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REDUCTION IN REVENUE VOLATILITY IN MAIZE PRODUCTION APPLYING THE INDIRECT-INDEX INSURANCE[1]

Todor Marković[2], Sanjin Ivanović[3], Saša Todorović[4]

Summary

This paper is aimed at providing the basic theoretical postulates of indirect-index insurance and by its application at quantifying the effect of the reduction in risk using a stochastic simulation. The paper uses data on maize yield gathered from family farm in the central part of Srem, and weather data were acquired from the nearest referential meteorological station. For the purpose of achieving a stated aim, two situations were analysed: maize production value by using the indirect-index insurance and by using no indirect-index insurance. In the case of applying this type of insurance, a farmer can decrease the risk by 8,816 RSD/ha (r=1.0), 4,116 RSD/ha if the correlation coefficient is 0.8, that is 2,598 RSD/ha (r=0.6). Therefore, it is possible to conclude that there is a significant effect of the reduction in risk by applying indirect-index insurance.

Key words: *indirect index insurance, maize, revenue, volatility, family farms.*

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Introduction

The weather factor significantly influences the economic trends, thus even 70% of world economy is influenced by the fluctuation in weather (Jain, Foster, 2000), that is 5% of gross domestic products in the Western Europe are affected by the fluctuations in weather

[1] The paper is a result of the research conducted within the project III-46006 of the Ministry of Education, Science and Technological Development of the Republic of Serbia entitled "Sustainable agriculture and rural development in order to achieve strategic goals Republic of Serbia in the Danube region" and the project No. 179028, entitled "Rural labour market and rural economy of Serbia - diversification of income and reduction of rural poverty".

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(Meyer, 2001). The projections of climate changes, particularly expressed through the danger of drought, indicate a great problem which will arise in the future (Beniston, Diaz, 2004). On the basis of this, it is necessary to use different instruments for risk management (Bielza et al., 2007). At the moment, 40% of insurance price (premium) in Serbia is subsidized. But OECD governments are increasingly interested in emphasizing investments rather than subsidies (Ivanović et al., 2012), which will influence future level of subsidies.

Most insurance systems (single risk insurance, combined risk insurance, multi-risk crop insurance, all-risk crop insurance, revenue insurance, income insurance, whole farm insurance) are related to the results on the individual farms and caused damages are estimated in the field, and the total losses are calculated at the farm level. On the other hand, index insurance is based on the data related to a certain region or administrative unit. This group comprises area yield based insurance, area-revenue insurance and indirect-index insurance. These insurance systems exist in the developed countries of North America (USA and Canada), and in recent years, the projects aimed at their implementation are initiated in some European countries.

Since this type of crop insurance is not found in Serbia, the aim of this study is, on the one hand, to completely explain the role and significance of index insurance as a new financial instrument in crop insurance, and on the other hand, to point to the possibility of the application of indirect-index insurance in our agriculture. It will be achieved on the basis of the simulation, in the example of maize, as a production line which has a significant share in the sowing structure and income of most farms.

Material and method

The basic data are acquired from a family farm in the municipality of Ruma, on the territory of Srem. The farm has an area of 75 ha, of which 22 ha is sown with maize (share in sowing structure is 30%). The average maize yield, in the period 1999-2008 was 8 t/ha, whereas the standard deviation of yield was 1 t/ha. The average price came to 10,000 RSD/t. This implies that the expected revenue is at level of 80,000 RSD/ha, whereas its standard deviation is 10,000 RSD/ha. Near the farm there is a meteorological station, where the data on average monthly temperatures and average monthly rainfall are available.

If the calculated revenue is increased by the potential influx from indirect-index insurance and decreased by insurance price (premium), it leads to the revenue by using indirect-index insurance (Schmitz, 2007). At this point, a logical question can be raised: is the hedging efficiency more successful with or without the use of this mode of insurance? The answer to this question is obtained using the quantitative methods for risk assessment. This paper applies the method of stochastic domination and analyses the expected values and variances. The concept of stochastic domination compares the functions of distribution (cumulative probability) of maize production values with the use of indirect-index insurance and without it. In the case that the distribution functions do not intersect, then it is a case of first-order, and in the case that they intersect it is second-order stochastic dominance (Brandes, Odening, 1992). Similarly, the standard deviation was considered as a dispersion measure in statistics, as well as percentiles in the

distribution of revenue and on the basis of them the possibility of reducing the risk of loss was determined (Berg et al., 2005).

Results and discussion

The index crop insurance is based on the data related to a certain administrative unit or region. Thus, for example, *area yield based insurance*, where the difference between predetermined average yield for that region and really achieved average yield is considered, is developed as an alternative to traditional multi-risk crop insurance. The intent is to provide the possibility of a long-term insurance against different risks in plant production, as well as to reduce the degree of state`s shares, which is substantially evident in the case of individual insurances (Ebneth, 2003). In the case of this concept of insurance, on the basis of regional yield, the calculation of insurance premium is carried out, as well as quantitative and qualitative determination of damage and as a result of this, the amount of compensation is determined. It is therefore necessary to establish such geographic regions, which are mutually homogeneous as regards climatic conditions. The insured case is only when the realised average yield in the region is lower than the expected average yield. This means that all farmers of that region pay the equal insurance premium, calculated on the basis of parameters of distribution of historical regional yield (Ebneth, 2003). In the event of the insured case, the farmers are compensated on a flat rate basis, depending on the amount of achieved average yield in that region. This hence implies that the compensation of damage is provided independently of really inflicted damages on certain farms.

The decisive advantage (*Table 1*) of this insurance system is reflected in a drastic reduction in moral hazard, since the certain policy holders do not have any impact on the achieved average regional yield, or on the amount of compensation (Chambers, Quiggin, 2001).

Table 1. Advantages and disadvantages of area yield based insurance

Advantages	Disadvantages
• No negative selection • No moral hazard • Lower premium of risk • Protection from related risks • Reduced transaction costs • Lower franchise • Higher level of cover	• No protection from independent risks • Poor acceptance by farmers • Banks do not acknowledge it as a credit insurance • Later damage compensation • Risk of loss that cannot be compensated

Source: authors' analysis

However, this type of insurance is not applied sufficiently in practice. The main reason for its rejection by farmers is impossibility of individual insurance against the fluctuation of yield, because in this way farmers may have a loss, which will not be compensated (Ebneth, 2003). Thus it follows that the greatest benefit is provided to those farmers, whose yields are closely correlated with the average regional yields. Observing other advantages and disadvantages of this insurance model it can be said that as for farmers the insurance based on average yield of the region can provide better comprehensive

protection from the risk compared with the individual yield insurance (Miranda, 1991; Schlieper, 1997; Bertelsmeier, 2000).

The *area-revenue insurance* is based on the product of average yield and price for a certain region. If that amount is lower than predetermined average revenue for this region all insured farmers from this region will receive the compensation.

In this paper is used *indirect-index insurance* which does not refer to the average yield or revenue of a certain region, but to the appropriate meteorological parameters. For these reasons this type of crop insurance is also called parametric insurance. In this case, the compensation is provided if a certain limit value (e.g. rainfall or average temperature) is exceeded or is not achieved.

It is well known that the amount of rainfall largely determines the future yield of most arable crops. The analysis carried out by Marković and Jovanović (2011a) determined that the amount of rainfall in the period from April to August has a high impact on the quantity of maize yield. Similar problem concerning wheat production was analysed by Marković and Jovanović (2011b).

For this research data on rainfall were obtained from the referential meteorological station Rimski šančevi in Novi Sad. Weather index, based on monthly amounts of rainfall in the period April-August, has a normal distribution, whose average is 300 mm, and standard deviation is 12.5 mm. The value for calculating the inflow from indirect-index insurance represents the average amount of rainfall (critical point), whereas the price of 1 mm of rainfall amounts to 800 RSD. A weather contract shall be valid for five months and the influx is possible if a measured precipitation is below the average amount of rainfall.

The inflow from indirect-index insurance (N_I) is calculated as follows:

$$N_I = O \cdot Max[0, (R - \tilde{x})] \tag{1}$$

In the given formula (O) represents the price of weather index, (R) indicates a critical point, whereas ($\tilde{x}$) marks a weather index.

Fair premium[5] of indirect-index insurance corresponds to discounted expected value of inflow $E(N_I)$. It is calculated as a price product of weather index (O) and the expected values of negative deviations from a weather index ($\tilde{x}$) and a critical point (R). The factor (e^{-rn}) discounts the inflow in the period (n) with an interest rate (r):

$$P_f = e^{-r \cdot n} E(N_I) = e^{-r \cdot n} \cdot O \cdot E\left(Max[0, (R - \tilde{x})]\right) \tag{2}$$

The expected value of the maximum function $E(Max[0, (R - \tilde{x})]$ can be interpreted as a measured average of all payment, which (do not) occur when the critical level is exceeded, that is, not achieved (Schmitz, 2007):

[5] A fair premium represents the lowest price of indirect-index insurance which is paid by buyers. In practice, this value is added transaction costs and risk premium, but in this case they will be excluded (Marković, 2010).

$$E\left(Max[0,(R-\tilde{x})]\right)=H(R)\cdot\left(R-E\left(x\middle|x\le R\right)\right)+\left(1-H(R)\right)\cdot 0 \tag{3}$$

As regards the preceding formula (*H*) is the probability that ($\tilde{x}$) is lower than (*R)*, whereas on the other hand $(1-H(R))$ expresses the probability that (*R)* is lower than ($\tilde{x}$). Based on the formula $F(x)=\int_a^b f(x)dx$ [6] the probability (*H*) corresponds to the area below the density function *h(x)* to the critical level (*R*).

$$H(R)=\int_{-\infty}^{R} h(x)dx \tag{4}$$

Since (*R*) is known (300 mm), the expected value of ($\tilde{x}$) must be determined assuming that it is lower than (*R),* and it is symbolised by the expression $E(x|x\le R)$ and corresponds to the expected distribution value of random variable ($\tilde{x}$) above the level (*R).*

If a normal distribution is taken for ($\tilde{x}$), the probability that that value is lower than (*R)* can be shown (Hartung, 2005):

$$H(R)=\Phi(z) \quad \text{where} \quad z=\frac{R-E(x)}{\sigma} \text{ is,} \tag{5}$$

The expected value of a normal distribution above the level (*R*):

$$E\left(x\middle|x\le R\right)=E(x)+\sigma\cdot\frac{-\phi(z)}{\Phi(z)} \tag{6}$$

In the above formulas, (*z*) is a standardised random variable, $\Phi(z)$ is a standard normal distribution, and $\phi(z)$ represents its density function[7].

Using the data on the expected value and standard deviation of weather index the probability of 0.5 for *H(300)* is obtained, and value of 290 mm for $E(x|x\le R)$. If that value is included in the formula (3), the result of 5 mm is obtained, representing the average negative deviations of a weather index from a critical point. If that deviation value is replaced in the formula (2) or multiplied by the price of weather index (800 RSD/mm), a fair premium amounting to 4,000 RSD/ha is obtained. The procedure is extremely simplified by excluding a discount factor.

[6] A starting point in investigating the dominance is a cumulative probability distribution of different alternatives. This distribution function is a certain integral of the assumed density function. In the given example, for the alternative (*F)* as a target value the expected revenue (*x*) with minimum (*a*) and maximum limit (*b*) and the density function *f(x)* is taken (Marković, 2010).

[7] The standardised random variable is obtained by subtracting the expected value *E(x)* from arbitrary random variable - limit level (*R)* and then by dividing this difference by standard deviation σ (Mladenović, Petrović, 2007).

Earlier it was emphasised that a successful application of indirect-index insurance in large part depends on the correlation between the achieved yield and the weather index. Hereafter it is shown what influence on a total revenue per hectare ($\tilde{V}_P$) different correlation levels have between these two parameters, particularly on:

- The variant without the use of indirect-index insurance, where the revenue is yield product ($\tilde{y}$) and product price (c_y);

$$\tilde{V}_P = \tilde{y} \cdot c_y \tag{7}$$

- The variant with the use of indirect-index insurance, where starting from the formula (7), the achieved market revenue is increased by the inflow from the indirect-index insurance (N_I), which on the basis of the previous calculations can be represented as a product of price of a weather index and deviation of the expected index value from the critical point ($O \cdot Max[0,(E(x)-\tilde{x})]$), lessened by an fair premium ((P_f):

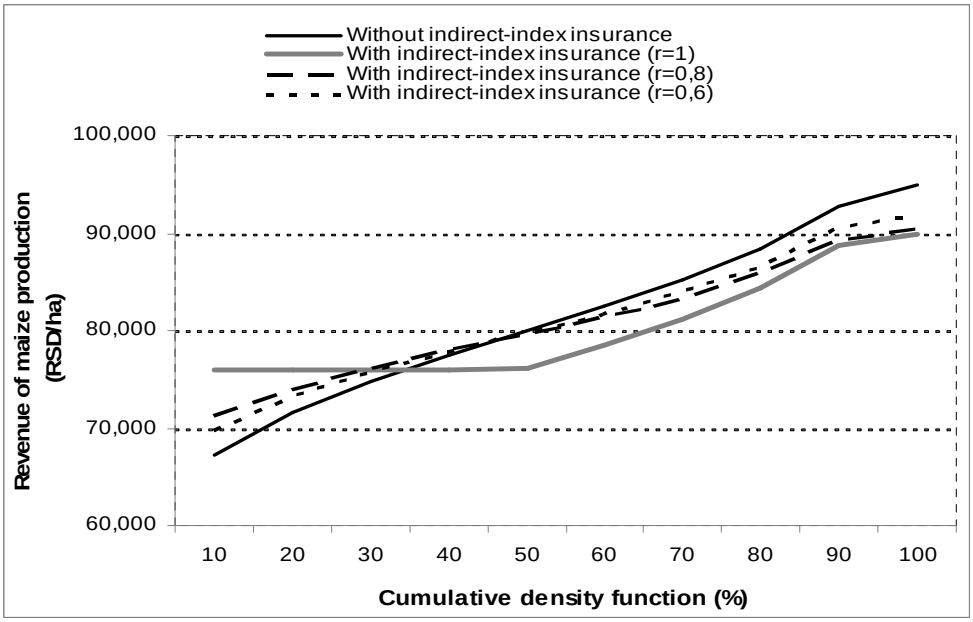
$$\tilde{V}_P = \tilde{y} \cdot c_y + O \cdot Max[0,(E(x)-\tilde{x})] - P_f \tag{8}$$

The stochastic values ($\tilde{y}$ = 8 t/ha) and ($\tilde{x}$ = 295) have a normal distribution and mutually positive correlation. Based on this, by applying the formula (8), the stochastic simulation model can be formed, whose results are shown in the form of cumulative function with indirect-index insurance and without it (Graph 1)[8]. Since when calculating the revenue with indirect-index insurance a fair premium, which corresponds to average collection from the option, is subtracted, both distributions (with and without insurance) have the same expected value.

In the case of correlation of +1.0 the market revenue below 80,000 RSD/ha is compensated by the inflow from indirect-index insurance. When the fair premium of 4,000 RSD/ha is paid, it can be noted that the revenue below 76.000 RSD/ha is completely „cut-off", and lower expected production value cannot occur. If the percentiles are regarded as a measure of risk reduction, the revenue in percentiles of 10% without insurance amounts to 67,182 RSD/ha, and in the case with insurance it rises up to 75,984 RSD/ha (*Graph 1*).

[8] The simulation was carried out by means of a computer software Excel AddIn@Risk. This programme allows taking into account different correlations between the yield and weather index (Marković, 2010).

Graph 1. Revenue distribution of maize production, with and without indirect index-insurance



Source: authors' calculations

On the other hand, decreasing the correlation coefficient between the weather index and yield leads to the decrease in a positive effect, which is achieved from this insurance. Thus, for example in the case of correlation of +0.8 the possibility of occurring of lower revenue can be excluded. In the case of insurance this probability is lower, but it can happen that the yield is lower, so the full compensation will not be received. In the case of the percentiles of 10% the revenue with insurance (71,283 RSD/ha) will be higher by 6.12% than the variant without the application of indirect-index insurance (*Graph 1*).

If the correlation is even weaker (+0.6), the positive effect of this type of insurance increasingly decreases and the distribution curves (without and with insurance) almost overlap. The revenue in the case of percentiles of 10% without insurance amounts to 67,167 RSD/ha, and in the case with insurance it rises up to 69,765 RSD/ha (*Graph 1*). When the correlation coefficients are lower, the benefits from the application of indirect-index insurance are insignificant for risk prevention.

Conclusion

A presented example of using indirect-index insurance clearly shows that nowadays it represents a useful instrument for reducing weather risks. A special emphasis is put on reducing the oscillations of economic indicators of success (e.g. revenues), affected by a weather factor. If there is a strong correlation between weather index and maize yield (r=1.0), then the effect of reducing the risk is significant (8,816 RSD/ha). However, if the correlation coefficients are lower (r=0.8 or r=0.6), then the effect of prevention decreases (4,116 RSD/ha or 2,598 RSD/ha). In practice, it is reasonable that a fair premium is

increased with transaction costs and risk premium, which also reduces the positive effect of these instruments.

Based on the previous provisions, it follows that suppliers of indirect-index insurance should allow denser network of meteorological reference stations, they should offer a mixed-weather-index (for example, by combining the rainfall and average temperature) or weather index with data from several meteorological stations, as well as a wider range of different types of index insurance. This refers primarily to the weather contracts design, with special emphasis on determination of critical point and the price of weather index, and it is also important to select the appropriate weather index and to study the correlation between yield and weather index.

These conditions surely scale up the complexity for sellers, but they are inevitable to raise farmer's interest for indirect-index insurance in general. At the moment it is still unclear in how far this financial instrument will establish in agribusiness in the years to come. Nevertheless, the previous calculations show a significant potential of indirect-index insurance in reducing the production risks, therefore it can be a supplement to the existing instruments for risk management in plant production.

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SMANJENJE VOLATILNOSTI PRIHODA U PROIZVODNJI KUKURUZA PRIMENOM INDIREKTNOG INDEKSNOG OSIGURANJA

Todor Marković[9], Sanjin Ivanović[10], Saša Todorović[11]

Rezime

Cilj rada je da pruži osnovne teorijske postavke indirektnog indeksnog osiguranja i da se njegovom primenom kvantifikuje efekat smanjenja rizika koristeći stohastičku simulaciju. U radu su korišćeni podaci o prinosu kukuruza sa porodičnog poljoprivrednog gazdinstva u centralnom delu Srema, a sa najbliže referentne meteorološke stanice uzeti su vremenski podaci. Da bi se ostvario zadati cilj analizirane su dve situacije: vrednost proizvodnje kukuruza sa upotrebom indirektnog indeksnog osiguranja i bez njega. U slučaju primene ovog tipa osiguranja poljoprivrednik može smanjiti rizik za 8.816 RSD/ha (r=1,0), 4.116 RSD/ha ako je koeficijent korelacije 0,8 odnosno 2.598 RSD/ha (r=0,6). Stoga se može zaključiti da postoji značajan efekat smanjenja rizika primenom indirektnog indeksnog osiguranja.

Ključne reči: *indirektno indeksno osiguranje, kukuruz, prihod, volatilnost, porodična gazdinstva*

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CRUDE MILK INDICATIVE PRICES: MECHANISM OF DEFINING AND APPLICATION

Vladimir Shibaykin[1], Ekaterina Dolbilova[2]

Summary

In the article the results of the analysis of the environment of purchase prices of crude milk in Russia and the Saratov region, including their long-term dynamics of seasonal fluctuations are presented. Author's calculations prove an exponential rise in prices and its negative influence on consumer prices of dairy production. Importance of monitoring of inter-branch parity of the agricultural and industrial prices is emphasized. Experience of use of indicative pricing within agreements between national associations of producers and milk processers is generalized. Special attention is given to methodical questions of justification of indication prices. The improvement guidelines «Temporary methodical recommendations on the organization of monitoring of the current profitability, indication prices and production costs of main types of agricultural production» are formulated. The offered author's approach is approved on materials of the Saratov region. The corridor of the minimum and ceiling indication prices for 2013 is reasonable. The conclusion is drawn on the need of reconstruction of the regional Union of producers and milk processers Saratov-Molprom.

Key words**:** *indication price, crude milk, price inter-branch parity, Saratov region, methodical approach, forecast*

JEL: *R11, Q11*

Introduction

Discussion on purchase prices of crude milk in recent years in scientific and business environment is vital and actual. It is connected with the fact, on the one hand, that not only payback, but the destiny of the Russian dairy cattle breeding industry depends on it, and on the other hand, economic availability of milk consumption as many dairy products are socially significant. How should the opposite purposes of objective growth and necessary reduction on crude milk prices be coordinated? In the article we'll try to analyze the situation on the example of the Saratov region in Russian Federation.

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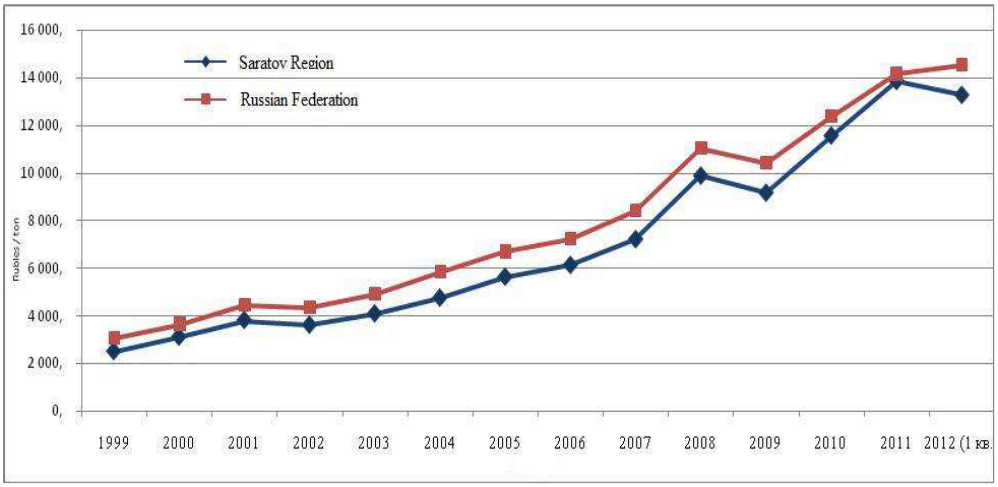
Dynamics of milk prices in the Saratov region

The prices on crude milk in Russia are the highest in Europe. This is connected both with the industry's level of technological development, and natural climatic conditions. It is possible to note that the change of purchase prices of crude milk is characterized by positive dynamics (*Graph 1*).

