answer has appeared in the form of modern cost accounting systems - *Activity Based Costing*, *Target Costing*, *Lean Costing*, *Cost accounting through the supply chain* etc. It is important to stress that management of costs and their reduction is not an end in itself. On the contrary, behind each cost accounting is standing the corresponding concept of business management in an enterprise. These concepts are primarily focused on identifying all inefficiencies in current business operations in order to provide a basis for their elimination and improvement of business efficiency. Further it requires introduction of innovation in business, continuous improvement, analysis of the value chain, not only at the enterprise level, but also in the entire supply chain. Ecological aspects of business operation and consequent environmental costs are also an important information base for decision-making of management, as well as for the acquiring, maintaining and improving the competitive position of the enterprise. Only through the comprehensive analysis of the enterprise business operation and the costs incurred it will be possible to create superior value for customers in a more efficient way than the competing enterprises do and to conduct the profitable business operation in the long run.

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STRATEGIJSKO UPRAVLJANJE TROŠKOVIMA KAO INSTRUMENT UNAPREĐENJA KONKURENTNOSTI AGROBIZNIS KOMPLEKSA

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Sažetak

Računovodstvo troškova kao segment integrisanog računovodstvenog informacionog sistema produkovanjem relevantnih informacija obezbeđuje značajnu podršku kako za finansijsko, tako i upravljačko računovodstvo. Navedene informacije predstavljaju informacionu osnovu za odlučivanje internih i eksternih korisnika (menadžmenta, investitora, poverilaca i drugih stejkholdera). U ovom radu posebna pažnja biće posvećena savremenim sistemima obračuna troškova čija primena se može posmatrati kao sastavni deo napora preduzetih u cilju merenja i kontrole troškova, budući da upravljanje troškovima predstavlja jedan od neizostavnih elemenata postizanja, održanja i unapređenja konkurentnosti preduzeća. Polazeći od značajnih potencijala koje Republika Srbija ima u domenu poljoprivredne proizvodnje cilj rada je da ukaže na izazove i specifičnosti upravljanja troškovima u preduzećima iz agrobiznis kompleksa. Otuda se u radu razmatraju savremeni sistemi obračuna troškova i metode upravljanja troškovima prilagođene specifičnostima poljoprivredne delatnosti koji menadžmentu domaćih preduzeća može pomoći u borbi za globalno tržištu poljoprivredno-prehrambenih proizvoda.

Ključne reči: računovodstvo troškova, upravljanje troškovima, ekološki troškovi, agrobiznis kompleks, konkurentnost.

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