CALCULATION OF THE PRICE OF CEREALS ON SMALL AND MEDIUM-SIZED FARMS IN VOJVODINA

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Abstract: *The main goal of the study is to use scientific methods to provide insight into all the costs and expenditures arising from cereal production on farms in Vojvodina. The costs include direct (individual) costs, such as production materials and mechanical works, and indirect (general) costs, such as property taxes and insurance. The paper deals with the costs calculated with the rent, the costs calculated without rent, 10-year increase in cereals yield, 10-year price increase, the increase of parities for production materials and combine harvesting, deterioration of business conditions and other factors that affect the profitability of conducting business in this sector of crop production. The subject of this study is price calculation on farms in Vojvodina in the period from 2007 to 2017. In order to accomplish the task of the study it was necessary to apply different methodological procedures, including the following methods: analytical-synthetic method, abstraction and concretization, generalization and specialization, comparison and classification, generalization and statistical methods. The paper aims to provide a theoretical and practical contribution in defining long-term directions in production on farms in Vojvodina.*

Keywords: *calculation, price, costs, rent, farms, Serbia.*

INTRODUCTION

In economic literature, the concept of calculation commonly refers to the computation process aimed at determining the cost price of a product, and in our case, of agricultural products. After considering a number of cited definitions, it can be concluded that the definitions of calculation have much in common and that each author discussing calculations refers primarily to the computation procedure, cost accounting and calculating the price of output (Blaško, 1968). Calculation is thus a computing method that calculates the cost price, the selling price and the purchase price. The cost price includes all the costs and expenditures arising from the production of the output, the selling price represents the cost price increased by the expected profit, while the purchase price is determined based on the supplier's invoice, which represents the purchase price of the product (Malinić, Milićević, Stevanović, 2013). Calculating is not only determining the cost price, but also determining the results of business operations, which is definitely a more important goal. If calculation is reduced only to determining the cost price, then the basic function of calculation in the reproduction process is set too narrowly. If the role of calculation is expanded, then it will be defined as a computation procedure for determining the economic efficiency of all aspects of a company's business operations and of all the outputs the company achieves (Slović, 2010). The most important objective of calculation is control of the most important costs affecting both the economy of production and profitability of the company's business operations. It is important to compare certain types of costs in different time periods, primarily the cost of material, depreciation, labor cost, interests, taxes, contributions and other legal and contractual obligations, as well as their mutual relationships (Božić, 1997).

The possibilities and specific features of agricultural production of cereals have been investigated by a number of authors, including the authors cited below.

Đurđić *(1997)* states that: "Agriculture is one of the few sectors in which, traditionally, state interventionism is high. Even the most developed countries, which are at the same time the greatest advocates of liberalism, have not resisted the pressure to create very complex and developed agrarian policies. Essentially, the specific features of agricultural production as well as the strategic importance of this sector have been a sufficient reason for applying strong protectionism in agriculture. Many agricultural policies are largely based on the guaranteed price system, which is best illustrated by the practice of the European Union, which has pursued such a policy ever since the creation of the Common Agricultural Policy (CAP). In this way, high prices fulfill one of the main objectives of agrarian policies – securing the material well-being of farmers. *Đorđević(1935)* in his booklet "Cultivation of Oil Crops" writes: "Field crop production in our country is limited mainly to cultivation of cereals, which have very low prices and their realization is difficult. It is therefore necessary to change field crop production, by using one part of the area under cereals to grow other crops which can sell more easily and which have higher prices. Such change could be introduced by cultivating oil crops". *Cvijanović (1994)* argues that Serbia has favorable natural conditions for production of industrial plants, but that these conditions are not sufficiently used. Development of industrial plant production is affected by both external and internal factors. The external factors include: development of the economy, changes in the demand structure, diversification of business branches and activities, and consequently, connecting plant production with the food industry. The internal factors include: selection, agro-tech-

nology, work mechanization, labor force, i.e. specialist staff; all of these factors change under the influence of scientific and technical progress.