Graph 1. Crude milk producers' medium prices' dynamics in the Saratov region and Russian Federation



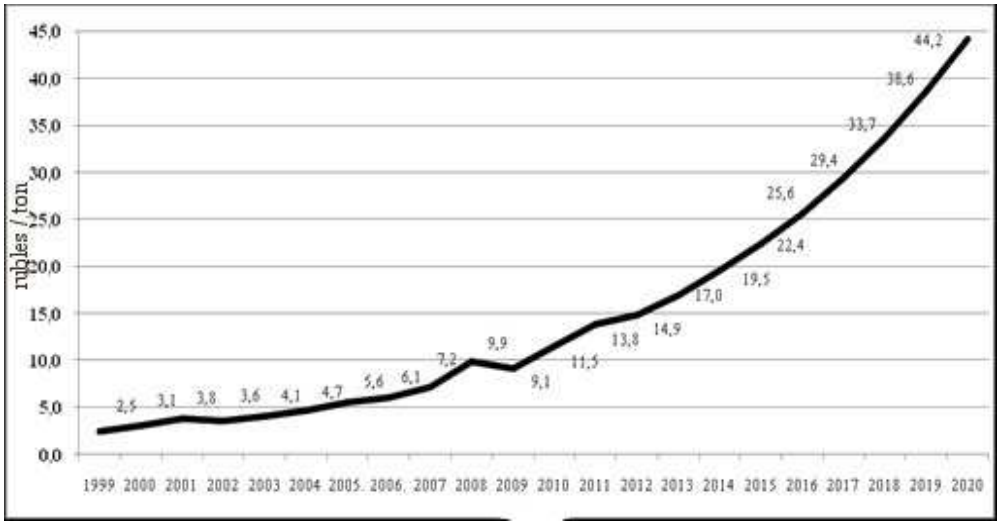
Source: Milk producers' national union Souyzmoloko, 20th February 2012, http://www.souzmoloko.ru/news/news_996.html

The graph shows that during the last years medium purchase prices on crude milk in the region have grown up from 3,1 in 2000 up to 13,8 thousand rubles per ton in 2011, i.e. 4,5 times. Thus, the gap in the level of medium Russian and regional prices decreased from 15 up to 2%. From the point of view of farm goods producers such growth should be considered as a positive one, because it allows in the conditions of energy and feeds' costs increase retain profitability and with the help of state subsidies invest into production development.

Under given circumstances crude milk prices will grow. The prices on crude milk will increase not linearly but exponentially. The author's inertial purchase price change forecast shows that by 2020 it will reach 44,2 rubles per liter, i.e. will grow during 8 years 3,2 times (*Graph 2*).

Nowadays crude milk costs constitute 42-44 per cent of retail price on whole pasteurized milk, sour cream, cottage cheese, different kinds of cheese and 60% - on butter [4]. It is obvious that the increase in purchase prices on crude milk will become the factor of dairy products consumer prices' changes.

Graph 2. Crude milk producers' medium prices exponential trend in the Saratov region up to the year 2020



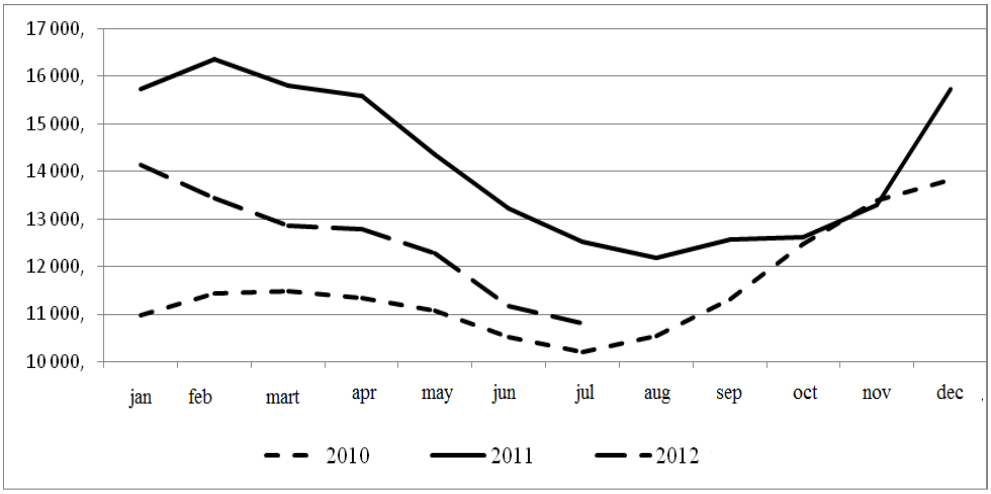
Source: Author's calculation

The problems connected with prices inter industries parity is revealed as follows:

- Milk processors can not raise their realization prices because of high competition on import dairy production supplies (cheese, butter and powdered milk), cost production price of which is being calculated on the base of medium purchase prices on crude milk at the level of 8-10 rubles per kg [6]. The restriction on retail prices growth renders a depression of solvent demand as well;
- Crude milk production is characterized by very high seasonal instability –in May-July it is 40-60% more than in December-February. It is during the highest milk production period that consumer demand on it is seasonally reduced. As a consequence, summer purchase prices are falling leading to agricultural producers' losses (*Graph 3*).

These calculations demonstrate that scientifically based methodic approach is necessary towards defining approximate crude milk indicative prices. That was why in 2010 under the auspices of the Russian Federation Ministry of Agriculture, work began on the conclusion of a special agreement between the associations of milk producers and processors (Soyuzmoloko and Russian Union of Dairy Suppliers) on crude milk indicative pricing, and, in particular, minimum prices on crude milk, below which they could not be dropped during the year.

Graph 3. Crude milk purchase prices' seasonal volatility in the Saratov region, rubles per ton



Source: Milk producers' national union Souyzmoloko, 20th February 2012, http://www.souzmoloko.ru/news/news_996.html

In 2010 processing enterprises controlling 65% of domestic cheese production, more than 50% of butter production and about 40% of powdered milk production [4] agreed on the price of 11 rubles per 1 liter of crude milk. It is important to stress the fact that the given consensus was not a legal statement, but the declaration creating the position of dairy market participants. As a consequence, stated prices were indicative, i.e. were recommended.

The application of indicative prices forms objective and forecasted situation in dairy production necessary for efficient functioning of the market, financial policy planning and favorable investment climate creation. Indicative prices perform several important functions:

- analytical, characterizing the alteration of equivalence of inter branch exchange on the dairy production market;
- informational, orientating market subjects under the elaboration of their current and long-term plans for the forecast level of purchasing and sales prices;
- coordinating, harmonizing the interests of buyers and sellers in the process of implementation of market transactions at the conclusion of "fair" contracts;
- regulatory, forming mechanism of the overflow of milk and dairy products in the most favorable areas, and to the most efficient producers;
- stimulating, creating motivation to improve production efficiency by means of modernization and innovations.

In 2011 and 2012 the created precedent of signing inter branch agreement was continued. Thus, in the current year the Agreement between Soyuzmoloko, a group of companies Danone-Unimilk and Wimm-Bill-Dan Products on the compliance with the monthly average basic indicator price for crude milk not less than 12 rubles and 16 rubles per kilogram of

crude cow's first grade milk on the dairy farm (3,4% of fat and 3,0% of protein) excluding VAT was signed [3].

Association of milk producers performs prices justification in the framework of annual forecast for the twelve-months period on the basis of the "Provisional guidelines for organizing the monitoring of current profitability, indicative prices and the costs of the main kinds of farm produce", together with jointly collaborated RF Ministry of Agriculture and All-Russian Scientific Research Institute of Agricultural Economics and approved at the end of 2008 [1].

Indicative price

Indicative prices for crude milk must meet the following requirements:

- to provide conditions for the expanded reproduction of both agricultural and processing enterprises;
- reduce (or increase the minimum growth) of consumer prices for dairy products;
- motivate the use of advanced technologies growing livestock breeding and effective use of all resources.

In the current procedure under the indicative price there should be under stood such level of producer prices under which indicative (normal) cost are compensated and profit is generated, which in view of the proceeds from the budget and borrowings provides inherent in State Program of agricultural development milk growth rates (4,9%).

The practical value of this study is - it determines the absolute value of the indicative profitability of milk production as the norm of providing the required rate of expanded reproduction in the industry at 26,5 % (with a growth rate of 6 %, it is increased up to 32,8%) as well as the minimum level of profitability, offsetting cost inflation at the level of 14,8%.

Normative profitability for the Saratov region may be defined using these fundamental ratios. In the Draft Concept of agro-industrial complex of the Saratov region until 2020, [5] average annual milk growth rates up to 5,4% are being planned, therefore normative profitability should constitute 29,4%.

The benchmark price is calculated as the sum of the regulatory industry profits and normal costs. These indicators are determined on the basis of information on the actual cost of milk in the model farms with high productivity of cows, low production cost and producing 30-40% of total milk output in the region.

All-Russian Scientific Research Institute of Agricultural Sciences' specialists calculations showed that the actual values should be adjusted to reduce costs by applying (0,95) costs reduction and production output coefficients (1,3). Then indicative prices of the basic period are being indexed on the base of rates of consumer prices (inflation).

Recognizing the important role of this methodological approach, certain drawbacks should be pointed out.

The developers themselves note that the methodology should be improved in the direction of detailed cost structure, differentiation of indicative prices for different types of households, including those with varying technical capabilities.

The developers themselves note that the methodology should be improved in the direction of detailed costs structure, differentiation of indicative prices for different types of households, including those with varying technical capabilities.

First, in our opinion, one should more carefully define "normal" costs, differentiating them in terms of marginal costs acknowledged by society. By limiting or trailing costs the cost of milk production in the last included in the optimal plan closing company should be meant.

By limiting or trailing costs there should be meant the cost of milk production in the last included in the optimal plan closing company.

With the data of the annual reports of all agricultural organizations the Saratov region involved in dairy cattle breeding available, we'll analyze the fluctuations in the milk production costs and profitability.

As it follows from Table 1, the range of fluctuations of milk production costs is approximately 800%. The minimum production cost constitutes 48 per cent of the average level of the Saratov region, and the maximum is 762%. Price range is significantly less - from 59,4% to 175%.

Table 1. Differences in the indicators of cost production, profitability and milk producers' prices in the Saratov Region

Indicators	Minimum	Maximum	Average in the region
Cost production of 1litre of milk, rubles	3,02 - Agricultural marketing cooperative Repyevskaya	47,93 - Open Unincorporated Company Dairy Production Plant Krasniy Kut	6,29
Realization price of 1litre of milk, rubles	4,38 - Agricultural marketing cooperative Beryezovskaya	12,91 - Closed joint stock company Novoye	7,38
Production profitability, %	79,8 - Open Unincorporated Company Dairy Production Plant Krasniy Kut	150,5 - Private farm Pobeda	17,34

Source: Author's calculated

From the table it is seen that, first, the level of profitability is only 2,6% higher minimum admissible level. It compensates inflation of expenses, but does not provide conditions for expanded reproduction.

Secondly, there are enterprises with unprofitable production with the level of expenses that has not been recognized by the market. To determine the range of limit expenses the author has grouped the farms of the Saratov region according to the indicators of efficiency, the size of dairy herd and specific costs per 1 animal. This grouping has shown that there is not close connection between the key production and economic parameters of

activity of the enterprises. It is stipulated by different strategies, technological level, and efficiency of marketing activity.

Along with this, cumulative indicators testify that prime cost directly depends on cattle breeding charges and as a whole decreases in the process of their productivity growth. The first group of enterprises, having achieved low prime cost, has very high profitability of sales. At the same time, even in the last, the most expensive group there are enterprises getting profit, sufficient for expanded reproduction at the expense of higher marketing prices and bigger production scales.

High level of expenses can be objectively caused by high investment loading, but it is paid off at the expense of high quality milk production and realization of a significant amount of milk during the winter period.

The revealed levels of expenses are offered to be used for definition of an indicative corridor of the prices in which at least there will be the prices providing standard level of profitability at the expenses in the second group of companies. The purpose of the minimum indicative price is to define the guaranteed minimum of purchase prices regardless of a season, i.e. even in months of «great milk» production (June-August).

Prime cost level at the enterprises of the third group will provide profitability of not less standard for the enterprises making more than a half of all milk production. Therefore we will consider the prices on the basis of expenses of this group indicative for average annual level.

The price on the basis of limit expenses will be the maximum price defining the highest margin within a year regardless of a season, including the periods of «small» milk production (December - February). If the minimum indicative price is intended for the protection of interests of crude milk producers, the maximum indicative price is supposed to support the interests of processors. The results of calculation of the prices' corridor are presented in Table 2.

Table 2. Indicative prices in the conditions of the Saratov Region, Russia

Indicative price type	2007	2008	2009	2010	2011
Minimum	6,6	9,2	8,5	10,9	13,0
Average annual	7,8	10,7	9,9	12,5	15,0
Maximum	14,4	16,8	13,7	18,7	22,3

Source: Author's calculated

Realization of information function of indication prices demands their forecast at least for a year in advance. The simplest way of forecasting, taking into account the inflation of expenses is the use of prices' indexes. Therefore the next direction of improving techniques of Ministry of Agriculture – All-Russian Scientific Research Institute of Agricultural Economics is the switch over from the consumer prices growth rates use to material resources prices growth rates used in dairy cattle breeding (inflationary component of the price). To be more precise, the use of the aggregated price index weighed on the structure of material inputs is necessary. To our mind, it is more correct, because the tendencies of prices change on in-

dustrial and consumer goods may vary considerably. Specialists note, that such technique makes it possible to trace the dynamics concerning relative changes of reproduction conditions in the industry, but may lead to the problem of «accrued disparities» as well [2]. Nevertheless in the absence of financial balances of dairy cattle breeding such approach becomes the only one available to practical calculation.

According to the 13- APK form and the Central Base of Statistical Data we will calculate the structure of expenses for the production of milk and the aggregated weighed index of inflation of expenses for the last 3 years (*Table 3*).

Table 3. Calculation of the aggregate index of inflation of expenses in dairy cattle breeding enterprises of the Saratov Region

Type of costs	Specific weight in material costs, %	Average prices index in 2009-2011	Weighted price index
Feeds	65,0	109,2	71,0
Electricity	5,2	113,5	5,9
Petroleum	6,1	98,9	6,0
Maintenance of fixed assets	23,7	104,2	24,7
Material costs - total	100,0	-	107,6

Source: Author's calculated

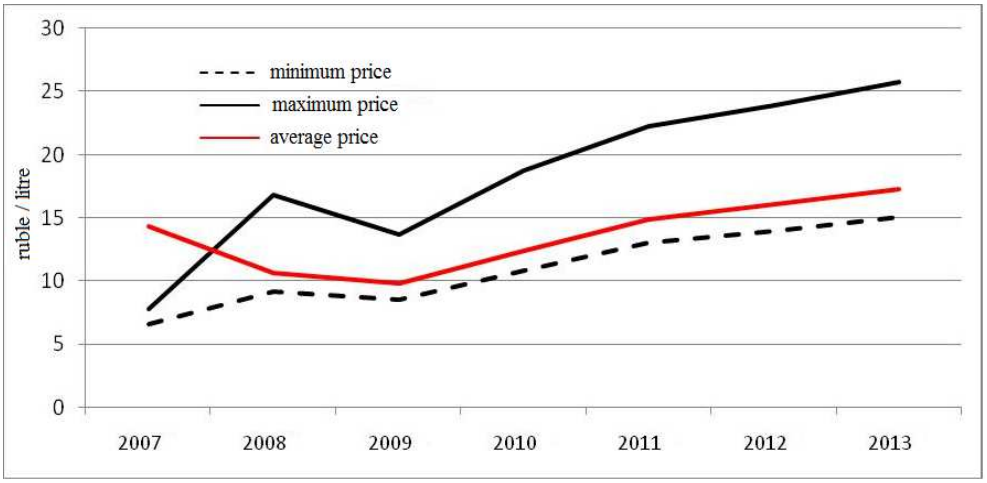
Subsequently, by means of multiplication of price coefficient calculated according to the 2010 data and the aggregated index of inflation of expenses it is possible to receive expected values of indicative prices (*Table 4* and *Graph 4*).

Table 4. Indicative prices forecast for 2012 – 2013 in the conditions of the Saratov Region

Type of indicative price	2011	2012	2013
Minimum	13,0	14,0	15,0
Average annual	15,0	16,1	17,3
Maximum	22,3	24,0	25,8

Source: Author's calculated

Graph 4. Dynamics of indicative prices on crude milk in the Saratov Region



The forecast shows that purchase prices growth for crude milk is objectively stipulated, otherwise, the disparity of inter sectoral exchange will increase, and conditions for expanded reproduction in dairy cattle breeding will get worse.

Conclusion

The main practical sense of indication prices which is given to them by governing agricultural bodies is the opportunity to reduce seasonal fluctuations in prices on the basis of voluntary agreements. Producers and processors of agricultural products can sign these agreements within branch associations. Therefore it is necessary to create a new regional Union of dairy producers and processers of milk Saratov-Molprom to introduce indicative pricing in the Saratov Region. It was registered in 2008, but after two years of functioning, its activity was stopped.

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PROBLEMS OF THE DEINDUSTRIALIZATION OF THE SERBIAN ECONOMY[1]

Simo Stevanović[2], Milan Milanović[3], Srećko Milačić[4]

Abstract

The paper analyzes the process of the industrialization, i.e. deindustrialization of the Serbian economy in the time period after the Second World War until today. In the observed period, two contrary processes have been recorded. Until the beginning of the 1980s, the process of the accelerated industrialization of the economy was taking place. In the structure of the GDP, industry increased its share to around 44%.

At the beginning of the 1990s, East European socialist countries and Serbia commenced the process of the transition of the economy and the economic system. In the starting phase of transition, all countries recorded a negative rate of their economic growth, a fall in the GDP and a reduction in the share of industry in the structure of GDP of the economy. Differently from the countries in which the negative tendencies of the economic growth were stopped in the mid-1990s, and which became the EU member countries in 2004 and 2007, the negative trend of the economic growth and the deindustrialization of the economy in Serbia continued during the first decade of the 21st century.

In the previous twenty-year period, the GDP of the Serbian economy was reduced to 60% of the level of the 1990s. The 15.9% share of industry in the structure of the economy in 2009 is lower than the share of Yugoslavia's industry immediately after the Second World War (around 20%).

Key words: *industry, deindustrialization, reindustrialization, Serbian economy.*

JEL: *O012, L16*

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Introduction

Industrialization as a method and policy of economic development became again the subject matter of the economic theory when a route of the accelerated development of the backward socialist countries established immediately after the Second World War was being sought. By choosing industry as the bearer of their future economic development, these countries turned from backward agrarian countries into mid-developed industrial countries in a very short time. More or less intensively and with stagnations, industrialization continued until the disintegration of the USSR in 1989, the fall of the Berlin Wall and the commencement of the transition process which all the East European socialist countries entered. A similar thing happened to the industrialization of the Serbian economy, too.

By initiating the transition process, all the countries entered the phase of the recession of the economy and deindustrialization[1]. In the majority of the countries, that phase lasted until the mid-1990s, when the process of transition was ended and when the pre-transition level of the development of the economy was reached. Out of this group of countries, 10 of them fulfilled the conditions necessary for membership in the European Union in 2004, and yet two countries did so in 2007, when they formally as well brought the process of the transition of the economy and the economic system to an end. Serbia entered the transition process, accompanied by the disintegration of the SFRY, the UN SC sanctions, the civil war and the bombing by NATO in 1999. In a period of only five years, the level of the GDP of the Serbian industry was reduced to around 30% of the one of 1990, accompanied by high inflation unrecorded in the comparatively recent history. With the exception of two shorter sub-periods, the deindustrialization process continued in the period after 2000 as well.

The subject of the research in this paper is the deindustrialization of the Serbian economy during the transition process.

The goal of the paper is to perceive the degree and consequences of deindustrialization in the Serbian economy during the transition process as well as to find out a way to commence the process of the reindustrialization of its economy.

The development of industry in Serbia from the Second World War to 1990

The dilemma which the then SFRY/Serbia was faced with immediately after the Second World War related to the choice of a route of a future development of the economy. Just like the majority of the East European countries and the USSR, the SFRY was a backward

[5] The term **deindustrialization** denotes a reduction in the share of industry in the creation of the gross domestic product, a newly-created value and ensuring employment of a country. In the case of contemporary market economies – deindustrialization is a regular trend of development, which should be leading towards the so-called postindustrial society, as (currently) the highest phase of the (industrial) development of mankind. In that phase, in the creation of the gross domestic product, a newly-created value and ensuring employment, the service sector is predominant, while at the same time the significance of industry in the total development is not reduced. This phenomenon is, first of all, a consequence of powerful scientific-technical progress in the field of industry and new forms of the organization of industrial enterprises. Unfortunately, the deindustrialization of Serbia has no common ground with this model (Adzic, 2011:404-405).

economy in which agriculture had an over 40% share in the structure of the GDP. Although agriculture was a dominant economic activity, it could not have been the bearer of a future development for several reasons. Firstly, agriculture had low productivity which can only be increased by introducing contemporary technical means originating from industry. The undeveloped domestic industry could not have provided that, so contemporary means of agriculture would have to be imported, which would understand the export of agricultural products for providing means for purchasing industrial products. With a low level of the development of agriculture, that was impossible. Secondly, the introduction of contemporary technical means in agriculture reduces a need for a workforce, which would understand that the surpluses of such workforce are engaged in non-agricultural activities, for the most part in industry. That is impossible without a speeded up development of industry. Thirdly, due to the underdevelopment of the market and low demand for agricultural products, a problem of the absorption of an increased volume of the production of agricultural products would have occurred.

The stated indicates that the modernization of agriculture is impossible without the development of industry. That is why, in the strategy of a future development, industry became the priority of the economic development of the then Yugoslavia and the other socialist countries headed by the USSR. The policy of an accelerated development had a goal to make changes in the economic structure in favor of an increase in the share of industry and other non-agricultural activities in the GDP of the country, i.e. of the economic activities in which greater labor productivity is achieved compared with agriculture. With the development of industry, its secondary[1] effects on the development of the economy are manifested. First, heavy basic industry, especially the branches producing a new technique, more quality means and objects of work, was being developed. Such a development had as a goal to, in a very short time period, ensure the growth of general and branch productivity of labor as well as the growth of the income of the population and own accumulation of the economy, which would lead to an increase in the degree of employment and the raising of the living standard of the population in the country.