The agricultural census in 2012 demonstrated that in Serbia farms with the land property smaller than 5 ha account for 77.4% of the total number of farms which have utilized agricultural land (abbreviated UAL). It can be concluded that domestic agriculture is dominated by the so-called small and medium-sized farms that have low economic strength (considering the value of the standard output on the farm). The most common are the farms with small area of UAL (smaller than 3 ha, or smaller than 5 ha) (Draft Strategy for Agriculture and Rural Development of Serbia 2014-2024). Based on the EC methodology for typology of farms (with which the appropriate methodology of the Statistical Office of the RS is in accordance), the economic size of a farm is the value of the total standard output (abbreviated SO) or results on the farm, i.e. the monetary value of gross agricultural production that farmers can expect to potentially obtain from their land (crops / perennial plants / livestock) in a certain region and "normal" production circumstances. The value of total SO on a farm is expressed in euros and represents the sum of the values of individual SOs of all agricultural products (characteristics) produced on that farm (European Commission – EC, 2008). The region of Vojvodina has the largest average economic size of farms (12,032 euros) while the lowest average size is in the region of southern and eastern Serbia (3,414 euros). Accordingly, the average economic strength of farms in the region of Vojvodina is 3.5 times above the average economic strength of farms in Serbia (http://webrzs.stat.gov.rs – accessed on August 11th, 2017).

RESEARCH METHODS AND DATA SOURCES

The task of this paper required application of different methodological procedures, while the research is mostly based on the so-called desk research and collecting available primary and secondary data. The research was carried out for the period from 2007 to 2017, with the focus on the calculation of wheat prices in the year 2017. In addition to the scientific methods, the study also includes tables presenting summarized data for the most important crops. The data are processed through profit and loss accounts and by determining the costs by calculation with rent and without rent in order to determine the final financial result. These quantitative calculations served as a basis to make an overview of wheat prices for the period from 2007 to 2017 on small and medium-sized farms in Vojvodina.

In order to investigate the dynamics of occurrences in a certain time period, the methodology by *Milošević (1981)* was applied in the paper. This methodology determines not only the changes in absolute amounts, but also the changes in the relative expression. This relative expression is obtained by putting in relation each member of the time series according to the size selected as the base for comparison. The relative numbers formed in this way are called dynamics indices, and they can be individual or group indices. They show the relationships of different states of a certain occurrence at observed moments of time or time intervals in relation to the selected base. Depending on whether the calculation uses the same, i.e. constant base, or a variable base, two types of indices are calculated: *base* and *chain indices*, and their quotient is multiplied by 100.

With base dynamics indices, members of the time series are compared with the same base. This base for comparison can be the first, the last, the lowest, the highest, or any other

suitable value. The base dynamics index is calculated when the state of the occurrence in the current period (e.g. Hgb value in June) is taken as the calculation value, while the state of the occurrence in the base period (e.g. Hgb value in May) is taken as the base value. The obtained value is multiplied by 100.

With chain dynamics indices, each member of the time series is compared to the previous member. The chain index shows a change in one occurrence from the previous period to the following period. If the chain index is higher than 100, it means that the observed occurrence is increasing (compared to the previous period), and if it is lower than 100, it means that it is in decline. The chain dynamics index is calculated when the state of occurrence in the current period (e.g. Hgb value in August) is taken as the calculation value, and state of the occurrence in the previous period (e.g. Hgb value in July) is taken as the base value. The obtained value is multiplied by 100. (http://www.mfub.bg.ac.rs/dotAsset /66577. pdf – accessed on August 8th, 2017)

The basic data sources used in this scientific and research work are statistical annuals of Serbia, internal data of the Serbian Chamber of Commerce, studies on business operations on farms in Vojvodina, data collected through the Internet, as well as the authors' studies published in books, journals and publications.

CALCULATION OF WHEAT PRICES ON FARMS IN VOJVODINA

Technical and technological progress in agriculture is not as dynamic as in some industrial branches, but it is still very intense and constant. Technical and technological progress is closely followed by new trends in the development of cost accounting, including the procedure of determining the costs incurred in producing certain output. This process of cost determining is calculation aimed at determining the cost price (the costs for one output or for the entire production). The research points to an evident change in the cost structure on the farms, and this change is reflected in the constantly increasing share of the general costs and the cost of using mechanization resources. It was found that on most of our farms, the quality of the existing calculations is not sufficiently developed. This is primarily the consequence of the lack of market environment in which our farms operated for a long time, and in which it was not possible to develop appropriate management. For this reason, this type of cost and output accounting is internally oriented, i.e. it refers to making global accounting reports on the status and success of business operations of a company as a whole, which is within administrative authority and responsibility of management (Malinić, Miličević, Stevanović, 2013). Our farms almost exclusively use the true cost accounting system which, thanks to the consistent application of the principle of passing over the total cost, necessarily results in a variable cost price of a product unit, which directly affects the periodic result.