Industrialization as the method and policy of development used to have positive effects on the development of the socialist countries' economies. This can best be illustrated by the high rates of the industry growth from the Second World War to the beginning of the 1990s (the fall of the Berlin Wall in 1989), when the process of the transition of socialist economic systems and of the industrialization of these countries' economies. They have commenced an "accelerated development and the modernization of their economics by applying the so-called socialist[2] method of industrialization. The application of that model was basically supposed to lead to the achievement of two goals: to speed up the economic development – mostly by new investments in industry; and to alter the economic structure

[6] The development of industry stimulates a further economic activity, creates conditions for the higher productivity of an economy, the employment of the labor-capable population and the development of activities closely connected with industry.

[7] This model of development is basically focused on the priority development of production means, which understands making greater investments and a relatively longer time period of for them to activate.

by increasing the share of industry in it. This was more or less achieved in all the socialist countries" (Bozic, 2009:425).

Table 1. The DP indexes and the growth rates of the industry and mining of the FR of Yugoslavia[1] in the 1955-1990 period

Years	Index 1955=100	Years	Rates of growth of DP of industry (%)
1955	100	1953-1960	14.0
1965	375	1961-1970	8.5
1975	722	1971-1980	8.2
1985	1224	1981-1990	1.0
1990	1 154	1953-1965	13.4

Source: SGSCG 1992, p. 124, SZS Belgrade 1994

By centralizing accumulation and by redirecting it through an increased volume of investments in industry, a high growth rate of the GDP of industry and the volume of industrial production is ensured. As early as in the mid-1950s (in only 15 years), once a prevalently agrarian country (with the dominant – over 70% – share of the agricultural population in the total population), Serbia turned into an industrial country (with less than 50% of the agricultural population). The accelerated development of industry enabled a "huge transfer of the workforce from agriculture to industry, i.e. from villages to towns. Industrialization importantly modified the economic structure, encouraged the division of work, specialization and diversification, ensured a very high pace of employment growth, created conditions for the dynamic development of scientific-technical progress, improved the structure and increased the volume of foreign-trade exchange, created conditions for the development of other economic branches (primarily agriculture) and radically improved the total living standard" (Savic, 2009:2).

Although the results had been good in the beginning, in the mid-1960s, the first problems emerged in the further industrial development of Serbia. The economic reform only mitigated the problem, but no proposal was made for an efficient model of a future industrial development. "Developing itself within the framework of the former Yugoslavia, Serbia is an example of a country that retained the strategy of import substitution as its basic strategy of its industrial development for too long. All the way to the Economic Reform of 1965, such a strategy had been producing positive effects. After that, there was a period of wandering in searching for an appropriate strategy of a further development of industry, marked with efforts to achieve the central stage of industrialization (as known as the development balancing stage), within which the necessary requisites or the application of the strategy of export expansion were to be created. However, such a strategy of the development of industry was not realized. The 1970s and the 1980s can be labeled as a

[8] The share of Montenegro in the DP of the industry of the FRY is around 4.5%, while Serbia's share is around 95.5%, the implication being that Serbia is the one to have had the key role in the tendencies of the indexes and growth rates of the FRY. Due to the lack of a series of data for a longer time period on the DP of Serbia at permanent prices, it is not a big mistake to have the tendencies of these features for FRY identified with Serbia, which is exactly what has been done in this paper.

period of an illusory growth, during which a conservative and inadequate economic, and in particular industrial, structure was formed (a high share of traditional, labor-intensive, raw-material and energy branches with a low degree of processing). That was the economic growth which was not self-affirming on the market, especially not so in a conflict with foreign competition", (Gligorijevic, Boskovic, 2007:41). In that way, the growth rate of industrial production was further being slowed down until the beginning of the 1980s, when for the first time a negative value was recorded (-0.5% in 1981-1983). Although the rates of industrial growth were high (7.5% in the 1953-1988 period), industrialization also had a larger number of contradictions. All the way to the 1980s, the significant percentage of the total investments had been made in industry. However, the trend was halted by the approaching debt crisis, by the IMF[1]'s dictating of the conditions during the implementation of the stabilization program, by the conditions made more difficult in obtaining new loans, which significantly reflected on the efficiency of the economy of the SFRY.

At the beginning of the 1990s, the war conflicts erupted on the territory of the former SFRY. The UN Security Council imposed sanctions against FRY, which additionally exacerbated the situation in the economy by limiting foreign-trade exchange. That led to an increase in the costs of operations of economic subjects and a hyperinflation recorded never before. Irrespective of the foregoing, it is thought that there would have been a collapse and a crisis of the Serbian economy but with smaller consequences. "The efficiency of the industrial development was very low and the formed industrial structure was conservative, i.e. rather unsuitable as the basis for a future development of industry. In the last decade of the 20th century, there was a definite breakdown of the applied model of industrialization in Serbia. There is a generally accepted view that the collapse of the Serbian industry occurred due to the difficulties Serbia was going through in the last decade of the 20th century. Acknowledging these circumstances, we consider that the Serbian industry would have fallen into a crisis even if there had been no sanctions imposed by the international community and the merciless destruction of its capacities in 1999, but such a crisis would probably not have been so deep"(Savic, 2009:2).

Deindustrialization in Serbia after the 1990s

Until the beginning of the transition process in Serbia, the Serbian industry (with its over 40% share) had been the dominant economic area in the structure of the GDP and foreign-trade exchange. The second most significant area had been agriculture, with an around 20% share, whereas services had been treated as a third-class component of the development of the economy, although it is known in the economic theory that the significance of services grows and the significance of the primary and secondary ones (agriculture and industry) declines with economic development. After 2000, the share of the service sector in the structure of the GDP of the Serbian economy has been increased. First of all, there is domination by banking and financial mediation services. If that were observed without perceiving the structure of the total GDP, it could be concluded that Serbia has moved into a

[9] Without their own strategies for development, the countries accepted foreign experts and recipes for overcoming the crisis which they were prescribed by international financial institutions headed by the International Monetary Fund.

higher phase of its economic development, the phase which highly-developed capitalist countries such as Germany, the USA, and other are in. After 2000, however, the service areas have only been the ones to have been recording a high rate of economic growth while industry has had either a zero or low growth rate. That has changed the structure of the GDP. In order to more significantly increase the share of industry in the structure of the GDP of the Serbian economy, it is necessary that the state should play a more active role and that the macroeconomic environment should be stable.[1]

After the successfully conducted industrialization phase and reaching a high level of economic development (a high level of the GDP/per capita), developed countries entered the phase[2] of deindustrialization. Germany, Japan, the USA and other developed European countries went through that phase. However, what has been happening with Serbia in the period after the 1990s does not represent the deindustrialization phase which highly-developed countries went through. To the contrary, it is about the radical deindustrialization which all post-socialist countries went through in their transition process. Differently from other countries in transition, in which in the majority of the cases the deindustrialization phase lasted till the mid-1990s, the deindustrialization phase in Serbia has incessantly been lasting until today, with the exception of the 1995-1998 and 2000-2005 periods. The period of the growth of industrial production in the second half of the 1990s was brought to a halt by the bombing of Serbia by NATO in 1999, when significant industrial capacities were destroyed. In the 2000-2007 period, the Serbian economy recorded a relatively high rate of economic growth of around 6%, while at the same time the rate of growth of industrial production was around 1%. It should be mentioned that the high rate of economic growth was achieved at a very low starting base of 2000. If we take into consideration the period from the beginning of transition in 1990, Serbia lost 20 years in the process of industrial development. So, "production and employment in the Serbian industry in 2010 was only around 36% of the pre-transition maximum achieved in 1987/1988. The industry became reduced to practically three activities – energy, food and beverages production and the production of basic materials (the chemical industry, black metallurgy and the production of construction materials), on which it is impossible to build the basis for including Serbia in the economic and social part of the process of the European integrations. The key causes of the deindustrialization of Serbia should be sought in the fact that, after the restoration of capitalism, the initial ownership restructuring was carried out in the frameworks of the "gray" economy. After radical political changes in the late 2000, its key protagonists legalized their business doing and ownership – which resulted in the closing of the market for the other players in the market game. The following are the consequences: (1) a lack of motivation for the development of productive (production) entrepreneurship, (2) a slow and

[10] The creation of a precondition for a stable macroeconomic environment which is reflected in the support by the state via favorable loans, a stable foreign exchange rate and foreign-trade protectionism when importing industrial products.

[11] At the beginning of the period of the development of the economy, agriculture has the biggest share in the creation the GDP. In the central stage of economic development, the most dynamic development is the development of industry, whereas in the epoch of the so-called "mature" economic development, the tertiary sector, i.e. the service sector, takes over the leading position.

uneven increase in the efficiency of the real economy and the infrastructural comfort for private investments in export-oriented business and (3) the weakening of the performances of human capital" (Adzic, 2011:405).

As it has shown during the transition, Serbia has experienced complete deindustrialization, by which the level of industrial development has been reduced to 30-60% of the level of the 1980s. The 1999 NATO bombing of military and, to a significant extent industrial, capacities was an introduction into the headlong fall of the industry at the beginning of 21st century, when its share was reduced from 20.2% in 2002 to merely 15.9% in 2009 (*Table 2*).

"In the short run, the deindustrialization of Serbia will have the following consequences: (1) a further deterioration of foreign-trade exchange, i.e. an impossibility of intensifying the export-oriented offer of industrial products of a greater added value, (2) the stagnation of and a further real fall in employment, (3) the slow substitution of flowing labor with past labor, because the largest number of workers are engaged by industrial enterprises, where the degree of automation is relatively limited, (4) the real sector is increasingly at a loss, and the accompanying activities (traffic, services, consulting, trade) are increasingly intensified etc." (Boskovic, 2011:242).

Table 2. The share of industry[1] in the Serbian GDP in the 2002-2010 period

Year	% of share	Year	% of share	Year	% of share
2002	20.2	2005	18.8	2008	17.5
2003	19.0	2006	18.7	2009	15.9
2004	18.7	2007	18.2	2010	...

Source: Statistical Yearbooks of the Republic of Serbia for 2007 and 2010, Statistical Office of the Republic of Serbia, Belgrade

Differently from the other East European countries, on the eve of the world financial crisis in 2006, Serbia had the smallest share of industry and building construction in the structure of the GDP of the economy (*Table 3*). While, during the mid-1990s, industrial facilities from developed industrial countries were being opened in East European countries, the same was sporadically done in Serbia no sooner than after the changes in 2000. According to the volume of the foreign direct, especially Greenfield investments, per capita, Serbia is lagging far behind the other East European countries. This has led to Serbia being even more technically lagging and to its low competitiveness in comparison with countries in transition, developed countries in particular.

"After the known events of the October of 2000, the reform authorities accepted a new concept of development – the *Washington Consensus*[1]. Its goal was to achieve

[12] The share of industry, as the sum of Sectors B, G and D (B-Mining and Quarrying, G-Processing Industry and D-Production of Electrical Energy, Gas and Water), in the total GDP, in the 2002-2009 period was calculated on the basis of the data in the Statistical Yearbook of the Republic of Serbia at permanent prices of 2002.

macroeconomic stability in as short a time period as possible. The concept was based on the most important principles of the transitional economy, namely deregulation, liberalization and privatization. The market was completely liberalized, the borders for free competition of foreign companies were opened, there was an enormous import of consumer goods and capital as well as an accelerated transformation of social property into private property. Those were the most important levers of the construction of a new model of the industrial and economic development of Serbia. In such circumstances, the economy and the market were sent a false signal on the lucrativeness or non-lucrativeness of the whole activities. The import of all kinds of things was being favored and there was great lagging of export. All that reflected on the movement of industrial production as well as on the share of industry in the creation of the GDP" (Boskovic, 2011:237-238).

Table 3. The share of industry and building construction in the structure of the GDP of transition countries in 2006[2]

Country	Share in %
Czech Republic	38.3
Slovakia	35.0
Romania	34.5
Slovenia	34.1
Poland	31.7
Bulgaria	31.5
Hungary	30.7
Serbia	29.1

Source: Eurostat and the Statistical Yearbook of the Republic of Serbia, 2008, p. 104.

Apart from the achieved initial results of privatization in Serbia after 2000, the expected results of the growth of the GDP and export failed to appear. During the privatization process, no account was being taken of the origin of the capital of the owners who took part in the privatization of domestic enterprises or of the profile of the capital owners' enterprises. So it was frequently the case that domestic enterprises were bought by a capital owner with bad business results. The reason for the low growth of the GDP after the

[13] The Washington Consensus is a coined term introduced in 1990 by John Williamson, an economist, unifying the basic principles which the economic policy of Latin American states should lie on. (The same group of recommendations was later applied to the rest of the world.) In the formulation of these principles, the International Monetary Fund, the World Bank for Reconstruction and Development and the US Treasury Department had the key role. All three institutions have their seats in Washington, so that is what the term was coined after. In ten points, the Washington institutions recommend: 1) Budgetary (fiscal) policy; 2) Redirection of public spending toward the fields providing a high rate of economic return and have a potential for a more just redistribution of income, like investing in primary health care, primary education and the infrastructure; 3) Tax reform reducing tax rates and broadening the base for taxation; 4) Abolishing the limitations related to the forming of interest rates, i.e. their liberalization; 5) Policy of competitive foreign exchange rates; 6) Trade flows liberalization; 7) Liberalization of foreign direct investments; 8) Privatization; 9) Market deregulation; 10) Private property protection (Katic, 2010).
[14] Taken from the deindustrialization (Kacarevic, 2009).

privatization, too, is in the structure of the FDIs in Serbia. "In front of all of us, 'the development model' in Serbia was dominantly reduced to the opening of banks, shopping malls and betting places and for building luxurious business and residential buildings. In the structure of the added value, almost 60% originates from services, and just 29% from industry and building construction. In comparison with the EU countries, which are closer to Serbia according to the level of the GDP per capita, they are seen to be having a far higher percentage of the share of industry and building construction (Table 3) than it is the case in Serbia" (Soskic, 2009:31).

The low volume of investments in industry in the past 20 years has had an impact on the drastic decrease in its share in the structure of the GDP and export today. According to Vučković, "in the previous ten years, the Serbian industry has lost the game". At an average annual growth of the GDP of 5.4% (in the period prior to the crisis, 2001-2008), services had been growing at 6.6% and industry at 1%. A small positive contribution of industry to the growth of the GDP was completely obliterated in the crisis year of 2009, so that, from the point of the creation of a new value, it comes out that it would have been better for the industry in the previous ten years not to have been operating at all! In the pre-crisis year of 2008, too, industry produced just slightly more than in 2000, however still less than one-half than twenty years ago. The number of the employed in industry during the 2000s was halved. The share of industrial production in the creation of the gross domestic product was (only) 13%, and is the lowest in the region, structural changes are modest and are slowing down, losses are accumulating" (Vuckovic, 2010).

Differently from the other countries in which the process of reindustrialization began in the mid-1990s, deindustrialization in Serbia continued during the first decade of 21st century as well and has continued till today. "That would not have been much of a problem had the service sector been capable of developing itself faster and annulling the negative trends in industry. Yet, there is a problem impossible to bridge: 95% of our exports accounts for the products of the processing industry. Even if those services which can be exported (e.g. software designing) had been developed faster, the significance of goods in exports would still have been dominant, too. The then ongoing crisis meant a stoppage in the inflow of foreign capital (loans and FDIs) and left us without foreign currency we could earn on our own. Since currently it is impossible for us to earn a lot of foreign currency, the only thing we have been left with is to "learn our lesson" and return to goods and industry" (Vuckovic, 2010).

The backbone of the export from Serbia in the period yet to come could be the increased production of food, the production and not only the assembly of cars (Zastava automobile Srbija) and car components (JURA-Rača and Niš), the production of electronic equipment and devices and information technologies. "The food processing industry can become a significant exporter of healthy (organic) food with the nationally recognizable origin. The export of these products, especially to the EU market, requires that the domestic regulation in production and the control of food be adapted to the requests of a new market. Apart from export, the food industry determines the food security of the country ensures the production of raw materials for other branches and has a multiple impact and significance

for the complementary development of agriculture and for intensifying production in it" (Micic, Zeremski, 2011:63).

Apart from its stagnation during the financial crisis, the significance of the development of the car industry is mirrored in the fact that it setting an example in introducing the most contemporary technologies and engaging a large number of inputs and sub-contractors. On the other hand, it has a big multiplier effect on the development of the domestic economy as well as the fact that the world's leading car producers import almost one-half of components or dislocate their production to countries with low-salaried employees. What could be the obstacle impossible to bridge when export is concerned is the low competitiveness of the domestic industry, which is the consequence of the low degree of the utilization of the capacities and the low labor productivity in industry. The problem of low productivity can be overcome by the successful completion of the started process of transition. Some researches indicate that "privatized industrial enterprises have not improved the effectiveness of their business operations (as a logical consequence of the change in the ownership structure) as well for the reason of, among other things, the fact that new owners were not interested in intensifying the existing production. The turnover of capital is slower in industry and requires incomparably more knowledge and managerial skills, which domestic private owners neither have nor can acquire in a short time. Only a small number of privatized enterprises have produced significantly better results than before privatization and thanks to entering the ownership of foreign capital (e.g. Slovenian and Croatian) because those companies, mainly, have no problems of bad privatizations (a fall in production, facility discontinuance, firing employees and so forth)" (Boskovic, 2011:242).

It is a fact that the process of reindustrialization is necessary in Serbia in this phase of its economic development. This is also confirmed by the experiences of the East European countries (the example of Czech Republic, Slovakia and Hungary) which have already gone through the phase of development which Serbia is currently in. Which way is it to be achieved? The state should have a significant role by reaching a clear long-term strategy of industrial development. In the starting phase of reindustrialization, the state should ensure a healthy economic environment for the inflow of FDIs for capital investments by simplifying administrative procedures. By creating a safer business environment, conditions are provided for a greater inflow of investments. By decreasing public spending and by reducing it to realistic frameworks as well as by privatizing the public sector, which in Serbia is a large user of budgetary funds, realistic conditions are created for increased investing in all economic areas, including industry, too, from own sources.

After what happened after the World Financial Crisis, there have been more and more advocates of the "balanced" state administration. "Today, the social-market economy, the socially responsible state and so on is what is more and more often spoken about. After 2007, the USA and Great Britain made a turn towards the development of industry because they freed themselves from the illusion that, instead of an industrial society, a service society has developed". Industry is still the backbone of the German economy; it is also the basic lever of the development of the states which belong to the so-called fast-growing economies (the BRIC countries). What is common to all new ideas is that a pathway

towards economic stability is not sought in ever-increasing refutation and restrictions but rather in reforms which encourage the growth of production" (Korak, 2008).

Conclusion

The process of industrialization/deindustrialization in Serbia was carried out in two phases. Until the beginning of the 1980s, a high rate of the development of industrial production and an increase in the share of industry in the structure of the GDP of the economy from 20% to 44% were recorded. The period from the beginning of the 1990s until today has been marked by the absence of investments in the economy, industry in particular, accompanied by radical deindustrialization. Today, the share of industry (16.0% from 2009) in the structure of the GDP is at the level of the share of more than 50 years ago.

After the twenty-year-long deindustrialization of the Serbian economy, the level of industrial production is around 40% of the one in the 1990s. The continuation of this process will lead to further structural disturbances and to the yet more difficult restoring of the role which industry used to have during the post-war development of the SFRY. It is a fact that the process of reindustrialization is necessary for Serbia in this phase of its economic development. This is also confirmed by the experiences of the East European countries (Czech Republic, Slovakia, Hungary) which went through the phase of development Serbia is currently in.

There is a dilemma on how the process of the reindustrialization of the Serbian economy should be carried out. The key role must be given to the state by creating a safer economic, political and legal environment through the simplification of the administrative procedure for the inflow of FDIs as well as by reaching a long-term strategy for industrial development with clear goals, priorities and bearers of a future industrial development of the Serbian economy. The key goal of the strategy of industrial development must be the identification of a future development of the industrial branches in order to modernize and raise its competitiveness on the international market. Increased state administration, however, has as a consequence getting away from the market model of the functioning of the economy.

A successful industrial development can be achieved through structural reforms and increased infrastructural investments. The privatization of the government sector should be conducted and public spending should be reduced to realistic frameworks as soon as possible in order to create conditions for increased investing in the economy and industry from own sources. The efforts to carry out reindustrialization in Serbia that have been made so far have failed and have been without a clear policy of the development of industry.

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PROBLEMI DEINDUSTRIJALIZACIJE PRIVREDE SRBIJE[1]

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Rezime

U radu je analiziran proces industrijalizacije, odnosno deindustrijalizacije privrede Srbije u periodu posle Drugog svetskog rata do danas. U posmatranom razdoblju zabeležena su dva suprotna procesa. Do početka osamdesetih godina u Srbiji se odvijao proces ubrzane industrijalizacije privrede. Industrija je povećala svoje učešće na oko 44% u strukturi BDP.

Početkom devedesetih godina Instočnoevropske socijalističke zemlje i Srbija su započele proces tranzicije privrede i privrednog sistema. U početnoj fazi tranzicije sve zemlje su zabeležile negativnu stopu privrednog rasta, pad BDP i smanjenje učešća industrije u strukturi BDP privrede. Za razliku od zemalja u kojima su negativne tendencije privrednog rasta zaustavlejne polovinom devedesetih godina, a koje su 2004. i 2007. godine postale članice EU, u Srbiji je negativan trend privrednog razvoja i deindustrijalizacije privrede nastavljen i tokom prve decenije XXI veka.

U prethodnom dvadesetogodišnjem periodu BDP privrede Srbije je smanjen na 60% nivoa iz devedesetih godina XX veka. Učešće industrije u strukturi privrede 2009. godine od 15,9%, niže je od učešća industrije Jugoslavije neposredno posle Drugog svetskog rata (oko 20%).

Ključne reči: *industrija, deindustrijalizacija, reindustrijalizacija, privreda Srbije.*

[15] Rad predstavlja deo rezultata istraživanja na projektu: "Ruralno tržište rada i ruralna ekonomija Srbije-diverzifikacija dohotka i smanjenje siromaštva", br. ON 179028, koji u periodu 2011-2014. godine finansira Ministarstvo nauke i tehnološkog razvoja vlade Republike Srbije.