Table 1 shows the calculation of wheat prices in the year 2017, followed by the analysis of the influence of a cost accounting system on the periodic result.

Table 1. Calculation of wheat prices in the year 2017

I DIRECT COSTS			
A.) PRODUCTION MATERIAL			
	1.	Wheat seed apač 210x56 RSD/kg	11,760
	2.	Mineral fertilizer NP 12:52 180 kg/ha x 58 RSD/kg	12,740
	3.	Mineral fertilizer An 260kg-fx41RSD/kg	10,660
	4.	Foliar fertilizer 3lx375	1,125
	5.	Protective agents	10,300
TOTAL			46,585
B.) MECHANICAL WORKS			
	1.	Disk harrowing 2x	10,260
	2.	Applying mineral fertilizers2x	3,120
	3.	Pre-sowing preparations 2x	9,100
	4.	Sowing	3,900
	5.	Field rolling2x	3,500
	6.	Spraying 2x	5,900
	7.	Harvesting with transport	15,700
	8.	Stubble plowing	5,140
TOTAL			56,620
II INDIRECT COSTS			
	1.	Taxes and drainage	5,120
	2.	Health and pension insurance	1,240
TOTAL			6,360
TOTAL COST OF PRODUCTION			107,770
RENT OF 1500 KG OF WHEAT x 22 RSD			27,000
TOTAL COST OF PRODUCTION WITH RENT			134,840

Source: http://www.agroservis.rs/zetva-1- accessed on August 13, 2017

Since this form of determining the costs and output is used for business changes occurring in production, it is linked with the so-called production cost accounting (Serb. *pogonsko knjigovodstvo*), or as stated above, this part of the accounting is used in the field of internal business operations. The term production cost accounting, which is used in this

paper, partly corresponds to Mellerovich's term production accounting (Kovačević, 1982). Regardless of the term given to the cost and output calculation, its basic task is to collect, classify and appropriately record i.e. process all the data on the operating costs incurred in all organizational parts of the company. For this reason, it is necessary to apply the method of additional calculation, which means that individual (direct) costs of each product or service (cost object) are "linked" to cost objects directly, while the general or indirect costs are added to them by an appropriate rate, i.e. indirectly. Additional calculation is not aimed at determining cost per unit of cost object, but primarily at determining the total cost of particular types of cost objects (Petrović, 2009).

This type of calculation was named additional calculation because the product cost price is made by first including direct (individual) costs, while general (indirect) costs are added afterwards on the basis of the keys, in this way completing the cost price of a certain product. Table 2 presents our example of an additional calculation, which includes the production cost price, i.e. direct costs (production material and mechanical works) and non-production cost price i.e. indirect costs (taxes and drainage, health and pension insurance). If the cost of non-production functions is added to this production cost price, the full (commercial) cost price of the product (wheat) is obtained.

Table 2. Additional calculation of wheat price for the year 2017

No.	Features	Amount
1.	Production material	44,960
2.	Mechanical works	56,620
3.	PRODUCTION COST PRICE (1+2)	107,770
4.	Taxes and drainage	5,120
5.	Health and pension insurance	1,240
6.	NON-PRODUCTION COST PRICE (4+5)	6,360
7.	FULL (COMMERCIAL) COST PRICE (3+6)	114,130

Source: The calculation performed by the authors based on the data in Table 1.

In order to determine the dynamics of the investigated occurrences, the study provides an overview of the costs of wheat prices by calculations for 2016 and 2017 (Table 3).

Table 3. Overview of the costs of wheat prices by calculation in 2016 and 2017

No.	Features	2016	Index	2017	Index
1.	Production material	41,210	99	44,960	107
2.	Mechanical works	52,310	99	56,620	108
3.	Indirect cost	6,020	107	6,360	106
4.	TOTAL PRODUCTION COST	100,620	88	107,700	107

Source: The calculation performed by the authors based on data http://www.minpolj.gov.rs – accessed on August 13th, 2017

The data in Table 3 show that in 2017 the cost by calculation increased by 7% in total compared to the previous year, as the production cost increased from 100,620 RSD / ha to 107.770 RSD/ ha. In the case of production material, the cost grew from 42,220 RSD/ ha to 44,960 RSD/ ha or by 6.5%. The price of the seed rose from 50 RSD/ kg to 56 RSD/ kg or by 7.7%. There was a slight increase in the prices of AN and foliar fertilizer, while the price of protective agents increased by 15%, from 8,980 RSD / ha to 10,300 RSD / ha. The price of mechanical operations grew from 52,310 RSD / ha to 56,620 RSD / ha or by 8%, as a result of a price increase of diesel fuel from 128 RSD / liter to 150 RSD / liter or by 17%. The initial purchase price for this year is still unknown as there have not been any offers yet. The stock price is between 18 RSD / kg and 19 RSD in / kg with VAT.

The total cost by calculation for 2016 amounted to 100,620 RSD / kg (Table 3), while the cost of rent was 27,000 RSD (Table 1). The total production cost with the rent was 127,620 RSD / ha (100,620 + 27,000), and the costs / expenditures (i.e. the given money) amounted to 78,160 RSD / ha. The price for 1 kg of wheat per individual costs is shown in Table 4.

Table 4. Costs / expenditures (i.e. the given money) per hectare in 2016

F e a t u r e s	Cost without rent per Ha	Cost with rent per Ha	Cost/expenditures per Ha
Costs in RSD	100,620	127,620	78,160
Achieved yield u kg	7,762	7,762	7,762
The price in RSD/kg	12.69	16.44	10.00

Source: The calculation performed by the authors based on data from Table 1 and Table 3

According to the report of the Statistical Office of the RS for 2016, and for the purpose of making calculations, the paper includes the following overview of wheat prices: cost without rent 22.53 RSD / kg, cost with rent 18.00 RSD / kg, realized price 15.75 RSD / kg, minimal realized price 14.50 RSD / kg, maximum price 17.00 RSD / kg. The total quantity of wheat on our farm was 78,396 t / ha at a price of 14.50 RSD / kg. After the harvest, the price rose to 17 RSD / kg, so the average price was 15.75 RSD / kg. The profit on our land amounts to 15.75 – 12.69 = 3.06 RSD / kg or per hectare 3.06 • 7,762 = 23,752 RSD / ha. On the rented land the following results were obtained: 15.75 - 16.44 = -0.69 RSD / kg or per hectare -0.69 • 7,139 = 5,356 RSD / ha, which represents a loss per hectare.

Total production cost with rent amounts to 127,620 RSD / ha, and it is higher than the total cost without rent (which amounts to 100,620 RSD / ha) by 27,000 RSD / ha, or 12.5%.

The obtained results of the analysis show that the yield of wheat was excellent in 2016, although in the last ten years (from 2007 to 2016) the absolute record was set in 2014 with 8,108 kg / ha, while 2016 was the second place with the yield of 7.8 t / ha. Concerning the financial effect, the farm sustained a loss of 5,368 RSD/ ha, which means that it was not possible to entirely cover all the cost.

Table 5 presents the average ten-year yield and the price of wheat by calculation with and without rent.

Table 5. Overview of the ten-year yield and the price of wheat (2007-2016)

F e a t u r e s	Our farm	AP Vojvo-dina	Central Ser-bia	Serbia	**Expected in 2017**
Yield	6,221	4,670	3,490	4,140	4,400
Price of wheat by cal-culation without rent	17.32	23.08	28.44	26.03	24.50
Price of wheat by cal-culation with rent	26.68	28.87	35.58	32.57	30.65

Source: The calculation performed by the authors based on the Statistical Report of the Statistical Office of the RS for certain years

Table 5 shows that the average ten-year yield of wheat was the highest on our farm, amounting to 6 t / ha, and there it had the lowest price of 17 RSD / kg by calculation without rent and 27 RSD / kg by calculation with rent. The yield on our farm is higher by 76% compared to Vojvodina, it is higher by 56% than in the central Serbia, and by 66% than in Serbia. The average ten-year wheat price by calculation without rent is the highest in the central Serbia amounting to 28 RSD / kg, while it is the lowest on our farm, where it is 17 RSD / kg. Also, the price of wheat by calculation with rent is the highest in the central Serbia, where the price is 36 RSD / kg, and the lowest on our farm, where it is 27 RSD / kg. Therefore, if we analyze the yield and the price of wheat on our farm on the basis of the calculated data in the table, it can be concluded that the yield is considerably higher while the price of wheat is considerably lower compared to Vojvodina, central Serbia and Serbia. Business operations on our farm were focused on creating modern business conditions characterized by production in smaller series, high capital investments, constantly increasing investments in research and development of new technologies, as well as constant effort to increase its market share.