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ECONOMIC ANALYSIS OF THE BAN ON FOREIGNERS ACQUIRING PROPERTY RIGHTS ON AGRICULTURAL LAND IN SERBIA

***Luka Baturan*[1]**

Summary

In Serbia it is prescribed by The Law on Agricultural Land that foreign legal or natural persons could not become owners of agricultural land. The aim of this paper is to show that such a norm creates an economic environment where an optimal allocation of agricultural land as a production factor could not be achieved. The cost - benefit analysis shows that main gainers are Serbian producers and buyers of land who are able to realize a monopoly profit, whereas sellers of agricultural land are at loss, getting a lower economic rent, as well as foreign buyers. A total loss of domestic sellers only is bigger than a total profit of buyers. In the end, it is being pointed to a relativity of the ban, in the sense of a possibility to easily get past the ban through provisions of The Law on Foreign Trade. The conclusion points out that an eventual suspension of the ban would stimulate efficiency of Serbian economy and an increase in the net welfare.

Key words: *agricultural land, Law on Agricultural Land, foreigners, property right.*

JEL: *K11*

Introduction and basic assumptions

Law may be observed and interpreted with various aspects (moral, social, religious, military, political, etc.). Economic Analysis of Law is a scientific discipline involved in studying of legal norms with economic aspects. By applying a microeconomic analysis, an attempt is made to perceive an economic effect of specific legal norms. A relation between law and economy is the relation between a form and content. Legal norms ought to be designed so to allow an efficient allocation of resources. Optimal allocation of resources or maximization of the total social welfare is being achieved at the point of equilibrium on the market of perfect competition. Any other allocation of resources is not optimal, which means that the level of the total welfare is lower in comparison to the level existing in the balance.

A perfect competition market is still only a theoretical abstraction. Every market deviates from a perfect more or less, due to a large number of factors changing at any time. Nevertheless, market mechanisms function, constantly pushing economy toward a point of

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equilibrium. Regulations brought by the state ought to regulate economic relations in such a manner that they create least disturbance to a market mechanism. Individuals, as economically rational persons, aspiring to the increase of personal gain, will lead the economy toward a balanced allocation through free exchange of resources. State intervention in economy may be justified if it is there to correct so-called market failures, but only if the benefits of the intervention are greater than costs it generates.

Serbia in 2013 is still in the process of transition from a socialist to a market economy. Even though a necessity of bringing the transition to an end is generally not being questioned, a large number of examples show that few people in Serbia completely understand the meaning of a market economy. This may also refer to state authorities (or the responsible persons within)[2] which create an environment for functioning of economy, often making barriers for unhindered exchange. Legal system in Serbia at the time of socialism had been projected in order to allow functioning of economic relation in a completely different environment. One of the tasks of both science and legislation in the transition process is creating a new legal frame for allowing functioning of the market economy.

This paper presents an existing legal frame which sets a ban for foreign natural and legal persons to acquire title to realties, specifically on agricultural land on the Serbian territory. The main hypothesis of this paper is that such a legal norm creates an economic environment where allocation of agricultural land as a resource is not optimal. Even though some economic subjects will gain thanks to this ban, its final result is a violation of market allocation and a decrease of total welfare in society. The paper will also provide an explanation of social and political causes which had led toward such a discrimination of foreign persons, in accordance with Public Choice Theory. Also, there has been presented a possibility for foreign persons to acquire agricultural land indirectly, in accordance with law. A normative and a comparative method will be used for the analysis of legal regulations. A method of neoclassic economy will mainly be used while working out an economic side of the problem, in order to present the essence of the problem through a simplified performance of the price mechanism. Afterwards, a method of neo-institutional economy will be used to perceive a functioning of the system within the existing institutional frame.

Legal analysis

One of the most important activities of the state is setting a legal frame for companies and individuals to interact economically (Stiglitz, 2013:27). Basis of the economic system of the Republic of Serbia are proclaimed in the Third part of the Constitution.[3] It says there that *"economic system of the Republic of Serbia stands on market economy, open and free market, freedom of entrepreneurship, independence of economic subjects and equality of*

[2] This is in accordance with the theory of a methodological individualism which implies that decisions are made by an individual, not a collectivity.
[3] Constitution of Republic of Serbia, Art. 89-90.

private and other forms of property".[4] Therefore, a form of economic organization which enables an efficient allocation of resources has been accepted.

Foreign persons in accordance with international agreements have all the rights guaranteed by the Constitution and laws in Serbia (except rights reserved by the Constitution and laws only for citizens of Serbia).[5] Nevertheless, as far as the right to acquire realties is under consideration, the Constitution proclaims that *"foreign natural and legal person may acquire property over realties, in accordance with the law or an international agreement"*.[6]

The *Law on Basis of Ownership and Proprietary*[7] says that foreign natural and legal persons who conduct its activities in Serbia, under the condition of reciprocity, may acquire the right of property over realties on the territory of the Republic of Serbia which are necessary for them to conduct those activities. The Law does not mention agricultural, nor any other activity as an exception (Keča, 1993:34). However, the *Law on Agricultural Land*, as lex specialis in accordance with the Law on Basis of Ownership and Proprietary, strictly proclaims that "the owner of agricultural land may not be a foreign natural and legal person".[8] Thus, foreigners are practically disabled to acquire agricultural land in order to conduct agricultural activities on the territory of Serbia.

Many states in its constitutions allow a possibility of limiting rights to acquire property for foreign persons, as Serbian Constitution does it. When it comes to the EU countries,[9] only Hungary (Csák, Nagy, 2011; Somogyi, 2004), Poland (Dadak, 2004) and Croatia (Josipović, 2003) have retained a (temporary) ban for EU citizens (valid in a transitional period), while minority retained limitations only for third country citizens (EU Institute Florence, 2005:83). This action was a reply from new EU members to a temporary ban of employment of their citizens in old Union members (Prokopijević, 2009:572).

Considering that the National Assembly of the Republic of Serbia has proclaimed *"accelerated entering"* into the European Union for a *"strategic and national goal"*[10], the state has a duty to fulfill all the criteria that has been set in that sense. One of the so-called "Copenhagen criteria" that Serbia has to fulfil in order to be accepted into membership of the EU is to build a functional market economy, as well as capability to endure the pressure of competition and market forces within the EU (Prokopijević,

[4] Ibidem, Art. 82 (general principles), paragraph 1 (translation L.B.).
[5] Ibidem, Constitution, Art. 17 (position of foreigners).
[6] Ibidem, Art. 85 (foreigners' property rights), paragraph 1 (translation L.B). Even though a land is a natural resource, the term *"natural wealth"* from the paragraph 2 of this Article does not refer to parcels of land which represent reality, but to soil as a matter, in the sense of Article 87 of the Constitution.
[7] Law on Basis of Ownership and Proprietary, Art. 82a paragraph 1.
[8] Law on Agricultural Land, Art. 1 paragraph 3. "*Agricultural land is the land which is used for agricultural production (fields, gardens, orchards, vineyards, meadows, pastures, fish ponds, swamps) and the land which could become suitable for agricultural production"* (translation L.B.). The Law on Agricultural Land, Art. 2, paragraph 1.
[9] On provisions of the EU which regulate limitations on trading with agricultural land, see: Sparkes (2007:76-79) and Josipović (2003).
[10] Resolution on Accession to the European Union.

2009:560).[11] During 2008, Serbia signed and ratified the Stabilisation and Association Agreement (SAA). It is stated there that instantly after entering into force of the Agreement subsidiaries of companies from the Union will be entitled to acquire and enjoy property rights on realties under the same condition as Serbian companies.[12] Also, Serbia has made a commitment to alter its legislation referring to an acquisition of property over realties in Serbia, in order to ensure the same treatment for citizens of the European Union members as for its own citizens within a period of four years since the day SAA entered into force.[13] SAA is to enter into force on the first day of the second month following the date on which the Parties notify each other about completion of the procedure for approval.[14] At the moment of this paper being finalized (June, 2013), Lithuania has ratified SAA as the last member of the EU.

Economic Analysis

Economic effects of banning foreign natural and legal persons from acquiring property rights on agricultural land will be presented through costs and benefits analysis. An existence or a non-existence of the ban does not influence supply directly. It does not matter to sellers whether they sell the land to domestic or foreign persons. First of all, they are interested in getting the highest price for the good they are selling. The amount of agricultural land in one area is fixed.[15] Due to a growth of price not being able to lead toward increase or decrease of the amount of land on the market, its supply is considered perfectly inelastic.[16] A model of supply and demand for agricultural land in Serbia may be presented graphically. The supply of land is presented by the curve S.

A demand for a land as a production factor has been derived from a demand for products or services it has an ability to offer. A market demand for agricultural land therefore

[11] Even if it was not implied as a condition for accession, each government has to put this goal of economic policy among other most important priorities.

[12] *"Subsidiaries of Community companies shall, from the entry into force of this Agreement, have the right to acquire and enjoy ownership rights over real property as Serbian companies (…), the same rights as enjoyed by Serbian companies respectively where these rights are necessary for the conduct of the economic activities for which they are established* (translation L.B.). SAA, Art. 53, paragraph 5, subparagraph b and v.

[13] *"As from the entry into force of this Agreement, Serbia shall authorize, by making full and expedient use of its existing procedures, the acquisition of real estate in Serbia by nationals of Member States of the European Union. Within four years from the entry into force of this Agreement, Serbia shall progressively adjust its legislation concerning the acquisition of real estate in its territory by nationals of the Member States of the European Union to ensure the same treatment as compared to its own nationals."* SAA, Art. 63, paragraph 3.

[14] SAA, Art. 138, paragraph 2.

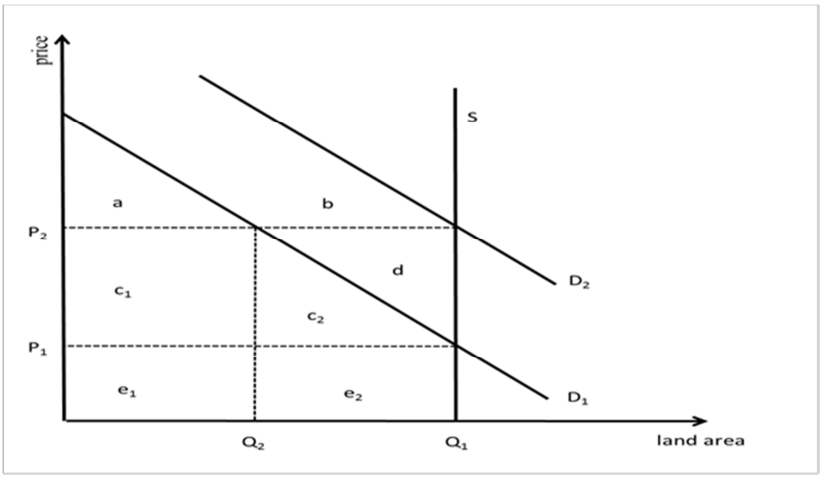
[15] In Serbia total area of agricultural land is about 3.355.859 ha, Republički zavod za statistiku, 2013:8.

[16] Inelasticity means that a change in price would not lead toward a change in the amount of the agricultural land existing in Serbia. Generally, some minor changes in supply are possible considering the possibility of reuse of other types of land, but we shall neglect it in this paper.

represents a summary of all marginal revenues of land products. The law of demand is absolutely functioning: the higher the price, the lower the demand and vice versa.

Establishing the ban from economic point of view does not represent anything else but establishing a monopoly[17] - predominance of domestic agricultural producers forming a demand over foreigners. As being prevented from acquiring the land as one of production factors, foreign agricultural producers or buyers in this case could not compete with domestic due to a legal barrier. Domestic demand for agricultural land is presented by the curve D_1 on the Graph 1.

Graph 1. Price, Quantity and Welfare Effect of the Ban



Source: Bjelić (2004), p. 386.

In an interaction between buyers and sellers, a market price of agricultural land has been formed. Everyone willing to sell the land at a given price has a possibility to do so, and the land is, by a given restriction, allocated only to domestic persons. In the graph the equilibrium price is presented in the point P_1.

Trading, even beside the existence of the ban, brings benefits to both sellers and buyers. Area e_1+e_2 presents the economic rent which is being appropriated by land owners, while utility increase of domestic buyers is area $a+c_1+c_2$.

Abolition of the ban would mean a reversal of absolute dominance of domestic producers[18] by establishing an open and free market of agricultural land. Market price of the land will set at the break-even point of supply and total demand).

If domestic producers have got the same efficiency[19], or productivity[20] of production factors as the foreign do, a supply curve would not change then. A price of the land will

[17] The term "monopoly" is used in its widest meaning here. However, when there is a dominance of several economic entities on the market on the side of the demand, it is called oligopsony.

[18] It is assumed that all domestic buyers are agricultural producers at the same time. This assumption will be questioned and abandoned later.

[19] Efficiency represents a relation between the output and total costs of production.

remain the same as if there is no ban, and there will also be no changes in the allocation and the level of welfare.

However, this hypothesis does not have to be correct. According to some researchers (Zekić et al., 2009:194-198)[21], foreign producers have a more efficient production, which means that their production costs are lower.[22] Therefore, there may be ready to pay more for an extra land unit in comparison to domestic producers – buyers. In that case, a total demand curve (domestic and foreign) is shifting to D_2. Both domestic and foreign buyers now have to set aside more money for purchasing the land, so its price rises to the level P_2. The amount of land which would be acquired by domestic buyers would fall to the level Q_2, while foreigners would purchase the difference Q_1–Q_2. The increase in the utility for domestic buyers (producers) from trading would be presented by area a in the graph, the increase in the utility for domestic sellers (now owners) by areas $c_1+c_2+d+e_1+e_2$, and the utility increase for foreign buyers (producers) by area b. Therefore, abolition of the ban on foreigners to acquire property over agricultural land would increase net welfare of domestic entities (buyers and sellers) for an area d, and at the expense of foreign entities.

So, as far as the efficiency of domestic and foreign producers is equal, the ban has got no purpose and its abolition would bring no damage to the domestic economy. If the efficiency of foreign producers is higher, a gainer from the ban abolition would be (along with them) Serbian agriculture and the whole country economy. A possibility of an entrance of foreign agricultural producers would primarily mean an inflow of foreign capital into the country, in the form of investments.[23] Producers who would decide to acquire agricultural land in Serbia, would not carry plots to their native lands, but they would initiate a modern agricultural production which would only justify high investments. That means that agricultural production in Serbia would be more efficient and the land productivity as a production factor would be increased. Considering that a total amount of agricultural land is relatively constant, that would mean a higher level of the total agricultural production in Serbia, as well as (probably) higher export,[24] which would stimulate an economic development of the country (Popov, 2008a).

[20] Productivity represents a relation between the output and a unit of the used productivity factor.

[21] Here it is possible to find on information that labor productivity in agriculture is still significantly lower than in the EU.

[22] A demand, besides the price, could be affected by other factors. One of these is future expectations. In the case of (expected) accession of Serbia to the European Union and its Common Agricultural Policy, there will be an increase in land incomes due to extensive subventions received by agricultural producers (Baturan, 2010, 2010a). However, it is sensible to presume that future expectations of both foreign and domestic persons are the same in that sense.

[23] If an attraction of direct foreign investments is wanted, one of the basic measures and techniques is a general lack of control over property (Popov, 2008:43).

[24] This opinion Prokopijević (2009:572) shares as well. According to this author, foreign *"investments into realties would increase prices of these resources and bring significant flow of capital, which would later on induce financial markets and economic development"*, (translation L.B.).

Reasons for the ban

The reason for which the legislator has banned foreign entities to acquire property on agriculture land could not be anticipated from the Law on Agricultural Land, and even less from the National Strategy of Agricultural Development[25]. The most common reason for the countries introducing such limitations is the national security. Thus, some countries forbid foreigners to acquire property over realties which are situated in some borderline areas, coastal areas or in some strategically important areas. This mostly referred to Latin American countries (Bonsal, Borges, 1943:725-726). The reciprocity represents another common reason for a potential limitation of property acquisition.

When it comes to science, local experts who are pro ban often state a *"strategic importance"* of agriculture as an economic branch or they call upon the *"national interest"*.[26] At the same time there is no definition of that national interest. There is no explanation how the national interest would be endangered by the fact that foreign investors have bought (not abducted) the land, for the price which they have agreed on with the sellers; in what way is the increase in investments, production and efficiency opposite from the national interest; should it be banned for the foreigners to buy factories in accordance with that national interest and if not, where is the difference; there are no comments on the opportunity cost which exists due to such a ban, etc.

Vukićević and others (2011:534-535), in a paper dealing precisely with this problem, also ask the question why the legislator decided that agricultural land could not become a property of foreign persons. They see the reason in a significance of this good for every country and so for Serbia as well. Without bringing into question an extraordinary importance of agriculture for Serbian economy at any moment, it is not quite clear what have happened to the agricultural production if foreigners acquired land in Serbia? Would they neglect the land (they have paid for) and suspend the production? The paper also brings out a fact that agricultural land represents *"the most valuable potential of a country and therefore Serbia as well"*, and that *"The Republic of Serbia is taking a complete care of a protection, improvement, regulation and the most rational usage of agricultural land. In the domain of states' interest for agricultural land certainly belong measures that the state takes in order to keep the social welfare in the ownership of its own citizens, so it does not become alienated or sold to foreigners"*[27] (Vukićevć et al., 2011:535). It is correct that agricultural land represents a significant potential, but somehow does not get used: domestic entities obviously do not have enough assets. If the will actually exists in Serbia to enable improvement and rational usage of potential-resources, than it has to be enabled that these

[25] Strategy of Agricultural Development. On the contrary, the necessity of establishing a market mechanism for allocation of resources is highlighted everywhere in the Strategy. An impression is being made that article 1 paragraph 3 of the Law on Agricultural Land is completely opposite from the spirit of the Strategy, as well as each letter in it.

[26] For e.g. *"It is not recommendable for agricultural land to be presented to foreign markets, as it is a strategic resource, and therefore favoring domestic capital and management secures a protection of national interests in an extremely significant sector of economy"* (Rikalović, 2003: 154), (translation L.B.).

[27] Translation L.B.

resources come into a property of the entities that value them the most in a trading process (and therefore ready to pay), regardless of their citizenship. Under the assumption that citizens who own the land behave economically rationally, they will be the best to know whether it would pay off to sell it or not, so there is no need for the state to limit them in that way. Otherwise, it would be the best for the state to nationalize the land and then start *"using it rationally"* – which had proved to be absurd in the period of socialism.

In daily newspapers, but also in scientific literature, there is another argument in support of this ban which deserves to be commented mainly because of a frequency of occurrence. It is being claimed that by selling the agricultural land to foreigners, the country where the land exists will *"lose sovereignty over a significant part of its territory"*[28] (Vukićević et al., 2011:542). It is not clear which sovereign right would have been lost?! If, for example, English Queen was to buy a field on the Serbian territory, would English law start being applied on that territory instead of Serbian from that moment on? The answer is, of course, no.[29] If it is about a possibility of big capital endangering the monopoly of force of sovereign citizens on the territory of the Republic, then what is the difference whether this capital is foreign or domestic? Why is it dangerous if the foreign capital is being invested into agriculture, and it is not dangerous if it is being invested into, for e.g. an industrial production or banking system? Is it possible for the rich foreign countries to affect the political scene in some country even if their citizens do not own the land in that country? Is it easier to influence the government of an economically poorer or richer country?[30]

The reason for introducing the ban on foreigners acquiring property on agricultural land should be sought after within arguments offered by Public Choice Theory.[31] Main gainers from the existence of the ban are big agricultural producers in Serbia. Their economic power is great, and considering a small number and common material interest, they have managed to obtain introducing of regulations which enables them to set a monopoly position by using coordinated activities and lobbying.

Benefits from such a ban belong to another very important and influential group. These are owners of a big capital, who use this ban to buy large lots of agricultural land cheaply, often using money of a suspicious origin.[32] Thus they gain double benefit. Firstly, money earned through suspicious deals is being returned to legal flows by investing into realties (a so-called "money laundry"). They are not interested in organizing agricultural production, but they are renting this land to agricultural producers, patiently waiting an (inevitable) suspension of the ban, which would probably increase the value of their assets drastically.

[28] Translation L.B.

[29] For a more detailed explanation of sovereignty, see Marković (2008:151-163).

[30] Considering the fact that authors who represent this attitude do not provide a single argument to explain it and support it, it is meaningless to continue the discussion and assuming what is the meaning of *"loss of sovereignty on the significant part of the state"* (translation and underline L.B.).

[31] It is about Economic Analysis of non-market (political) creation of economic decisions, or creation of decisions on the "political market" (Jovanović, 2008:123).

[32] The case of Darko Šarić is publicly the most famous in that sense; see for e.g.: Vasić (2010), Majdin (2010).

On the other side, sellers of agricultural land are mainly owners of small parcels. They are very heterogeneous, and regularly are not only involved in agriculture but parallel in some other businesses. As such, they are not connected nor organized, so they do not represent any respectable political factor in the sense of lobbying, especially in relation to big agricultural producers and owners of a large.

Electorate in Serbia is generally interested in improving the economic position and the overall welfare in society. However, due to a poor average education and knowledge of economic laws, an average voter in this situation is unable to articulate his interests adequately. Similarly to people in other European countries, Serbian population is fairly sensitive when it comes to agriculture. These voters are easily influenced by media, by calling upon economic patriotism, using big words such as "national interest", "strategic branches" etc. A perception is being created to these people that the local population will become inferior to foreigners who will purchase the land in Serbia cheaply.[33] It should be stated here that this is supported by the fact that in Serbia institutions of market economy are still not well accepted by many voters. This especially refers to older generations, educated in socialist period, who the term of "foreign capital" still associate to an "exploitation of workers".

For all these reasons, chances for the ban to be suspended by merits of inner political factors are very small. However, external factors' interest – mainly coming from the European Union, play an important role there. The ban on foreign natural and legal persons acquiring property on agricultural land represents a barrier to agricultural producers from the European Union to invest into Serbia. For this reason European political negotiators who are setting terms for accession of Serbia to the EU insist on the suspension of such a ban.[34]

Relativity of the ban

The Law on Agricultural Land clearly requires that the owner of the land may not be a foreign legal or natural person. Since Lithuania has finally ratified SAA, subsidiaries of the EU companies will have the right to acquire and enjoy property rights on realties same as Serbian companies on the basis of the international agreement. However, foreigners in Serbia are allowed to establish legal persons. According to the *Law on Foreign Trade* (Art. 3), legal persons (or branches of legal persons) which are seated, or which are registered in Serbia are considered to be domestic persons. So, these subjects may practice any business that they have been established for – and therefore an agricultural activity and they are considered domestic legal persons in that sense. Within this, they are allowed to acquire property rights on agricultural land (Stanivuković, 1996). Thus, foreign natural and legal persons may indirectly through a company registered in Serbia acquire property rights on

[33] *"(...) In this way our agriculturalists will be forced to work for a foreign owners as wage earners, while the profit will go to foreigners (...)"* (Vukićević et al., 2011:541), translation L.B. Attention should be paid to the language that are used in the text ("strane gazde" - *foreign owners*, "nadničari" - *wage earners*, "naši poljoprivrednici" - *our agriculturalists*, etc.).