In order to get the production price with rent, the cost by calculation with rent is divided by the average ten-year yield, i.e. 134,840 : 5,985 = 22.53 RSD / kg, while the production price without rent is 107,770 : 5,985 = 18.00 RSD / kg. Therefore, the price of wheat with rent was higher than the price of wheat without rent by about 4.53 RSD / kg. Table 5 indicates that the required price depending on the yield is from 17.32 to 35.58 RSD / kg. In 2016 the initial purchase price was 13.50 RSD / kg, and according to the calculation it was supposed to be from 15.98 to 31.93 RSD / kg. The costs / expenditures amounted to 78,160 RSD / ha, which divided by 13,50 RSD amounts to 6,456 RSD / ha. It can be concluded that farms with lower yield sustained a loss of substance, and could not cover the production costs, i.e. expenditures, rent, depreciation and its own labor.

ANALYSIS OF PRICE PARITIES OF WHEAT ON FARMS IN VOJVODINA

Parities, i.e. price relationships, are important indicators not only of the economic position of certain production lines, but also of the level of income generated by primary agricultural producers, which influence the development of certain lines and branches of agriculture. Price parities also affect the selection and the share of intensive production lines, which in our case is wheat, as the most common crop in Vojvodina. As a result, the prices of other products in plant production are mostly formed in relation to wheat (Novković N.,

Janković N., Mutavdžić B., 2005).

With prices parities, there is a balanced relationship of prices between certain price sizes or relationships, and the parities are then favorable and equal, while otherwise there are disparities, which can be unfavorable and unequal. The notion of parity – *Paritas* implies uniformity, equality, or equivalence, and the established relationship between the values of certain products. Through the relationship of prices, it is possible also to observe the position of agriculture and its financial position in the primary distribution (Milanović, 1996). For agricultural producers, it is important that price parities are stable, as only in this way it is possible to provide high production of agricultural products, i.e. production without great oscillations and with appropriate accumulation of production.

In addition to the calculation of wheat prices on farms in Vojvodina (presented in Table 1), the study in this paper also includes the analysis of parities, i.e. the amount of wheat which is required for wheat seeds, mineral fertilizers, urea, diesel fuel, combining per hectare, and a kilogram of bread, which is shown in Table 6 below.

Table 6. Overview of the required kg of wheat for kg of production material and kg of bread (2007-2016)

Features Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Wheat seed	1.77	1.94	2.98	1.55	2.67	2.74	2.13	2.60	2.22	3.17
Min. fertilizer 11:52	2.12	2.47	7.82	2.66	3.33	3.04	2.55	2.90	2.72	3.22
Urea	1.80	2.17	3.07	2.02	2.20	2.22	2.18	2.70	2.55	3.17
Diezel fuel	4.62	5.27	7.60	5.80	6.76	6.52	7.05	7.10	7.50	8.33
Combining per ha	340	475	652	507	536	546	662	745	833	872
Bread	4.71	4.75	6.52	5.14	4.19	4.22	4.09	4.50	5.00	5.00

Source: The first business gazette of farmers and extension service workers in Serbia – Farm, 2017

The case of wheat production on the farm in Vojvodina in 2016 is used to illustrate the discrepancy between the quantity of produced wheat and the financial effect of this production. The analysis of business operations on the farm in Vojvodina in 2016 shows that the average yield of wheat was 4,460 kg / ha, with a total production of 156,790 kg, on the total area of 20.20 ha. If the total quantity of produced wheat is divided by the number of hectares, the result is the total quantity of wheat per 1 ha: 156,790: 20.20 = 7,762 kg / ha. The ratio of the total produced quantity of wheat and the yield 7,762 : 4,460 = 1.74 - 1 = 0.74 • 100 = 74% is the percentage of the achieved yield, which is significantly higher than the average. Accordingly, as calculated above, regardless of the high yields which this farm made per hectare in 2016, it was not possible cover all the costs, which means that the farm sustained a loss of 5,368 din / ha.

Table 7 shows the average 10-year increase in the parity, prices and yield of wheat.

Table 7. Overview of the increase in the parity, prices and yield of wheat (2007-2016)

F e a t u r e s	Index	Increase in %
Price of wheat	107	7
Price of bread	107	7
Average yield of wheat in Serbia	123	23
Price of mineral fertilizers 12•52	148	48
Price of Urea	175	75
Price of diesel fuel	178	78
Price of wheat seed	179	79
Achieved yield on our farm	193	93
Cost of combining	260	160

Source: The calculation performed by the authors based on the Statistical Report of the Statistical Office of the RS for certain years

The obtained data in Table 7 indicate that the change in the parity was the smallest for wheat and the price of bread (by 7%), while the change was worse for the average yield in Serbia (by 23%), and mineral fertilizer (by 48%). For UREA, diesel fuel and wheat seed, the parity increased from 75% to 79%. The yield of wheat had the highest increase (by 93%) on our farm as well as the parity for combining (by 160%), from 340 kg / ha in 2007 to 872 kg / ha in 2016.

Taking into account the cost, the price and the yield of wheat on our farm, and the fact that the yield was almost doubled, amounting to 93%, while the price of wheat increased by 7%, it totals 100%. If 100% is divided by two, it is 50%. If the average cost increase included also the cost of combining of about 160%, the business conditions would deteriorate by 110%. This means that the cost increase on the parity is on average by 110%, while the increase in revenues from the price of wheat is by 7%. If it were not for this disparity, these revenues would be used to further improve and expand production on our farm; however, in our case the money ended up somewhere else, and our financial result was unfavorable. This case can be presented in the following way:

		Our farm	Serbia
1.	Ten-year increase in wheat yield	93%	23%
2.	Ten-year increase in wheat price	7%	7%
3.	Increase in the parity for reprod. mat. and comb.	110%	110%
4.	Deterioration of business conditions	110-50=60%	10-15=95%

The results of this study show that the parities are significantly deteriorating for wheat, while this situation benefits the input producers (producers of seeds, mineral fertilizers and other input raw materials), which means that the prices of inputs are increasing significantly faster compared to the prices of basic agricultural products. These parities, despite good

yields, neutralize positive economic effects in agriculture, which is caused by significant reduction in the consumption of mineral fertilizers. If the parities are unfavorable, they harm the producers causing losses, leading to a negative financial result, manifested in an income statement in which expenditures are higher than revenues. The factors causing this situation are insufficient accumulation of primary agricultural production, absence of production investments, primarily in modernization of mechanization, insufficient utilization of processing capacities in this sector and other factors that can lead to weakening of domestic agriculture (Gajdobranski, 2015). Therefore, it is necessary to intensify domestic production, primarily in terms of technological advancement, achieving price competitiveness, which is specially influenced by the policy of price parity and credit policy, in order to develop domestic agriculture and protect it from foreign competition.

In conditions in our country, the prevailing opinion is that inputs needed in agriculture are expensive, and as a result the producers lose the economic interest in increasing production, especially intensive production, as it requires significant investments. Long-term decline in the value of the prices of basic agricultural products, including wheat, maize, soybean, sunflower and sugar beet, often could not provide even minimal depreciation of agricultural mechanization, which has become obsolete. The above described inadequate and significantly unbalanced price parities resulted in the "pouring" of the funds from agriculture to other industrial branches. Lower prices of agricultural products are favorable for development of certain industrial branches, which are based on cheap agricultural production. In this way, agricultural producers are economically exhausted and lose their motivation to start more serious market-based production. "Compared to the market environment, such as the CEFTA and the European Union countries, our producers have significantly less state support in production, so their profit or loss is predominantly expressed as a result of realized prices" (Tomić, 1997).

The government needs to create the conditions for a more uniform distribution of GDP (gross domestic product) and, being the creator of the agrarian policy, to provide clear and predictable environment which enables companies and individuals, i.e. the processing industry and producers, to make long-term strategic decisions necessary for increasing productivity, and to make available good quality inputs (seeds, mineral fertilizers and other protective agents), as well as to provide incentives that regulate competitiveness thus stimulating the growth of productivity (Gajdobranskiet al., 2016). The growth of productivity in agriculture is a more important factor than the growth of agricultural production, because only the former can lead to a rise in income in the agricultural sector and improved living standards of the rural population. Accordingly, in order to create conditions for defragmentation of the land properties and for productivity growth (through modernization of farms, investments in technical and technological advancement of agriculture production, processing and marketing), an important factor will be the state support in the following forms: predictable and stimulating agrarian policies and development of the financial market for attracting external sources of financing (establishing efficient crediting mechanisms tailored to the specific and long-term needs of farmers, the development of non-bank institutions, etc.)