[34] Of course, this does not apply only to Serbia, but to other East European countries pretending to became members of the Union, or which have already accessed. Therefore, all these state candidates had to accept suspension of this ban in a certain period.

agricultural land, completely in accordance with the law. Of course, that right will be registered in the name of the company, which again is owned by a foreign person.[35]

According to the Coase Theorem (Coase, 1960) if property rights were defined clearly and transactional costs were low, interested parts would always reach an efficient allocation of resources through a direct communication, regardless of the initial definition of rights. Efficient allocation of agricultural land means that through a process of voluntary exchange it will come into property of subjects who value it the most, and who are therefore ready to pay for it the most. Due to existence of various norms which in different laws treat this matter differently, it is possible to say that rights for foreigners to acquire property on agricultural land are not clearly defined. It is not completely and unambiguously defined whether foreigners are entitled or not to acquire property rights. This leaves a space for different interpretations, which creates legal insecurity for potential investors and raises the business risk, which further on has to reflect on increased costs of their investments. Therefore, these legislative solutions are not suitable for serious investors, but for those prone to riskier investments, or those previously ensuring a political support.

Conclusion

The provision of the Law on agricultural land which is restricting the right of becoming an owner of agricultural land to foreigners has caused many dilemmas. Observed from a strictly economic point of view, this provision lowers the efficiency of Serbian agriculture. Negative effects on the welfare of certain entities certainly overcome benefits of the gainers, and those are firstly big domestic agricultural producers and owners of big capital.

Abolition of this norm could increase productivity and efficiency of domestic agricultural production, as well as the welfare of small parcel owners, whether they were sellers, or they were renting the land. Also, foreign investors, firstly from the European Union, would gain benefits. Of course, domestic owners of a big capital would lose the possibility to acquire agricultural land at low (domestic) prices, and make monopoly rent by selling their products at higher (world) prices.

Already this provision does not contain much sense, considering that there is a simple way to "get around" it in accordance with the law, by establishing a legal person in Serbia. Nevertheless, it causes dilemmas and represents a risk for potential investors, because they can never be certain about the way in which Serbian courts will interpret this norm in the future. For a country in which market economy institutions are still insufficiently developed, a chance for suspension of inefficient regulations comes through the pressure of foreign factors, through the Stabilisation and Association Agreement. If establishing of market economy is wanted, Serbia needs to build such a legal system which enables an undisturbed functioning of market mechanisms. A removal of such a norm from the legal system will be another step in that direction.

[35] It would be interesting to do a legal analysis whether by a liquidation of a business company, a foreign natural person – the owner of agricultural land would be able to register his property right in accordance with the law. Holding strictly to the article 1 paragraph 3 of the Law on Agricultural Land, this would not be legal. The opposite possibility is stated with Vukićević et al., 2011:538.

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EKONOMSKA I PRAVNA ANALIZA ZABRANE STRANCIMA DA STIČU PRAVO SVOJINE NA POLJOPRIVREDNOM ZEMLJIŠTU U SRBIJI

Luka Baturan[36]

Rezime

U Srbiji je Zakonom o poljoprivrednom zemljištu propisano da vlasnik poljoprivrednog zemljišta ne može biti strano fizičko ili pravno lice. Ova norma izazvala je dosta polemike u javnosti. U prvom delu analizira se mesto zabrane sticanja prava svojine na poljoprivrednom zemljištu u pravnom poretku Srbije. Iako Zakon o osnovama svojinskopravnih odnosa načelno dozvoljava strancima da stiču pravo svojine na nepokretnostima, Zakon o poljoprivrednom zemljištu kao lex specialis derogira ovo rešenje. U drugom delu rada data je analiza troškova i koristi od postojanja ove zabrane, a zatim i efekti do kojih bi došlo ako bi zabrana bila ukinuta. Potom su podrobnije analizirani i argumenti koji govore u prilog, odnosno protiv postojanja zabrane, pre svega sa aspekta teorije javnog izbora. Na kraju se baca svetlo na relativnost zabrane, u smislu njenog lakog faktičkog zaobilaženja kroz odredbe Zakona o spoljnotrgovinskom poslovanju. U zaključku se ističe da bi eventualno ukidanje zabrane podstaklo efikasnost srpske ekonomije i uvećanje neto blagostanja.

Ključne reči: *poljoprivredno zemljište, Zakon o poljoprivrednom zemljištu, stranci, pravo svojine.*

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Review Article

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ANALYSIS OF GENDER EQUALITY AND EMPLOYMENT IN THE VRBAS MUNICIPALITY

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Summary

Transitional changes in Serbia have contributed to drastic rise in unemployment rate, significantly impacting women in rural areas. The constant rise of unemployment has increased the gap between rich and poor, causing many families to file for bankruptcy. Regular changes in the market place have enabled flexibility within operational and strategic planning for business. Solving unemployment problem should start at municipal level, where understanding of statistical analysis as well as considering non-statistical information is crucial. In order to measure results from the gathered information and create guidelines, involvement of professional services, advisory bodies and committees is needed. The potential development of Vrbas municipality as well as positive economic outcome on global level starts with the fertile soil, agricultural sector, agro-tourism and rural development.

Key words: *transitional changes, employment, gender equality, rural development, agro-tourism*

JEL: *J01, J16*

Introduction - unemployment as a direct result of transition

Vrbas was considered one of the economically developed municipalities with a long tradition in the production and processing of agricultural products in the Republic of Serbia, and the former Yugoslavia. The industry had the most significant part in the economic structure of the municipality earned income (58% of GDP). Company, or better to say former socio - agricultural products processing enterprises are mainly located in the work zone on the move - Vrbas and Kula, and before privatization they represented one of the most important factors of economic development of the municipality and the region: Factory oils and vegetable fats "Vital", Met Industry "Carnex", Sugar factory "Bačka" and Confectionery Industry "Medela". Famous brands are Vital margarine, Carnex pate, Medela "Štrudlice" (as well as other products such companies) that are so

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recognizable across the Vrbas old Yugoslavia, and the Middle East market. Data on the number of employees in the company Vital says that since about 1200 workers, after privatization was reduced on about 200, talking about the imperative rationalization of market-oriented production, but also extremely disadvantaged social status around 1000 employees (actually 1000 families → 1000 x 4 = 4000 people) who have lost their sources of income and ultimately the means of subsistence. Similarly, but in a much milder form of restructuring happened to other agricultural companies, bringing the Vrbas municipality position where, how jokingly talked about among the local population, was not employed "only one who did not want" - the devastating figures of over 7.000 unemployed.

In addition to developed industry, the tertiary sector of the economy has had a great significance trough in the development trade of manufactured products (partially and the raw materials) and catering industry that has been developed primarily through hunting tourism. Organized groups of hunters from home and abroad, had enjoyed in the abundance of wildlife, untouched nature on the stretch the settlements Kucura and Savino Selo, homemade meals, rural handicrafts and Agro-tourism. The newly established legislative framework that disables bringing out meat without the use of adequate storage transport vehicles, and without previous laboratory testing, hunting tourism has decimated. The consequence of untimely responses to the logical health measures in the storage and transfer of prey, the political situation and marginalization of our country, has conditioned the substantial direct consequences on significant possibility of earnings in populated areas, even in the whole municipality. Logically, this led to a reduction of income from the exercise of traffic, international trade relations and storage.

During the events of 90-years in Serbia and on the territory Vrbas municipality, due to transitional changes, but and acting of law and market there has been a decline of metal manufacturing industry, wood - processing and textile industries. Enterprises in Vrbas - metal industry "Metalogradnja", chemical Industry "Mepol", timber industry “Drina“, knitwear industry “DP VIP“, textile industry “Svilara Vrbas“, construction company “Napredak“, “Progres“, etc. are ended up in bankruptcy and ultimate liquidation.

Cessation of knitwear, silk and others companies where women are largely employed (due to the nature of the job), has further threatened the economic status of women and gender equality. The salaries of employees in these product areas, typically been lower than other agricultural companies - manufacturing and food production in the municipality, and in these companies are mostly women working in jobs that are poorly paid in relation to the tasks they perform male employees half. A drawback of the women who lost their jobs cessation of these companies is that they mostly belonged to the age group over forty years and worked in jobs with lower education, and their redeployment and retraining required dealing with the problem of non-competitive age, the transition to the revised the labor market.

The aim of the paper is making a mini action plan in the form of recommendations to the competent institutions, and in the direction of economic empowerment and

employment in the municipality of Vrbas (especially women in the urban areas of the municipality), as part of the Commission for Gender Equality.

Methodology

The following data will display: trend - the cycle of employed, the unemployed and employment at State level (Source: Statistical Office of the Republic of Serbia), review of unemployed Vrbas unemployed by educational attainment and sex, an overview of the unemployed by length of unemployed people by length of unemployment (the reporting period of December 2012 National Employment Agency – Department Vrbas), percentage of unemployed women in the comparison period, April 2011 - December 2012, and female unemployment in the urban areas of the municipality of Vrbas in relation to its population.

The analysis will compare the female unemployment rate compared to the male population in the urban areas of the municipality and the city; compare the ratio of unemployment in populated places Vrbas municipality (villages) and in the Vrbas town.[3]

Starting function of gender equality in employment

One of the most significant instruments of local self-help women is Commission to monitor in the monitoring and implementation of gender equality Vrbas municipality that functions 10 full years, regardless of the political structures authorities. Even though her role is primarily advisory, the Commission has established a network of cooperation with the following institutions: Provincial Secretariat for Economy, Employment and Gender Equality, local NGOs, Center for social work, police, schools, the Prosecutor's Office, the Health Center "Veljko Vlahović", Vrbas General Hospital, representatives of the media, the National Employment Agency - trying to synergistic action of pressure and media influence on public opinion and produce a concrete action of the local community. Successful work of the Commission is reflected primarily in recognizing problems encountered by women face (and not just women) in everyday life: family violence, health problems and unemployment. Starting from 2008, as a part of the planned activities of the Commission in cooperation with the NGO's "Autonomous Women's Center", continuous operation counseling "For a life without violence" have been organized. The goal of Counseling is that victims of violence of any kind in a patriarchal middle primarily be instructed to ask help. Doctors of different specialties have helped many victims (of both sexes) to document the psychological, physical, sexual, and **economic violence** - allowing their rights supported seek arguments and institutions of the judiciary, the police, etc.

Health care is raised to a higher level with check-ups like "Open doors" on the departments of Health and Hospitals or "Health bazar" (both in town and in residential areas), where patients in a simple way, without an appointment, and health

[3] The goal of the analysis imposed the selection of the most recent data which dating from December 15th 2012 (reporting period to December 2012), the sake of comparison the data from the study of the Commission for Gender Equality of Vrbas municipality (April 2011) and the choice of stratified sample of four occupational groups with the highest rate of unemployment of both of these period.

cards can inspect his health, and, if necessary, be referred for further treatment. Held a series of educational lectures on reproductive health, as well as the transition on the occurrence of depression in women.

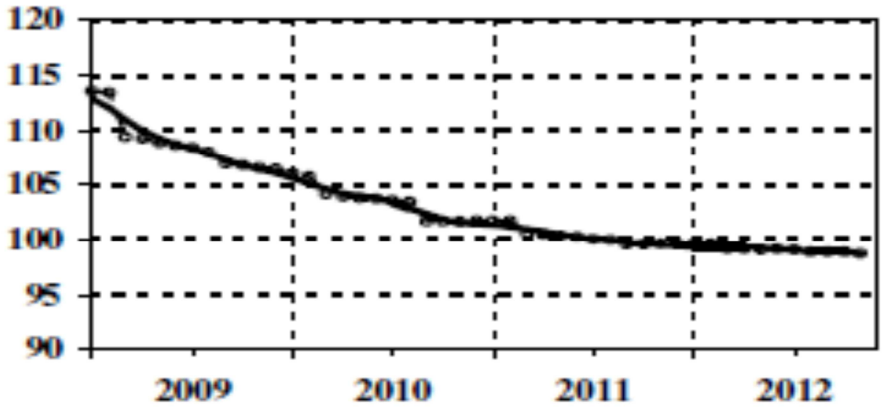
"In cooperation with the U.S. National Institute (NDI) conducted activities on data collection and analysis of unemployment in the municipality with special emphasis on the number and structure of women, both in town and in the settlements of Vrbas municipality"[4]

The result of the analysis pointed to the large number of unemployed young professionals as well as women with lower levels of educational attainment. In cooperation with local authorities and the Provincial Secretariat for Labour, Employment and Gender Equality, with project "First Chance" in 2012 was employed 25 young people - 13 women (7-high school education; 6-college education), while gerontology nurses training project employed 40 women for help older people, and people with special needs (high school degree).

Analysis of unemployment

Economic policy at the state and local level is based on updated information on current movements in the economy, as well as their long-term and / or cyclic behaviour.

Chart 1. Total employment (at the level of the Republic Serbia per year)

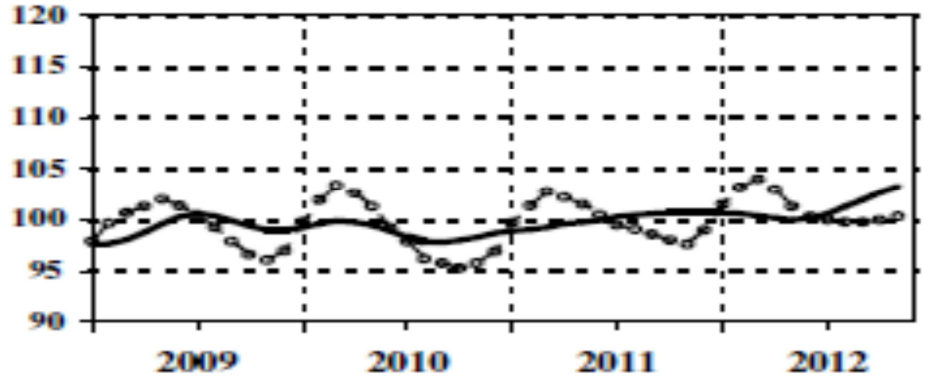


Agenda: Ø 2011 = 100; ------ trend - cycle component; --- o --- the original series.

Source: Republic Institute for Statistics (2012): Employment Trends as of December 2012, pg. 25, available at: www.webrzs.stat.gov.rs/WebSite/Public/PublicationView.aspx?pKey...1

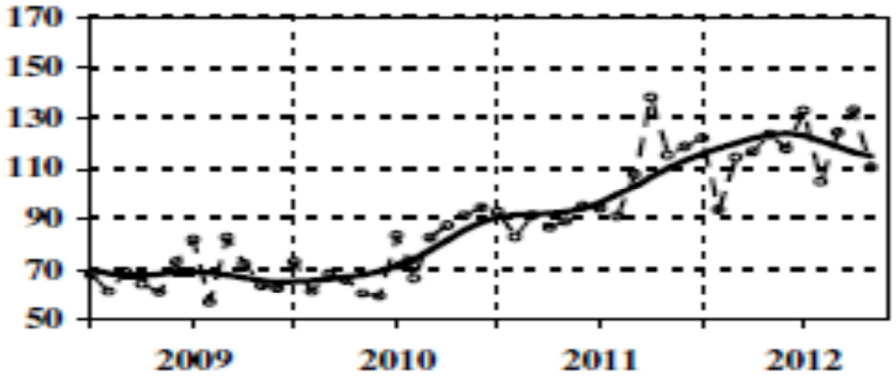
[4] Bjelivuk, A. (2012): *An example of good practice*, Voice, independent newspapers, XL, pg. 7, Vrbas.

Chart 2. Unemployed (at state level)



Agenda: Ø 2011 = 100, ------ trend - cycle component, --- o --- the original series
Source: Republic Institute for Statistics (2012): *Employment Trends as of December 2012*, pg. 26, available at: www.webrzs.stat.gov.rs/WebSite/Public/PublicationView.aspx?pKey...1

Chart 3. Employment records - National employment agency - RS



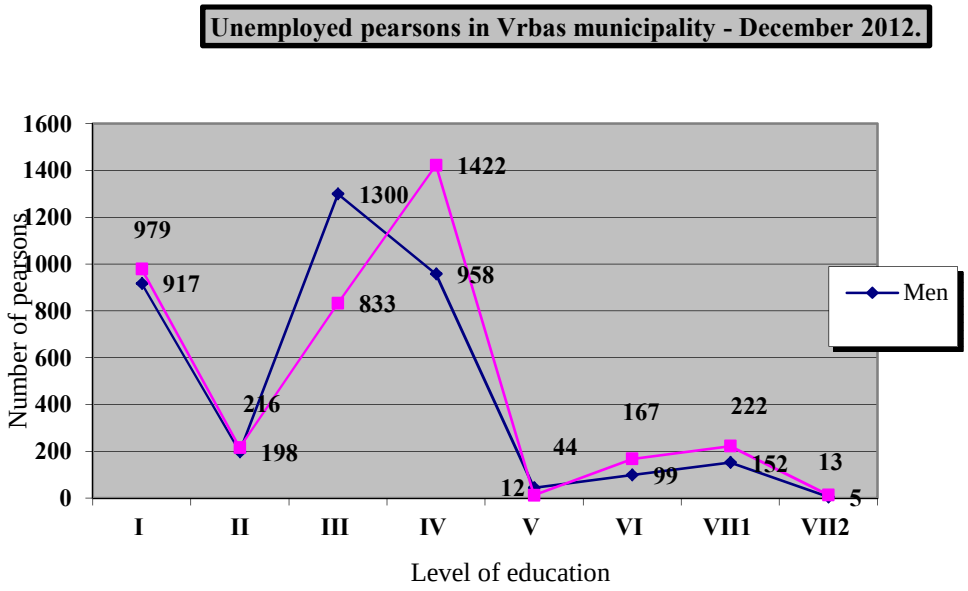
Agenda: Ø 2011 = 100, ------ trend - cycle component, ---- o --- original series.
Source: Republic Institute for Statistics (2012): *Employment Trends as of December 2012*, pg. 25, available at: www.webrzs.stat.gov.rs/WebSite/Public/PublicationView.aspx?pKey...1

Comment: One of the base indicators is the trend of employment, the (above - mentioned) chart shows the trend - cycle component, along with the original monthly data, at the level of the Republic Serbia. In the tables listed original data, base or chained index - for the current year and the previous two years. Index data base is updated calculating the index of the every current year, compared to the average of the previous year as the base (Ø = 100). “In the third quarter of 2012, total employment (note of author: at the state level) is 0.6% below the average of 2 compared to the average of the previous year as the base the 201, and by 0.3% compared to the third quarter of 2011. For the first eleven months of the 2012 total

employment is 0.9% less than the average from 2011, and for 1.2% less than of total employment for the first eleven months of 2011."[5]

On the unemployment register the National Employment Agency - Department Vrbas at the end of the reporting period of 2012, there were 7538 registered people, of which 3865 are women.

Chart 4. Unemployed persons in Vrbas municipality, December 2012.

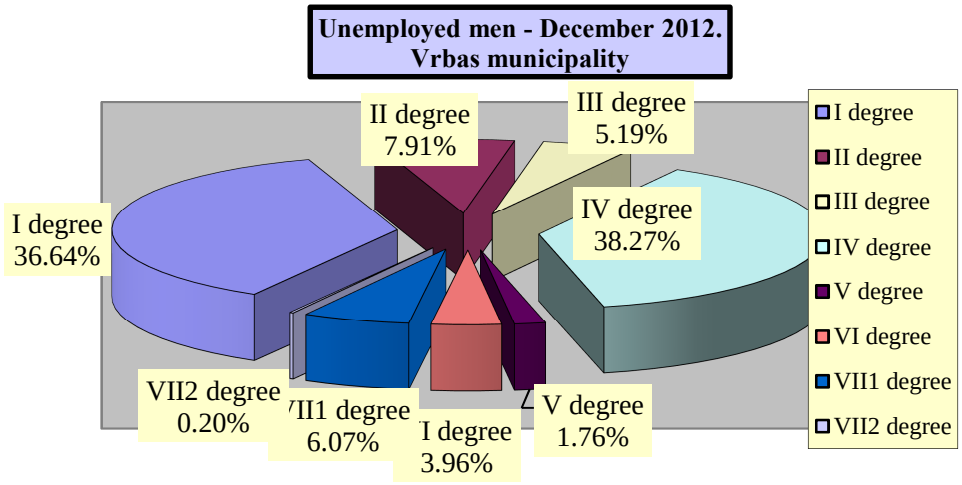


Source: Employment Action Plan for the Municipality of Vrbas, 2013, pg. 5

Comment: The chart shows that in the Vrbas municipality higher unemployment of women. The exception is the third level of education, where unemployment significantly is higher at male population.

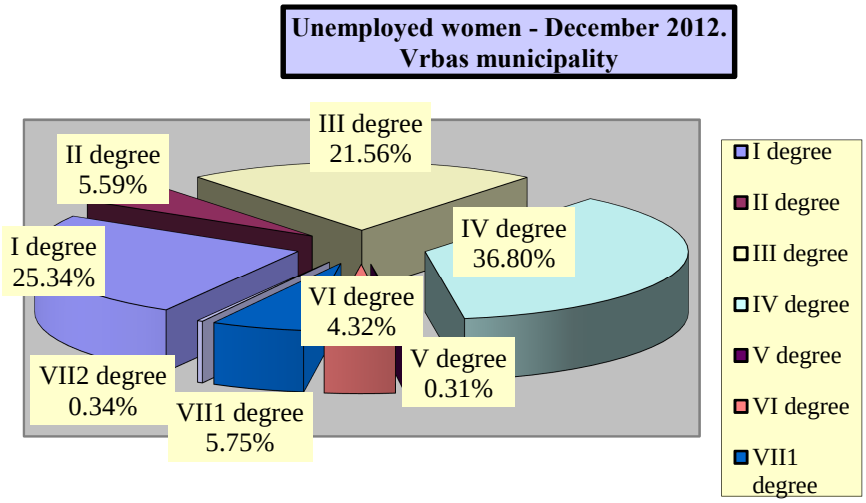
[5] *Source: Republic Institute for Statistics (2012); Employment Trends as of December 2012, page* 25, available at: http://www.webrzs.stat.gov.rs/WebSite/Public/PublicationView.aspx?pKey...1

Chart 5. Unemployed males in percentage by degree of qualification, December 2012.



Source: Employment Action Plan for the Municipality of Vrbas, 2013, pg. 5

Chart 6. Unemployed women in percentage by degree of qualification, December 2012.

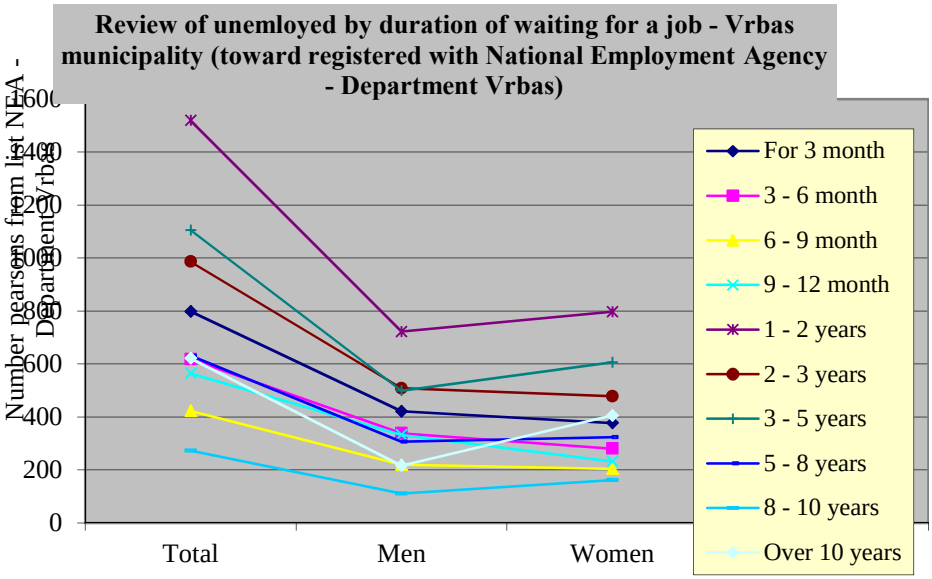


Source: Employment Action Plan for the Municipality of Vrbas, 2013, pg. 5

Comment: Percentage comparison of unemployment of both sexes per educational attainment, we came to the following results: I degree - men 24.97%, women 25.34%, II degree - men 5.39%, women 5.59% III degree - men 35.39%, women 21.56%, IV degree - men 26.08%, women 36.80%; V degree - men 1.20, women 0.31%; VI degree – men 2.70% , women 4.32%; VII1 degree - men 4.14%, women 5.75% VII2

degree - men 0.14%, 0.34% of women. Given the presented data it can be concluded that there is a relatively balanced unemployment both sexes, except with a lower degree of professional education, that assumed (III, **IV**) the involvement of physical characteristics, or possible gender inequality compared to female sex.

Chart 7. Review of unemployment duration of waiting for a job



Source: Employment Action Plan for the Municipality of Vrbas, 2013, pg. 5

Comment: The length of unemployment is significantly bigger for women in period over 10 years, which indicates the possible inelasticity compared to men in sense of retrain, acquiring new knowledge and skills of women who are in transition changes lost their jobs, or they lost during the privatization process.

Further analysis will show the original the data NEA – Department Vrbas outpost on the review of the unemployed persons on the day of April 30th 2011 and at the end of the reporting period, the 2012, with special emphasis on women in the town and settlements Vrbas municipality. "The rejection of information relating to the missing data can be correctly only if they are complete units that represent a random subsample of the original sample. This are simply checks by comparing laws of probability the specific variables (Yi), which is based only on the complete data, with the law of probability Yi2, which is now based on the missing data, and they were determined to enter into the original sample. Such procedures for testing are useful, but have weak power making decision when is small the percentage of missing data."[6]

[6] Vasic, V. (2001): *Design of experiments and analysis of multi-dimensional variables in the statistics of data loss*, Statistical Review, XLX, 1-2, pg. 119

The analysis is based on complete data, but have been omitted certain occupational groups with incomplete data, and smaller number of unemployed persons.

Data on unemployment will be compared with the number of population as relationship of *stratified sample* in relation to the overall sample of the unemployed. Stratified sample of unemployed represents occupations groups ([1] education, administration, law; [2] healthcare; [3] economics, finance, management; [4] beauty care, sports) with significant unemployment rates of both sexes.

For example:

Table 1. Unemployed in Vrbas 30.04.2011./15.12.2012. - Occupational groups: education, administration, law.

Education, Admin. Law	Entitled education	Total number	Women	Vrbas	Bačko Dobro Polje	Zmajevo	Ravno Selo	Savino Selo	Kucura
Prof. of Class	VII	28 /18	25/16	16/13		2/0	3/1	1/0	3/2
Prof. of Phil. and Logic	VII	3/2	3/ 2	3/2					
Prof. of History	VII	2/3	2/1	2/1					
Prof. Ops. theory	VII	1/0	1/0	1/0					
Prof. of Serbian language	VII	6/4	5/4	4/3					1/1
Prof. of Ruthenian lang.	VII	1/0	1/0	1/0					
Prof. of Italian lang.	VII	4/0	4/0	3/0		1/0			
Prof. of English lang.	VII	1/3	2	2					
Prof. of Art gr. of subject	VII	1/1	0/1						
Prof. of Physical education	VII	9/7	5/1	5/1					
Prof. of Biology	VII	1/0	1/0	1/0					
Prof. of Geography	VII	2/2	2/2	1/2	1/1				
Class teacher	VI	9/7	9/7	5/4	1/0		1/0		2/3
Teacher of Russian lang.	VI	1/0	1/0	1/0					
Math teacher	VI	1/0	1/0	1/0					
Univ. assist. of Philosophy	VI	1/0	0/0						
Master sc. and Mathematics	VII/2	1/0	0/0						
Mathematic tech. associate	IV	8/3	5/1	1/1	1/0				3/0
Mathematic progr. associate	IV	1/7	1/6	1/4				0/1	0/1
Philologist	VII	1/5	0/4	0/3	0/1				
Psychologist	VII	1/5	1/5	1/5					
Sociologist	VII	2/1	1/1	1/0	0/1				
Politicologist	VII	2/3	0/1	0/1					
Geographer	VII	2/0	1/0	1/0					
Bech. of Law	VII	32/12	26/6	21/5	4/1	1/0			
Lawyer	VI	10/9	7/5	7/4			0/1		
Uns. lawyers	VI/1	1/0	1/0	1/0					
Legal technician	IV	19/18	11/14	11/6		0/1	0/1	0/2	0/4
Legal operator	IV	2/0	2/0	2/0					
Managi. operator	IV	20/14	18/11	18/3	0/4	0/1	0/1	0/1	0/1
Admin. techn.	IV	8/1	8/1	6/0	2/1				
Uns. admin.	IV	7/5	7/5	7/2					0/3
Bookkeeper	IV	7/11	6/10	6/6				0/1	0/3

Education, Admin. Law	Entitled education	Total number	Women	Vrbas	Bačko Dobro Polje	Zmajevo	Ravno Selo	Savino Selo	Kucura
Administrator	IV	1/8	1/7	1/3	0/1			0/1	0/2
Typist	IV	1/1	1/1						1/1
Auxiliary typist	III	22/18	22/18	22/9	0/1	0/3	0/1	0/2	0/2
Aux.stenotypist	III	1/1	1/1	1/1					
Librarian	IV	1/0	1/0	1/0					
Grammar sch.maturant - ling. direction	IV	4/13	3/7	3/4	0/1		0/1	0/1	
Grammar sch.maturant - natural direction	IV	7/3	2/2	2/1	0/1				
Schoolmaster and assoc. teach.	VII	3/5	3/5	3/4	0/1				
Total number of unemp. persons		**238/190**	**189/147**	**161/89**	**9/14**	**4/6**	**4/6**	**1/9**	**10/23**

Source: National Employment Agency – Department Vrbas / Study Commission on Gender Equality of Vrbas

Table 2. Percentage analysis of unemployment on date 30.04 2011. / 15.12.2012.

Parameter	Number of unemployed 30.04 2011/15.12.2012		Percentage of unemployed 30.04 2011/15.12.2012	
Total	7845	7538	-	-
Unemployed - start. sample	997	979	100%	100%
Total women in the sample	766	735	76.83%	75.08%
Women in Vrbas	482	418	48.35%	42.69%
Women in Bačko Dobro Polje	76	73	7.92%	7.46%
Women in Zmajevo	51	50	5.12%	5.11%
Women in Ravno Selo	45	50	4.51%	5.11%
Women in Savino Selo	60	68	6.02%	6.95%
Women in Kucura	58	76	5.94%	7.76%

Source: National Employment Agency - Department Vrbas / Study Commission on Gender Equality of Vrbas (by comparison)

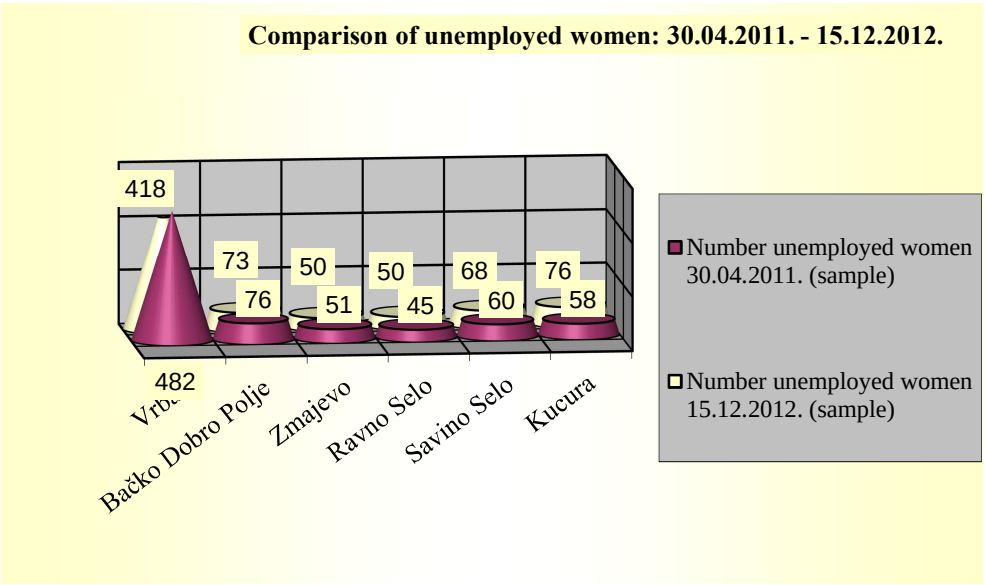
"Analysis of the data presented in this paper is difficult due to the problem of incomplete contingency tables. Formation of statistical tables as primary, compulsory and final tabulation of data types is the first result of statistical research. The statistical tables represent a form of displaying data in a series or summative or suitable form which makes it possible to review the results of statistical surveys as clearly, as well as to facilitate comparison and use of information from them. Contingency tables are a form of statistical tables and today represents one of the most commonly used tables. **A particular problem that arises in the analysis of contingency tables analysis tables among their data are 0.**"[7]

As explained Wickens (1989): "Under most circumstances a few empty cell in a table of data present no difficulties to the analysis. Usually an observed frequency of the

[7] Boškovic, O. (1997): *Quantitative Methods in Economics*, University of Belgrade, Faculty of Economics, pg. 25-27.

zero only means that the cell is rare, which may or may not be consistent witch the model and is incorporated into the test statistics. Usually an observed frequency of zero only means that the cell is rare, which may or may not be consistent which the model and is incorporated into the test statistics. However, where many cells are empty, adjustments in the degrees of freedom are sometimes necessary. The most obvious case occurs when a line of zeros in the data tables causes a marginal cell used by the fitting algorithm to be zero. If so, the effects, represented by these cells cannot be studies. If, by chance, no left-handed female machinists are sampled in a survey, then nothing can be said about the opinion of the left-handed female machinists as a separate category. Their opinions may not be consistent witch a model that is to be fitted, but without observations, one cannot tell. The analysis must be adapted to exclude the unobserved cell."[8]

Chart 8. Comparison female unemployment April 2011 - December 2012.



Source: National Employment Service – Department Vrbas / Commission for Gender Equality of Vrbas

Comment: At the designated time for a stratified sample of occupations with the largest number of unemployed persons, larger deviations are observes in the number of unemployed women in the urban environment - the number of unemployed women increased from 418 to 482.

Comparing percentage mean value number of unemployed women in the municipality of Vrbas in stratified sample occupations with the highest unemployment rate at 30 April 2011, 766 → 122 = 15.93% and on 15 December 2012, 735 → 129 = 17.55%, it can be concluded that the unemployment rate increased by 1.62%

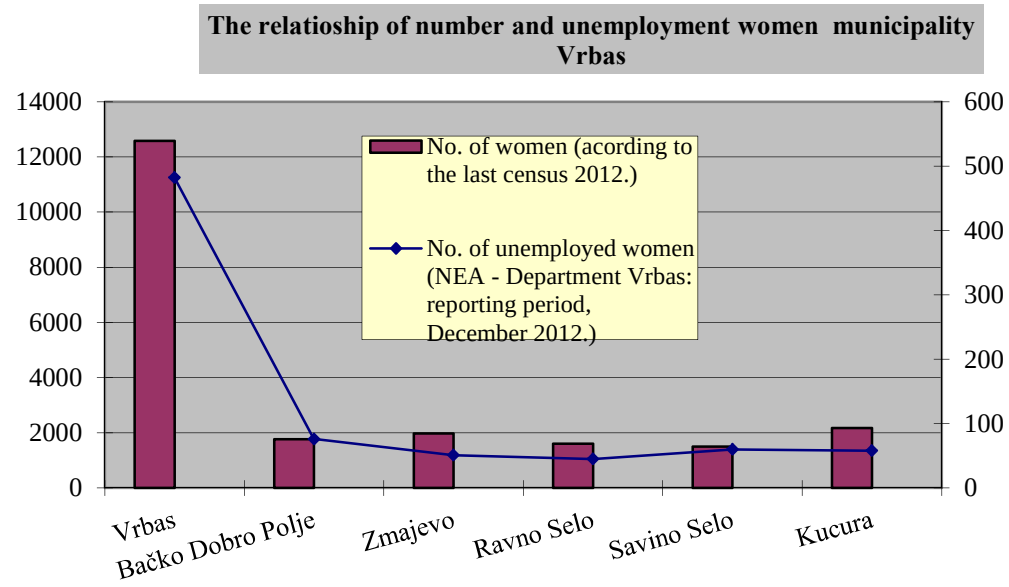
[8] Wickens, D. T. (1989): *Multiway Contingency Tables Analysis for the Social Sciences*, p. 7

Table 3. Number of population per the last census (2012)

Teritory	Population	No. of women	Percentage of female population
Vrbas (Municipality)	**42092**	**21660**	**51.46%**
Vrbas	24112	12584	52.19%
Bačko Dobro Polje	3541	1764	49.82%
Zmajevo	3926	1980	50.43%
Ravno Selo	3107	1600	51.50%
Savino Selo	3058	1555	50.85%
Kucura	4348	2177	50.07%

Source: accessed on webrzs.stat.gov.rs/WebSite/Public/PageView.aspx?pKey=162, on 01/08/2012.

Chart 9. The relationship of number and unemployment women



Source: Internet (webrzs.stat.gov.rs), accessed on 01/08/2012, and the National Employment Service - Department Vrbas (by comparison).

Comment: Although is indicated tendency of reduced employment of women in urban areas (Chart 8.), the parallel data of the number: woman by the last census in 2012, and the number of women at the last reporting period of December 2012. the National Employment Agency, we get the result of higher unemployment in the urban areas of the Vrbas municipality, especially in the rural areas Bačko Dobro Polje and Savino Selo. It should be stressed that the number of women in the inhabited place Bačko Dobro Polje by the last census (2012), by percentage is the smallest in Vrbas municipality: Bačko Dobro Polje 1764 – 49,82%.

The basic principles of statistical analysis, explains how Wickens (2010) require complete familiarity with meaning of data, significant statistical analysis cannot be performed without the non-statistical data, more non-statistical information gives the possibility for more proper conclusion.

"Roughly said, these principles are obvious, but it is surprising how often they are predictable. A rough distinction can be made between two types of statistical analysis. Sometimes, comes to research by series of already prepared questions. The goal of data analysis is to answer the questions. An analysis of this kind is called rationale analysis... In contrast, research analysis is with data in the mind of graphs and tables, no special issues. Its development is dictated by the data, not (goal - note author) answers to questions, so can be used for research and the confirmation (without the expected the final research results – note authors).

Without planned question for rationale of analysis, the research results of analysis are much weaker. The main goal of the statistical analysis is to separate the real phenomenon from random phenomena. For this reason, examines much wider range of potential results in the research analysis, seeking that evidences for each result be stronger than in the confirmation analysis. Therefore, it is not uncommon that confirmatory analysis answers to the question, but only research analysis may raise the matter for further study."[9] – explains Wickens (1989).

In the scope of research about (un) employment - especially female population in Vrbas municipality, were used the data investigating the statistical analysis of the Statistical Office of the Republic of Serbia, National Employment Agency - Department of Vrbas, but the results are supplemented by explanations of static comparative analysis in the two time periods (April 2011 and December 2012) in relation to the town area and populated places of the municipality.

Conclusion – Employment opportunities for women through rural development

The statistical analysis revealed that **the total number of employed in the Republic of Serbia has decreased by 0.9% in 2011, and 1.2% in comparison to the average employment rate in 2011.** At the end of the reporting period of 2012, NEA unemployed register reported **7538 unemployed people within Vrbas municipality, of which 3865 are women.**

Duration of unemployment is significantly higher for women in the period over 10 years, suggesting a possible inelasticity compared to men when it comes to retraining, acquiring new knowledge and skills of women who during transition lost their jobs or lost it in the process of privatization process.

Comparing an average value between the number of unemployed women in Vrbas municipality (in a stratified sample of occupations with the highest unemployment rate) **on April 30th 2011, 766 → 122 = 15.93% and on December**

[9] Wickens, D. T. (1989): *Multi-way Contingency Tables Analysis for the Social Sciences*, p. 5-6, available at: www.amazon.com

15th 2012, the 735 → 129 = 17.55%, it can be concluded that the unemployment rate of women in Vrbas municipality has increased by 1.62% in less than two years. The initial analysis display decrease in numbers of employed women within urban areas, by comparison between e last census in 2012 of unemployed women and the number of women at the last reporting period of December 2012 from The National Employment Agency, we obtained the data on higher unemployment in rural places of Vrbas municipality (especially in rural areas Bačko Dobro Polje and Savino Selo). It should be noted that based on the last census of 2012, the percentage of unemployed women in the rural area Bačko Dobro Polje is largest within Vrbas municipality: Bačko Dobro Polje 1764 to 49.82%.

Statistical analysis supplemented with **non-statistical data of exploratory study of the Commission for Gender Equality** indicates that a certain number of women in the in rural areas of the Vrbas municipality are not reported to the National Employment Agency. It is clear that **the percentage of unemployed women much higher. Rural women often work on unregistered farms, without the possibility of planning, decision-making and allocating financial gain.**

The Commission for Gender Equality of Vrbas municipality has launched a range of important strategies in order to establish action plans and solutions for employment of women (and not just women!) in Vrbas municipality, and wider. Proclamation of gender equality, action to raise awareness about the health culture, education, computer knowledge and so forth, is the first step in addressing the issues of gender equality and employment.

Employment opportunities are directly related to **rural development**, which includes a good infrastructure within urban and rural areas: kindergartens (day-care centres for children), schools, institutions for care of elderly (day-care centres for the elderly, clubs for the aged persons, gerontology homes) hospitals, media availability through public information and internet.

Development of municipalities is directly related to establishing strategies that must include short-term and long-term guidelines for uniform treatment (respecting the localities and specific traditions of certain rural areas). **A good starting basis is the recently finalized list of agricultural holdings, as well as an inventory of available resources and agricultural good.**

"Analysis of economic implications of the sustainable agriculture can be conducted in light of theories of development thresholds and cost-benefit analysis. In this sense, a lower threshold of development (constraints that lead to increased costs of doing business) may be considered that all investments are made in a given area, but not exceeding a predetermined threshold of profitability. Threshold of development (which eliminates the restriction of a new way of doing business in a particular area) is primarily considered to be all that takes ecological, as well as causing excessive erosion or landslides activate, and accidental pollution of basic environmental media (soil, water and air), the destruction of indigenous flora and fauna. Also, the thresholds of development

are considered and all the investments that exceed the threshold of profitability, that is no excuse to increase profits from a new way of doing business."[10]

Important foundation of rural development is association of citizens enabling them to exchange ideas and merge capital (considering that women have little to no resources for the production and distribution of products). At the same time it is necessary to focus on **encouraging the development of rural agro-tourism (**hunting tourism, health tourism), which involves developing production of souvenirs, traditional foods, lifestyles as well as planning cultural events.

"The modern world imposes technical-technologically demand to rural areas of Serbia, to network all actors of agro-tourism development, from the smallest, at the local level, to those of the highest, on level of national territory. All the travel society, regional tourism organizations, associations, cooperatives, non-governmental agencies, church and others, must constitute a component network of tourism development interests in all parts of the rural areas of Serbia. It follows, that the challenges of rural areas in tourism activity are also associated activities, primarily through the cluster, tourism stakeholders and partner organizations, in order to ensure the smooth business circulation of labor, capital and other elements of successful tourism development in Serbia. Finally, in order to rural areas of Serbia (Vrbas municipality) could realize all the distinctive challenges of tourism development, must comply with accepted systems of standardization and product quality in rural tourism, as well as at each position, with ratified certificates, to allow unimpeded growth and development of tourism as an integral part of the economic system."[11]

Next step is obtaining resources for economic empowerment and product placement. This needs to be done at the provincial and state level as well as European Union level (business plan is necessary for applying for European Union funds). Office of Local Economic Development as a mediator enables filling out questionnaires and follow-up projects, offering information on the municipal website.

Consistent actions and media pressure should be used in order to influence formation of public opinion, which is directly reflected in the political response and will. The intention of this kind of pressure is to speed up acceptance of new strategies at local and national level in terms of reducing taxes, taxes for environmental protection, fee reduction if the farms, cooperatives, associations or companies are registered under women.

In conclusion, although Vrbas reflects the patriarchal mentality, there is great potential for solving the issues of gender equality, rural development of

[10] Mrkša, M., Gajić, T. (2013): *Sustainable agriculture as a basis for sustainable environmental development of rural municipality Vrbas*, Economics of Agriculture, BSAAE, Belgrade, IAE, Belgrade, AES, Bucharest, Vol. 60, No. 1/2013, p. 159.