(http://media.popispoljoprivrede.stat.rs/2014/Dokumenta/Radovi/04%20Ekonomska%20velicina%20poljoprivrednih%20gazdinstava%20u%20RS%20i%20preporuka%20mera%20za%20njeovo%20osnazivanje.pdf – accessed on August 14th, 2017)

Although our country, in which Vojvodina is the largest production region, produces thousands of tons of agricultural products used for food production, the producers have only

a small part of the profit, while those dealing with processing, trade and similar related activities "skim off" the largest part. Farmers can only turn to the banking sector, where loans are constantly on offer, while subsidies are being reduced. If the goal is to minimize direct funding from the state budget, then it is necessary to adopt a long-term policy of subsidizing interest rates for agricultural producers to make loans more favorable, so that their loans could be repaid on time.

The Strategy of Agriculture and Rural Development of the Republic of Serbia for the period 2014-2024 points to several measures and programs (National Program for Agriculture and Rural Development of the Republic of Serbia, 2014-2024). Based on this study, and in accordance with the National Program, the authors propose the following priorities: change the land policy in Vojvodina in order to increase the size of land properties; apply modern agrotechnical measures in wheat cultivation while adhering to the measures of crop protection and selection of the best quality seed; establish production groups in this sector of crop production; enable making interest-based connections in order to purchase cheaper inputs (seeds, mineral fertilizers, protective agents, etc.); provide larger offer of seeds for wholesalers and processors; construct storage space so that cereals could be sold when producers decide to; make precise contracts between the primary producers and the processing industry and exporters; develop farmers' professional competence and skills of wheat cultivation through education in this field, and through greater participation of agricultural extension services; include science in the process of wheat production to provide clear analysis on crop cultivation in altered climatic conditions.

According to the data obtained from Novi Sad Stock Exchange in August 2017, there were no significant changes in the price of wheat on the Hungarian market. The offers ranged from 43,000 to 48,000 Ft / t + VAT, depending on the quality and parity, while there are no data for wheat at the Budapest Stock Exchange. The price of wheat on the Matifus, for example, with delivery in September was by about 1.50 euros / t in decline. Mills in Bosnia and Herzegovina have been supplied with the necessary quantities of wheat, so the demand for Hungarian wheat is weaker on this market. At the moment, this agricultural product is being delivered to the market of Bosnia and Herzegovina from Serbia, because of more favorable offer, i.e. balanced price ratio (http://www.poljomagazin.com/?p=34709 – accessed on August 12th, 2017). Table 8 shows the average prices of wheat and maize in RSD for 2017.

Table 8. Average prices of wheat and maize in RSD in 2017
(* average price for wheat over 76 hl / kg)

Country	Maize (RSD/kg)		* Wheat (RSD/kg)	
	16/06/2017	09/06/2017	**16/06/2017**	09/06/2017
Serbia	**16.00**	16.00	**16.80**	17.10
Bosnia and Herzegovina	**18.50**	19.10	**19.60**	20.00
Croatia	**16.40**	16.50	**16.80**	17.50
Hungary (parity CPT)	**17.47**	17.52	/	/

Bulgaria	18.46	/	18.15	20.77
France (parity CPT)	**21.23**	21.54	**21.20**	20.07
USA	**18.47**	18.71	**20.88**	/

Source: http://www.zitasrbije.rs – accessed on August 12th, 2017

During June 2017, maize was traded at a price of 15.70 RSD / kg to 16.20 RSD / kg, one week earlier the the price was 15.50 RSD / kg to 16.30 RSD / kg. Maize buyers were domestic consumers and exporters on FOB basis and to the countries in the region. As the harvest approaches, the price of wheat decreases on the market, so wheat was traded at a price of 16.50 RSD / kg to 17.30 RSD / kg. Good offer and small demand mean that once again there will be large supplies of crops from the previous period with which a new harvest starts. According to unofficial announcements of the Republic Directorate for Commodity Reserves, during or immediately after the harvest, about 30,000 tons of wheat will be purchased at a pre-determined price. It is expected that this quantity will be divided by regions, while sellers will be producers, natural and legal persons.