[11] Milenković, S., Utvić, S. (2013): *The challenges of rural areas in Serbia promising tourist activities*, Economics of Agriculture, BSAAE, Belgrade, IAE, Belgrade, AES, Bucharest, Vol. 60, No. 1/2013, p. 75.

municipality and employment. The most of the conditions of the action plan are largely in the process of resolving.

In cooperation with the National Employment Agency - Department Vrbas (and kindness of MSc Goran Kaluđerović, Head of service) data were collected on trends in unemployment in the Vrbas municipality.

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RODNA RAVNOPRAVNOST I ZAPOŠLJAVANJE NA PRIMERU OPŠTINE VRBAS

Olgica Bošković[12], Slavica Otović[13]

Izvod

Tranzicione promene u Srbiji dovele su do izraženog problema nezaposlenosti, posebno žena u ruralnim područjima. Trend uvećanja nezaposlenosti uslovio je pojavu ekstremnih ekonomskih razlika kod stanovništva, tačnije - veliki broj porodica je doveden na rub egzistencije. Svakodnevne tržišne promene uslovljavaju proaktivno delovanje i elastičnost u formulisanju kako operativnih, tako i strateških planova u poslovanju. Polazna osnova je isrpna statistička analiza uz niz dodatnih, nestatističkih informacija koji navode na rešenje problema - počev od lokalnog nivoa.U tumačenju rezultata i kreiranju smernica neophodna je pomoć stručnih službi, savetodavnih tela i komisija. Potencijal razvoja opštine Vrbas i umanjenje posledica svetske ekonomske krize nalazi se u plodnom černozemu, organizovanoj poljoprivrednoj delatnosti, agroturizmu i ruralnom razvoju.

Ključne reči: *tranzicione promene, zapošljavanje, rodna ravnopravnost, ruralni razvoj, agroturizam.*

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LABOUR MARKETS FOR RURAL POPULATION: COMMUTING AND MIGRATION ABROAD[1]

***Paweł Chmieliński*[2]**

Abstract

In the absence of a satisfactory level of jobs offered in rural areas, achieving of the supply-demand balance in the labour market can supported by labour migration, both internal and external. Paper discusses the labour market for rural population in terms of commuting and working abroad. Study showed that that the average labour market for the rural inhabitants is local and consists of cities located close to the place of residence. They generate demand for labour force and allow rural development through the transfer of knowledge and capital. Moreover, in 88.2% of surveyed villages the migrations abroad were reported. Next to Germany, UK and Ireland, an important direction of migration of the rural population were the Netherlands and Belgium, Italy and the Scandinavian countries.

Key words: *labour market, rural areas, migration, Poland*

JEL: *J61, J29, R23*

Introduction

The overall socio-economic conditions in agriculture and the necessary structural changes in the sector aimed at improving its competitiveness and ensuring a satisfactory income from agricultural activities are related to a reduction in the number of employees in individual farms. Reduction of employment in the area of agricultural production will be largely conditioned by the processes of concentration of means of production, especially land and situation on local labour markets offering off-farm employment (Sikorska, 2001a; Karwat-Woźniak, 2005).

Transformations of the rural population did not only concern changes in their number and demographic structure, but they were also expressed in changes in the relationship between the rural households related to the farms (farming) and not having an agricultural property (non-farming). The field research of IAFE-NRI shows, that along with the economic development progresses the process of urbanisation of rural areas, which is

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expressed e.g. in a reduction of the size of the agricultural population to the advantage of the non-farming population.

The study of IAFE-NRI shows that over the last six years the percentage of farming families among all of the residents of the villages in question, have decreased. In the study sample of the population surveyed in 2011, the number of rural non-farming families, that do not have any land or use parcels smaller than 1 ha of UAA, represented less than 40% of all respondents and was about 3 percentage points (pp) lower than six years ago. Thus, compared to the period before the political transformation the share of farming families in the study population of rural families decreased for almost 20 pp. According to Central Statistical Office (CSO 2012) in 2002-2010 almost 34% of farms up to 2 ha disappeared, however, the number of farms from the group of 2-10 ha decreased by almost 18%. On the other hand, the increase in the number of the largest farms testifies to the process of professionalization in agriculture, where farms of this type operate on market basis, as in the case of small and medium-sized enterprises. The main determinant of the process was abandonment of agricultural activities by rural population and its activation in other sectors of the economy or the ceasing production activities due to reaching the retirement age.

According to the Labour Force Survey (CSO 2012), at the end of 2012, there were 6.8 million economically active people among the rural population aged 15 and over, what constitutes more than 56% of the rural population in this age group which have an established status in the labour market. This group consisted of over 6.1 million of the employed and almost 0,7 million of the unemployed.

Rural areas development can be implemented on strengthening the residential function (settlement) and links with cities (i.e. agglomerations). As regards the labour market, the development of the centre generates demand for labour force of its periphery and allows their development through the transfer of knowledge and capital. The range of impact of the centre on this area is associated only with the quality of transport infrastructure and the degree of matching qualifications of labour force from rural areas with the needs of the local labour market.

Greater demand for labour force would enable to stop the process of depopulation related to constant migration (for work), improvement of the standard of living of the residents, and, at the same time, the business activity on rural areas would positively affect the overall economic development of rural areas.

The paper analyses the characteristics of local labour market for rural population in terms of its spatial extent. Research findings presented in the paper are based on various source data available, the main empirical material being the findings from field survey conducted in 2011 by the Institute of Agricultural and Food Economics – National Research Institute. The survey covered 76 villages across Poland (inhabited by more nearly 9 thousand rural families). The qualitative analysis was carried out on the basis of village questionnaire (observation chart) called The Village Characteristics. Both the chart and interviews with village representatives concerned mostly the local social and technical infrastructure, the specificity of the village, its location and institutional relationships, determining the main

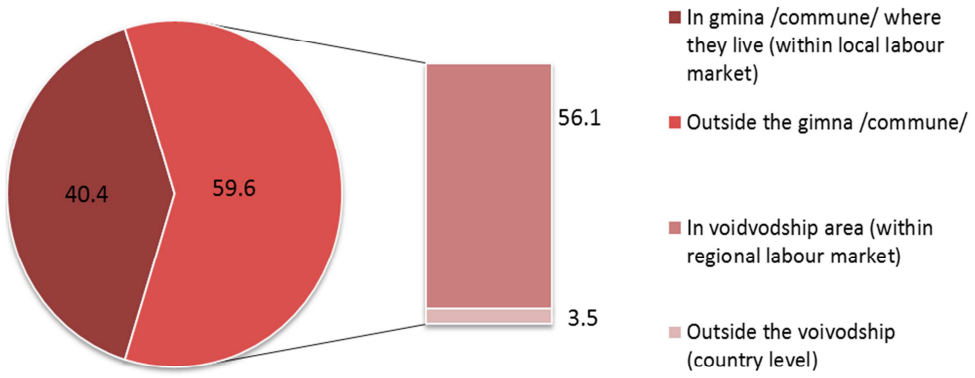
places (cities/villages) and entities, which, in the vicinity of a village are decisive for its development and situation of rural inhabitants on local labour markets.

Commuting of rural population

In 2010, the average number of working rural residents amounted, according to the Labour Force Survey (CSO 2011), to 6.0 million, where 3.4 million people commuted to work, i.e. 56.8%. With the support of aid resources, the scale of investment in road infrastructure increased, which contributed to the improvement of the roads in recent years and reduction in travel time. This is reflected in the increased number of commuters in the total number of employees. Between 2008 and 2010, the number of rural residents commuting to work has increased by 131 thousand. In 2010, among all employed people in the country who have worked outside their place of residence, 33.5% were rural residents and this level was ca. 2 pp higher than in 2008 (CSO 2012).

Data from IAFE-NRI field studies of 2011 concerning commuting to work were very close to those recorded in the frame of LFS. According to the information received, among the inhabitants of the villages surveyed, 59.8% of those working outside the agriculture accounted for people who travel to work daily.

Figure 1. Working (off-farm) population according to place of work [%]

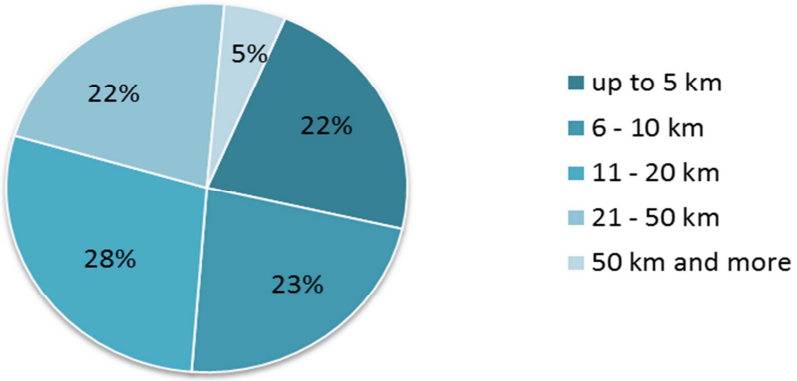


Source: IAFE-NRI study 2011.

Information about the spatial size of the local labour markets calculated as the average distance to the workplace are supported by the LFS data for 2010, according to which among people working outside their place of residence, 96.5% worked in establishments situated in the voivodship in which they lived (Figure 1). In the geographical structure of the labour market the essential importance for creating the demand for labour belongs to companies of the gmina, in which commuters are living. There worked 56.1% of all employed persons who work outside the village, in which they lived in.

On the way to work the village residents travelled an average distance of 18 km, while 44.8% of the commuters were working less than 10 km from the place of residence. Another 30.2% moved to a place of earning at a distance from 11 to 50 km (Figure 2). Within the surveyed group there were people who made a distance of 185 kilometres every day and were employed outside the country. This was possible thanks to the location of the villages in the vicinity of highway and thus significant reduction of average travel times on such a large distance. A total of 5% of the general number of commuting people travelled on a daily basis a distance greater than 50 km.

Figure 2. Commuting of rural inhabitants in Poland in 2010



Source: (CSO 2011).

In the spatial structure of the labour market, the companies from the urban are played an essential role in creating the demand for work. In such location worked 40.4% of all persons working outside the village, which has been their place of residence. Data from survey IAFE-NRI indicates that 44.8% of commuters were overcoming a distance not greater than 10 km.

An important criterion for the possibility of extending the local labour market is the travel time to the establishment that offers jobs. As already mentioned, the positive changes in the infrastructure have the effect of increasing the opportunities to seek employment in companies getting further in relation to the place of residence.

Commuting time

There is commonly observed change in the perception of physical distance, which is estimated not only by the criterion of distance travelled, but by the time of travelling. This factor has for long been an important criterion for the choice of place of residence in the cities and in the rural areas determines the advancement of urbanization.

Travel time to agglomeration decides on the deployment of urban migration from cities and settling in suburban towns. Thus, the travel time to work and to public use utilities are increasingly gaining importance as an important factor in the development of rural areas compensating or even substituting the lack of developed infrastructure within it.

According to the study of IAFE-NRI majority of working at a distance from the place of leaving were living within the distance that could be done at the average in 18 minutes. More comprehensive information in this regard is provided by the median value by which we know that half of all companies that created jobs for the residents of surveyed villages were located within the distance that could be overcame in less than 12 minutes.

Travel time to work was a bit different, depending on the spatial position of the village. Relatively the lowest average value of the ratio of commuting time was observed regions of the south-east and south-west, which means better organized labour, with relatively more enterprises creating the demand for labour, located in the vicinity of the residence place. This does not change the fact that a well-developed transport infrastructure allows to search for work at a greater distance from the place of residence without significantly affecting travel time and inconvenience.

Transport modality

The issue complementary to characteristics of local labour markets available for the residents are methods of commuting to work. Research from the 2011 documents that the residents working outside the village usually travelled to work by car.

Problems of state-owned public transport system in transition period had reduced the network and the number of connections, which primarily affected rural inhabitants. Among the reasons for the collapse of the passenger transport, the expansion of individual automotive equipment can be pointed, changes in communication needs of society, the lack of restructuring state-owned enterprises and binding to the deteriorating standard of service (Zdanowski 2012). In localities where the demand for these services was large enough, the loss in the number of public transport connections was completed by private companies. In all rural localities changes in the public transport sector also stimulated the process of buying cars among the village residents. As a result of that, the own car has become the dominant means of communication of people working outside the inhabited village.

Commuting to work by public transport accounted for a solution for 16.3% of commuters in the surveyed villages. In some cases, a means of transport was also a bicycle.

Changes in the public transport market were well documented by the study of IAFE-NRI, according to which 93% of the surveyed villages had bus transportation, and 17% more rail. The dominant carrier between car companies was state-owned, while in 60% of them there was also a private carrier operating in the village. In the villages having the diversified structure of available bus operators the residents reported significantly higher satisfaction with the services, than the places served only by the state-owned carrier. This was due to higher average number of connections, which amounted to 15 courses a day, compared to 9 courses in the other cases.

In the villages located on the rail trail number of train courses was on average 8 per day. The research shows that in all the villages which had both bus lines and rail transportation, the needs of residents were fully satisfied. It should be noted that the residents of the villages did give a better rating to rail services then to the car transport. This is evidenced by the fact that in the villages with the railway station, more than half of commuters chose that mean of

communication. In rural areas with only the bus transport the shares of individual means of transport was similar to that generally analysed group.

Popularity of individual means of transport among commuters varied depending on spatial structure. In this case, the percentage of car commuters in the total number of people working outside the village was 82.2%[3]. Although the share of commuters using the car was clearly dominant in the villages of all the analysed regions, one can point to slight differences in this respect. Residents of south-eastern region relatively more often than the others, used the means of transport. Such persons constituted in the described group up to 30%. This was due to the relatively higher than in general, share of villages situated on the rail way. However, in the case of villages of that area, also the rate of residents using the bus communication was the highest. In these villages relatively frequently alongside the national carrier operated private transport companies, which offer the tailored transport to the communication needs of residents.

In the absence of a satisfactory network of public transport connections, the dominance of commuting to work by car was even more pronounced, as exemplified by the high share of car use in the south-west and north regions.

The presented material allows distinguishing the factors determining the extent of local labour markets. The surveys shows that their territorial sphere for the most part is limited to the community and neighbouring communities, and for the vast number of people working away from home closes within the region.

The main factor in the choice of place of earning is time of arrival. In view of the insufficient number of work in the place of residence, the size of the labour market accessible to the rural population is primarily depending on conditions of road infrastructure and the quality of public transport companies. Surveys have shown that an important role in this respect comply with private companies. They offer transport services appropriate to the needs of residents as evidenced by the opinion of the respondents, and declared satisfaction with communication connections with urban areas, rural areas and other rural localities.

It must therefore be concluded that the improvement in the labour market is determined by the scale of support for networks of transport and measures to improve economic infrastructure, especially roads.

Migration abroad

Labour migration, both internal and external, is an important element of balancing supply and demand in the labour market. By reducing the unemployment rate and the financial transfers made by migrants to their places of origin, this form of earning have potentially significant impact on local development (Kotowska, Matysiak, 2007).

The motives of migration are explained according to their nature and object of study, i.e. whether the analysed migrations are internal (domestic) or external (international). It is also

[3] For the needs of full description of ways of using different means of transport when moving to work in the analysis the bicycle commuters were omitted in this point.

important to examine the migration processes from the point of view of the local community, or in national terms. The factors influencing migration decisions can be divided into those operating in the country of origin (push factors) and form the country of destination (pull factors). They have the impact on the household level, the local community level as well as the region or country level (Jaźwińska, 2000). In addition to exogenous conditions, the significant impact has also individual characteristics of a person who decides to migrate and cultural factors, i.e. so-called traditions or culture of migration (WUP 2010).

In the group covered by the survey done by IAFE-NRI in 2011, in 88.2% villages the migrations abroad were reported. In calculation to one surveyed village in years 2005-2011 an average of 14 people migrated or was regularly travelling abroad to work. Among them there were both seasonal workers and those for whom it was the main place of employment.

The studies have shown that there are regions where the intensity of migrations is particularly high. In all the surveyed villages located in the south-west and north macro regions there were families whose members worked abroad. In the first case, the tradition to work abroad is very old, which translated into foreign contacts helping another people to migrate. Labour migration was also a response to the weakness of the local labour markets that were not able to meet the demand for labour created by the rural community.

The mechanism of migration of rural families' members to a large extent explains the new economic theory of migration (Janicki, 2007). According to that theory, the migration decisions are made not individually, but within a group of people dependent on one another. The basic unit of decision-making, according to this theory, is a household whose members consider the economic situation and the possibilities of diversifying sources of income while minimizing economic risk. One of the effects of such considerations is the decision on migration of one or more family members. The decision on diversification of sources of income (including migration) is influenced by the economic and social situation of the family comparing to other households in local terms (Wrzochalska 2005). Migration can thus be the result of a desire to raise the social status of the family in the community. Therefore, within the communities with the diversified socio-economic structure the large share of people with higher propensity to migrate is more characteristic than it is in homogeneous communities taking into account social status and living conditions. In regions is with high emigration tradition, this phenomenon is common in rural areas.

In addition to the severity of migration, the rural regions were also varied in terms of duration of economic migration. Within the analysed group, people working abroad were spending there an average of 15 months. In the villages, where trips to work abroad were common, their duration was relatively shorter. The example here can be the villages of macro-regions of the north and the south-east, where the migrating residents spent away from home an average of 8 and 13 months.

The research material has also provided a lot of information on the most frequently chosen directions of migration. After accession to European Union, Poland has become a signatory of two Schengen agreements: Schengen Agreement of 14 June 1985, and the Convention implementing the Schengen Agreement of 19 June 1990, which entered into force on 26

March 1995. Countries that have adopted such measures have abolished internal border controls while setting the external border zone.

Key implications for Polish citizens on the border crossing were connected with the abolition of formalities relating to the entries on the territory of another Member State and withdrawal of the border controls. Document necessary to travel within the EU remained only an identity document. Documents necessary to cross the external borders remained passport and some third countries may require a visa (Rezowicz, 2010). However, the greatest impact on the labour market, including the rural population, had the opening of labour markets to citizens of Poland. The survey done by IAFE-NRI in 2011 reflected the increase in the number of countries to which the workers from the rural areas were leaving.

For the inhabitants of the villages the most popular migration destination was Germany, which for years was placed in the forefront of most popular places for seasonal earning. Taking into account the fact that one of the first countries that opened their labour markets for workers from the new EU Member States was the United Kingdom and Ireland, percentage of migrating to these countries placed them at the forefront of the statistics. Next to Germany, UK and Ireland, an important direction of migration of the rural population were the Netherlands and Belgium, Italy and the Scandinavian countries.

The directions of migration of the rural population are in line with the general preferences of the Polish population in this area. European statistics point to Germany, Great Britain, Ireland and Italy as a place commonly chosen by job seekers (Straser, 2006). The differences in the intensity of trips to different countries between the general data and information from the surveyed villages explain the relatively high proportion of people taking up employment abroad in agriculture. That can explain the relatively high popularity of the Netherlands between the work emigrants in the survey done by IAFE-NRI, than it is reported in other sources of international migration in the country.

It was also observed that in many cases large groups of emigrants was going in one same direction. This illustrates the example of Belgium, where the majority of emigrants was originating from several villages located within one macro region. This phenomenon can be explained on the basis of the theory of migration networks. It explains the migration process as a series of events based on the interaction between people and information flow (Meyers 2000). According to that theory, the emigrants are in the local environment in the country of origin (in this case in the surveyed villages) the source of information about the opportunities, conditions and any problems related to employment in the labour market. By submitting this information they reduce the potential risk of failure and thus affect the decision on whether to migrate for another person. As a result of this process, the direction of migration of many people from the same village is similarly situated. In this case, an important factor influencing the phenomenon of migration is the quality of interpersonal relationships and the level of trust, which determine the level of mental and material support from the migrant / re-emigrants for people planning to emigrate. These migrations have a local nature, both in the country of origin (increase in the number of resident migrating) as well as in the country of origin (increase the number of people from the same country in a given location). The described phenomena are confirmed in other studies of migration at the

local level (Osipowicz, 2002) and explain the heavy traffic in the villages of macro-regional migration with a long tradition of migration.

Conclusions

Both the situation of people in the labour market and socio-economic development of rural areas depend on many factors, which can be divided in terms of the internal spatial criterion, including own resources and their use, and external, based on the structure of the rural economy in conjunction with other systems, mostly urban. Supporting endogenous potential of the rural areas assumes creation of jobs in non-agricultural activities and the use of unique natural, historical and cultural resources of rural areas to create a competitive rural economy. It is a response to the declining importance of the agricultural sector as a source of income of the rural population. The structural deficit in non-agricultural jobs in rural areas means that the surplus of labour force burdens farms and limits the processes of concentration in agriculture (Sikorska, 2001b). Therefore, the development of rural areas should be initiated using mainly their endogenous potential, which often requires identifying the measures that promote investment activity of companies in the area. It enables creating agricultural economy, which to a lesser extent, is dependent on the urban areas economy development.

The spatial extent of the labour market for the rural residents is determined by the distance which the rural residents have to cover to get to work. In the situation when there is still an insufficient number of jobs in a place of residence, the size of the local labour market will be determined by the state of the road infrastructure and the quality of public transport services. Travelling time to the work place and to public buildings is gaining importance as an important factor in development of the rural areas compensating the shortage in the development of the rural infrastructure.

Both the survey and mass statistics data confirm that the vast majority of rural residents working outside their place of residence had not more than 20 km to work (and less than 30 minutes of traveling). This suggests that the average labour market for the rural residents form a company located in the gmina, or voivodship in which a village is located.

The exception will be localities situated near the administrative borders of a village, for which the local labour market goes beyond the established territorial borders. The same conditions govern the border traffic, which after the Polish accession to the Schengen Agreement provides freedom of movement and employment in the territory of the most European Union. The study of IAFE-NRI indicates that circular traffic of the population of villages located near the borders with European Union countries, mainly Germany and United Kingdom are very common. Residents of the towns may be active in foreign labour markets without changing their place of residence.

Spatial size of the labour market is shaped by the possibilities of transport and the time spent on daily commuting, absorption capacity of markets created by urban centres and economic development in the immediate area of residence. Since increasing the level of education of the rural population, and well-educated population exhibits a greater tendency to circular migrations, the share of employees in the cities will be growing. On the other hand,

multifunctional development of rural areas, accompanied by an improvement in infrastructure reflecting the demand for basic needs, prevents decisions about permanent migration to urban areas. This mainly concerns the rural areas located peripherally to urban areas. The rural areas located in close proximity to the urban areas are experiencing increased settlement migration. The balance between supporting residency functions in rural areas, and the quality of transport infrastructure, enabling transport to work, is a prerequisite to maintain the economic viability of rural areas and to prevent its marginalisation.