Crop and vegetable production has a special place in terms of the share in the total value of plant production, as these agricultural products are grown in Serbia on an area of 3.3 million hectares. The trends on the international market of agricultural products have significantly affected the sowing structure in Serbia in the recent years. The areas under cereals have remained relatively constant (1.9 million hectares), but there has been redistribution within these areas with the trend of increasing the share of maize at the expense of reducing the area under wheat. The increase of cereal prices on the world market has influenced producers to change their orientation towards maize production: area under maize has increased by about 10% in recent years, while in the middle of the past decade the area under wheat has for the first time fallen to below 500,000 hectares. (Strategy of Agriculture and Rural Development of the Republic of Serbia for the period 2014-2024, "Official Gazette of the RS", No. 85/2016).

Considering the increasing input prices and the decreasing prices of agricultural products, it can be concluded that the situation in this segment of agricultural production is becoming more unfavorable year after year, which greatly affects the volume, quality and structure of the following sowing. Agricultural practice on our farms is traditional and extensive (of low productivity, highly oscillatory and dependent on climatic factors) characterized by low marketability and lack of production specialization. It is also useful to note that the economic size of the farms in Serbia is approximately 6,000 EUR per farm, which is extremely low compared to the average economic size of farms in the EU countries, where it is around 25,000 EUR per farm. From the aspect of the area of utilized agricultural land and the value of SO on the farm, agriculture in Serbia is dominated by the so-called small and medium-sized farms, which have serious developmental limitations, primarily in terms of financial, human and physical resources. In order to make the small and medium-sized farms in Serbia more competitive, it is necessary for farmers to be more actively engaged in removing numerous internal limitations on their farms, as well as to obtain the support from the creators of the Agrarian Policy through implementation of a large number of support measures.

CONCLUSION

Agricultural production on small and medium-sized farms is a very complex process, which includes making important decisions related to maintaining or increasing the amount of profit on the daily basis. In order to achieve profitability of production, i.e. profit or a positive financial result, it is necessary that the total production value be greater than the amount of total production cost. For this purpose, the authors made price calculations to determine the cost of production and the cost prices of the obtained products on farms in Vojvodina. It was found that the share of direct costs (production material) is high, which led to an increase in the production cost price, and regardless of the high yields this farm made per hectare in 2016, the farm could not cover all its costs, sustaining loss in total business operations. Loss (or profit), as a business result achieved by a farm, is the sum of losses (or profits) realized in certain production lines (in our case, it is wheat).

The studies carried out on the territory of Vojvodina on registered farms required application of different methodological procedures. These farms are run by natural persons who apply different production technologies and different approaches to procure the necessary production means. The performed calculation of wheat prices in this study pointed to the following findings: what needs to be improved in the production, how to organize business operations, what needs to be changed, how to enter the market, how to be competitive in new market conditions, etc. For this reason, it is very important to intensify this type of crop production through technological advancement, defragmentation of the land on small and medium-sized farms, building warehouses and silos, developing processing capacities, reducing the cost of input raw material (production material), increasing exports, achieving a balanced price ratio (parities), etc.

According to the 2012 census, there are 620,000 farms smaller than 30 hectares out of a total of 631,000 farms in Serbia, which is 98%. Farms smaller than 30 hectares occupy the area of 2,108,000 ha of a total of 3,437,000 ha, which accounts for 61% of the total land. The profit per hectare on our farm is 36,000 RSD / ha, while on the farms smaller than 30 hectares the profit is even lower. Considering the living expenses of a four-member family and the income or profit that one average farm in Serbia realizes from crop production (provided that there is no fruit or vegetable growing or cattle breeding on the farm), crop production is not sufficient to cover the basic living needs on the farm, let alone to invest in expanding its production.

The problem is that the government, instead of creating better conditions for crop production, only further aggravates the situation, by reducing the subsidies from 100 ha to 20 ha and from 14,000 RSD to 4,000 RSD. Farmers have no security, and they are forced to take bank loans that are constantly on offer, while subsidies are reduced. This even resembles a kind of "blackmail", because if the goal is to minimize direct funding from the state budget, then it is necessary to adopt a long-term interest rate subsidy policy. This is necessary to make the loans as favorable as possible, so that the farmers could easily repay their loans on time. Lastly, in order to increase their competitiveness and survival on the international market, farmers need to permanently monitor the costs of their business operations.

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