Another issue, important in terms of balancing supply and demand in the labour market, is labour migration, both internal and external. Study showed that the work abroad and financial transfers made by migrants to their places of origin are common and important element of live hood strategies of rural households. However, it should be noted that labour migration of the rural population have both positive and negative effects. While the high level of unemployment, temporary emigration have good influence on easing labour market imbalances, and involves the transfer of cash from working abroad, allowing to balance household budgets. Transfer of funds also affects the stimulation of the local economy, through both household consumption and potential investments for the creation of additional jobs. Often the success of a new business activity can not only provide the initial capital, but also the idea and the experience gained abroad (Chmielinski, 2013).

Among the costs of migration the demographic structure disorder should be indicated by the outflow of young people. Among the threats in this respect the reduction of the quality of human capital should be also mentioned, especially for cases of emigration of professionals and educated people.

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Review Article

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FRANCHISING AS A BUSINESS CONCEPT - CHANCE FOR MANY IN SERBIA

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Summary

The development of the franchise network as an alternative solution in comparison with the traditional opening of the organizational units allows our own expansion through enganging less money and risk-sharing with local entrepreneurs who are already well familiar with its own market and its potential and had it completely checked before investing their own funds in buying a franchise.

Company „Soko Stark" in Belgrade is one of the largest companies in the confectionery industry, in the region and for more than 90 years has been a leader in the domestic market. Given the fact that the concept of franchising as a business in the last decade, has been rapidly growing in all world markets, management of Soko Stark reviewed all the advantages and disadvantages of such business concept and took all necessary actions and measures as soon as possible to come out with a new strategy of development, before creating its retail network through the system of franchising. The company with its operating has its business concept proved successful so far. In the near future it plans to expand and increase the franchise system. The company has proven that it is more successful than the competition, in the the confectionery market, where until recently dominated almost no one. Therefore, we expect that we could easily extend our franchise system both within our borders and in other markets as well as on the territory of the former republics.

Key words: *Franchising, enterprise development, entrepreneurship, food production.*

JEL: *M21, L26, P17*

Introduction

Franchising is defined as a system of cooperation and mutual business relationship between independent i.e. separate companies affiliated by the franchise agreement based on which one of them (the franchisor-franchise holder) allows to the second (user-franchise franchisee) the right to use mark (trademark or trademark), also providing support and

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services to facilitate regular exploitation, and for that certain costs in cash-equivalent franchise (Mašić, 2001).

In layman's terms, a franchise is a business association in which the successful business concept, which successfully operates in a field, clones/transplantes from its home field to another, on a "turnkey". It consists of a business package that includes: a brand or brands, the composition or the know-how, business experience, ongoing technical support, marketing and PR, training manual, goods or services. For entering the entrepreneurship, buying a franchise is a safer way to start a business your own, because it is in the interest of both parties, the franchisor and the recipient fails to work and grow. By buying a franchise the most important operation is the sale of goods and services that are immediately recognized on the market, since they already operate successfully somewhere. It is important when buying a franchise to get the necessary training and support that will contribute to their success (Alpeza, Erceg, 2006).

We will attempt in the case of the company “Soko Stark" to show the advantages of development through the franchising. In this text we will describe the business case of the company “Soko Stark". Performed was the situational analysis, which identified the problems and gave the concrete solutions to these problems.

Short history of the company “Soko Stark”[3]

Roots: In the year 1922, Daniel S. Pesmazu (Daniel S. Pechmajoue) a French officer, and a returnee from the Salonika Front founded a company for import and export "Louit" SA - in Zemun that was dealing with the importation of chocolate products. In mid-twenties Daniel Pesmazu made the first chocolate: "Stork", which was the forerunner of today's chocolate for eating and cooking "Menaz". In the year 1931, the Jewish Joint Stock Company founded the bakery "Soko". President of the Society was Holender whose name unfortunately is not recorded, nor the name of the director Fisher, also a Jew. The head master was from the famous Viennese bakery "Anker brot peckerei". Then the first steam bakery then employed a hundred workers.

Integration: In the year 1966. , the integration of the bakery "Soko" and chocolate and candy factory "Nada Stark" created biscuit factory of chocolate and candy "Soko Nada Stark", forerunner of today's modern factory. In the year 1975 a **New Factory** as it was called then was opened, at its present location in Kumodraska Street in Vozdovac where an equipment and machinery from Zemun was moved to.

Stark's present position - BU (Business Unit) sweet and salty snacks. Today with the majority ownership of "Grand Kafa", a leading manufacturer and distributor of coffee in the region and with the strategic alliance with the "Droga Kolinska", "Soko Stark" has become a part of the Atlantic Group in the year 2011 from Croatia. This synergy has enabled the creation of new markets distribution of stronger, better positioning, and placement - which is the basis for further development of "Stark" and of the Group as a whole. In the Atlantic Group "Soko Stark" operates as the bussines unit for a sweet and salty. The essence of the new organization is a division of the production programs and

[3] www.stark.rs

the sales area and the local administration and includes accelerated development of key brands. Then the "Soko Stark" operates as the separate business unit inseparable organizational units are: marketing, research and development of operational activities and retail. And in order to further improve the brands we shall together with our employees do the most importanta role and also be the inspiration for the game along with the ambitious regional players.

Product Range BU sweet and salty: Products BU consists of sweet and salty with chocolate and flour confectionery. Today a complex portfolio includes 30 brands and 120 SKJ, in the following product lines: chocolate; chocolate bars and desserts; dragee; cookies and tea biscuits; waffle; snacks (salty flips and rolls - sticks).

The focus is on brands that have for decades been known in the domestic market, such as: Smoki, Najlepse zelje, Bananica and Prima, whose portfolio expands with new products and flavors, as well as the brands that need to become leaders in their categories such as waffle and waffle program "Zlatna Polja" as an umbrella brand for tea cookies.

Essence of franchising

Franchising as a business concept in the last decade strongly developed to all world markets. The tendency of entrepreneurs is to expand their businesses and thereby create greater revenue, forcing them to think about performance strategies to appear in other markets. Looking at the business practices and practical examples, franchising is certainly one of the alternative options that contribute to the development and success. Principal advantages and disadvantages of the franchise system must be familiar with both sides, which will come in this kind of cooperation (Baillieu, 2001).

Today, worldwide twenty million people operate franchising in the 4,500 different forms of the franchise. In the U.S., 50% of the retail business is performed through franchising model, and every twelfth retail location is a franchise. In Europe during the year 2005, there were 3,700 Franchisor, at 145,000 locations. Annual turnover generated by the system of franchising was 75 billion €, and franchising chains have employed 1.3 million people.

Among the countries in transition, the first place belongs to Hungary, which has 400 franchise chains, out of which 50% were domestic. It is followed by Poland and Slovenia with 120 franchises, out of which 55.7% were domestic. In Croatia, there are 120 donors franchise, out of which 30% were domestic. The Czech Republic has 55 franchises.

The growth of franchise management of more than 10% per year in present in the countries of the former Eastern bloc with Russia, the Baltic countries, the Czech Republic, Poland and Hungary as the leaders. Regarding closest surroundings franchise is one of the ways to alleviate the trend of unemployment in transition countries, which resulted in the opening of a number of franchise chains, both foreign and domestic. In Hungary and the Czech Republic, domestic franchise is represented by about 50%, while in Croatia, about 30%. For Macedonia, Republic of Srpska, Montenegro and Bosnia and Herzegovina, there is no data. Compared to neighboring countries, Serbia is at the very bottom of the list.

Franchisor is a company that standardized and tested its business concept, is repeatable and portable and cedes it to other companies together with the brand or brands with all the details that make that specific business concept. This transfer of knowledge, experience, visual identity and brand entails payment by the franchisee (Begtić, 2003).

Franchisee is an independent legal person, but by entering the chain accepts the system of work imposed by the franchisor. Given the fact that the franchise contract is a deal between the two sides, it can contain single case different obligations of the franchisee (Begtić, 2003).

However, franchising is not applicable to all forms of entrepreneurship. Entrepreneurs must assess what their potential is and how best to use it. It is suitable especially for those entrepreneurs who want to use the knowledge and those possess the reputation on the market in terms of brand and trademarks and can take advantage of it to expand both nationally and internationally. Franchising is a business entity, as opposed to other business systems, where it offers its business partners the knowledge, business concept and other essential facts (Brown, 1996).

The International Franchise Association predicts that the franchise will soon dominate the retail market. Franchising is strongly developed in services rather than in manufacturing, and today has taken a plurality in economic sectors. This shows that franchising is often the best path for success since failure rate is very low, because larger organizations protect franchising giving them guidance and defining standards (Mendelsohn, 1995).

Franchising is very popular worldwide since franchisee obtains professional help and advice from well-known brand more easily sells goods or services, and the franchisor invests in development and marketing, instead in a new business unit. The contract will be concluded on the long term basis, and the franchisee must pay down payment application form and a monthly fee. Therefore, one should be thoroughly informed on the Franchisor and the contract to be signed (UNIDROIT, 1998).

In Serbia, the supporting infrastructure for the development of franchise business is still poorly developed, which is probably one of the reasons why there is only present in Serbia mere 20 domestic franchise chains, in contrast to neighboring Hungary, where it operates 150, or Slovenia, which has about 40 domestic franchise chains. Pioneers in franchising in Serbia are mostly people who were certain period of time abroad and there met with the franchise. Franchising is extremely developed in the countries of the West, for example in the U.S. much as 50% retail sales is conducted through franchise chains. Like all other trends imported from the West, the franchise will soon be some alternative for Serbian entrepreneurs when deciding to start a business venture or further dissemination of the proven business model (Lovrić, 2003).

Today, franchising is present in virtually all countries. Especially in the most developed economies. Franchising system supports contributes to the development of small and medium enterprises and medium business class. It helps companies to resist the demands of the market, which are affected by big strong players. Franchising is a great advantage,

compared to other forms in the process of privatization of utilities and other companies founded by local governments (Draškić, 1983).

Previous studies give us the right to look at the situation and give a solution proposal for further development of the company "Soko Stark". Expansion of the chain "Cokoladera" and discovering new marketing channels will make the company strengthen its competitive position and bring the franchise relationship in business. The main benefit for enterprise-franchisee is to enter in standardized shops with already established business while entering into the retail network of Stark shops. On the other hand, Soko Stark in this way is expanding its retail network and increasing their income without investing in retail space.

In addition to the power brands (brand) of Soko Stark proves the survey conducted by the agency Valicon that was processed for the first time measuring the strength of the brand throughout the region. Research is included in all the countries of the former Yugoslavia - Slovenia, Croatia, Bosnia Herzegovina, Serbia, Montenegro, Macedonia and Kosovo, compromising with the market of 22 million people. Research has shown that ARGETA, SMOKI and COCKTA belong among are the strongest brand consumer products.Top list of the top twenty consumer brands looks like this: 1) Coca Cola; 2) Chocolate Milka; 3) Argeta; 4) Tissues Paloma; 5) Fanta; 6) Nivea – beauty products; 7) Vegeta; 8) Cedevita; 9) Gillete razor blades; 10) **Smoki**; 11) Cockta; 12) Plazma cookies; 13) Pepsi; 14) Toillette paper Paloma; 15) Hard candy Negro; 16) Cookies Domacica; 17) Chewing gums Orbit; 18) Kiki; 19) Dorina; 20) Snickers.

These are the brands that are present throughout the region, including some that are in the local markets extremely strong (such as Barcaffé, Grand Coffee, Bananica, etc.) which are not listed on this common regional list. Top 20 brands also include newer brands, and all are listed on a long presence in all these markets. Power of the brands is calculated based on the visibility and experiences with the brand name and its use.

As can be seen from the list, Smoki takes tenth (10) position, which confirms the strength of brand of Soko Stark, that takes precedence in the confectionery industry in the former Yugoslavia, which is one of the prerequisites for entry into the franchise relationship.

All of the above enumerated unambiguously acknowledges the need and justification of scientific study of the problems of entrepreneurship through franchising.

Situational analysis

Demografic characteristics

According to the year 2002 census, Serbia has 2,521,000 households. The total population is 7,498,001. The population density is 85 inhabitants per 1 km^2. On average, one household has 2.9 persons. Birth rate in for the year 2010 was for the territory of Central Serbia -2.1, -4.3 for Vojvodina, Kosovo and Metohija 14.8. Serbia holds in total 4.706 settlements, including a total of 244 urban settlements. The largest population holds a high school diploma of 2,255,782, then 1,752,652 with basic education, then no primary education, and higher education with at least 354,610. The proportion of the total population is 43.9%. The

share of urban population in total population is 51.2% until the year 1953 was 22.0%. This only shows the tendency of migrating growing population from rural to urban areas.

Social and cultural factors

Assortment of Soko Stark is the most appealing to the population with the middle earnings or higher and the lower middle class. A quick way of life and a growing number of employed women, and the transition to the European working time, cause the occurrence of "new housewife". Working women have less time to devote to cooking and housework, because instead of making desserts are increasingly buying confectionery products, as their replacement. Also, young mothers are increasingly using ready baby food for their babies. Return to tradition and a growing respect for religious practices (fasting, Eid) has a positive effect on producers of confectionery products.

Market environment

The disintegration of Yugoslavia, UN sanctions, the NATO bombing and wars in the region have led to gross domestic product (GDP) in the late 1990s did half of that in the year 1989. In early 2001, after the political changes which occured in the year 2000, began the implementation of transition reforms which initiated the process of economic recovery and reintegration of the country into the international community. Serbia became a member of all major international organizations (WTO apart) and significantly improved its relations with the EU. However, Serbia is still the only country in the region where a Stabilisation and Association Agreement (at least from the EU) is not in force. In the previous period, particularly in the period 2004-2008 there was a high economic growth. There has been dynamic growth in GDP, which in the last four years amounted to about 6% per year. At the same time, an improvement of current economic trends, which is reflected primarily in easing inflation, industrial production, exports, increase in wages and living standards, and increasing foreign exchange reserves, foreign direct investment, and so on. However, the Serbian economy faces major challenges. Firstly, the high external deficit (which was particularly high in 2008.), a high level of unemployment (about 20%) and high public spending (significant part because untransformed enormous public sector).

Analysis of basic indicators in trade

Statistical situation of some of the main macroeconomic indicators is as follows:

Table 1. Trends in turnover in retail trade, 2000 up to 2010

Year	Milions of RSD	Milions of EUR*
2000	104.338,60	2,092.40
2001	227.293,60	3,802.20
2002	309.454,62	5,101.60
2003	367.740,60	5,646.20
2004	474.960,50	6,533.00
2005	698.854,60	8,419.90
2006	791.750,20	10,055.80
2007	1.021.342,30	12,776.50
2008	1.231.758,50	15,996.50
2009	1.130.685,40	12,157.19
2010	1.229.199,30	11,706.61

Source: Data taken from RZS, Statistical annual report 2012
* As per average EUR exchange rate for each particular year

The table shows that the trade turnover from year to year increases, which entitles us to claim that retail, is one of the highest growing sectors of the economy.

Table 2. Number of employees in retail in Serbia 2000 up to 2010

Year	Retail employees	Growth rate (%)
2000	153.119	5.3
2001	200.784	31.1
2002	239.304	19.1
2003	223.116	-6.8
2004	283.092	26.9
2005	299.248	5.7
2006	251.829	-15.8
2007	289.009	14.7
2008	288.926	-0.02
2009	301.424	4.32
2010	299.080	-0.77

Source: Data taken from RZS, Statistical annual report 2012

Concerning the number of employees in the retail trade, there is a trend of steady growth in employment, which is to say that this branch of the economy is of great importance in the recruitment of employees and which reduces unemployment as one of the most pressing problems of any economy and even ours.

Table 3. Structure of turnover in retail trade in Serbia 2000 up to 2010

Product group / Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Total - retail	100	100	100	100	100	100	100	100	100	100
Food and alcoholic beverages	26.1	26.7	27.4	28.9	26.8	27	25.5	26.1	26.3	27
Tobacco	2.9	3.0	3.1	3.3	2.7	2.5	2.5	2.7	3.4	4.6
Clothing and footwear	3.0	4.0	4.2	4.4	4.3	4.6	7.3	7.2	7.1	7.1
Furniture, household appliances	4.5	4.8	4.9	4.7	7.1	6.3	5.6	5.4	5.4	5.2
Pharmaceuticals	4.2	4.8	4.3	3.7	6.1	8	10.8	10.1	12.1	13.1
Vehicles	4.5	4.9	4.8	3.9	8.2	7.6	8.6	8.4	8.1	8.2
Fuel for vehicles	20.5	20.3	24.2	30.2	21.4	20.7	14.6	14.5	14.1	13.9
Other	34.3	31.5	27.1	20.9	23.5	23.3	25.2	25.6	23.5	20.9

Source: Authors remark

The table shows that chance for developing retails of food products, and therefore the confectionery industry as one of the leading branches of the food industries.

Table 4. Shop number in Serbia from 2000 up to 2010

Year	Shops number	Growth rate
2000	82.987	7.7
2001	86.291	4
2002	95.996	11.2
2003	95.800	- 0.2
2004	103.657	8.2
2005	109.232	5.4
2006	101.910	-6.7
2007	96.660	-5.1
2008	100.233	3.7
2009	96.188	-4
2010	90.690	-5.7

Source: Data taken from RZS, Statistical annual report 2012

Regarding the number of shops, the situation is as follows: until the year 2005 the number of shops has increased steadily and over the upcoming years this trend has been stopped. The negative trend in the number of shops is primarily because of the present trend on the market where all the big players, i.e. multinational companies have destroyed small. The only chance for small business under the umbrella of large is by entering into a franchise relationship, where the business risk is minimized.

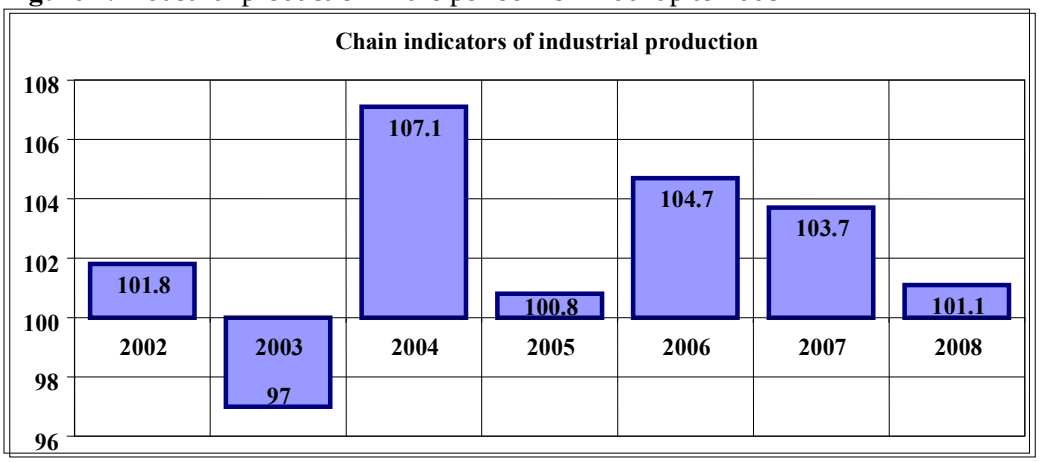
By analyzing some of the key indicators of underlying economic trends in the period of 2000 up to 2010, and trying to avoid black and white marks, it can be concluded as follows:

In the previous period, the dynamic growth of the gross domestic product (GDP), which is usually, as in other Central European countries determined by the so-called growth of tertiary sector (services), then the increase of foreign exchange, as well as strong domestic demand and investment growth. Dynamic economic growth has contributed significantly

to the high inflow of foreign capital on various grounds (loans, "greenfield" investment, portfolio investment, donations, etc.) for a total of as much as 62 billion USD. Unfortunately, the current level of GDP is still about 20% lower than in the year 1990, and GDP per capita (about 4.200 EUR) is among the lowest in the region of.

The growth of "classical" sectors of the economy - industry and agriculture was much slower than the growth of GDP (Savić et al., 2012). In doing so, it reveals significant fluctuations from year to year, but no visible progress of Agricultural production has remained primarily dependent on climatic factors. Industrial production is still lower (about 20%) in relation to the year 1990. , so it must be concluded that, globally reviewed, the processes of transition and privatization have contributed to a radical increase in the volume of production of these key parts of the real sectors of the Serbian economy.

Figure 1. Industrial production in the period from 2001up to 2008

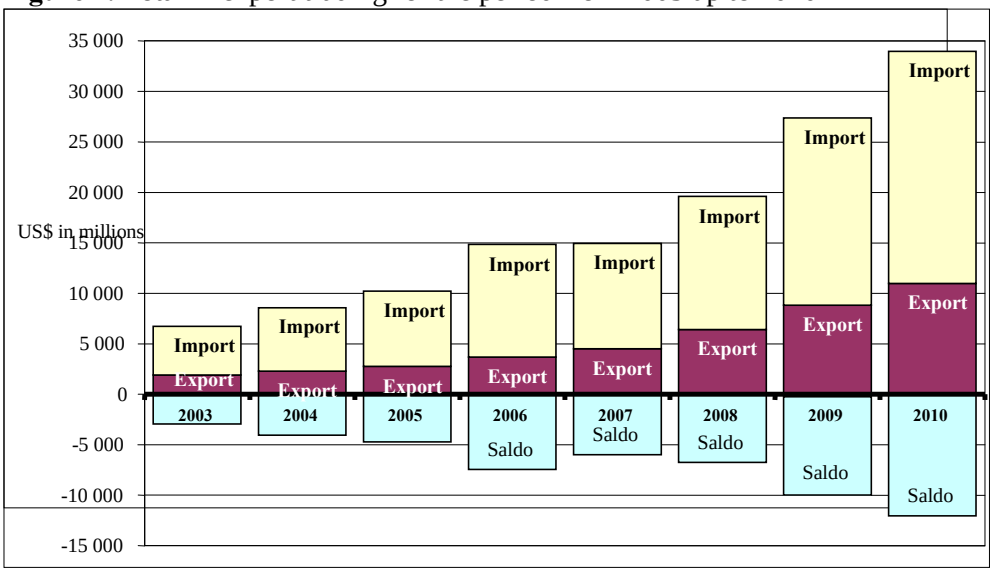


Source: Authors remark

However, in some areas, the processes of privatization and restructorning influenced the increase of competitiveness (and profitability), which had a positive impact on the growth of production and export trends (especially in the production of base metals).

During the previous period significantly has been increased volume of the foreign trade, and it has in the year 2008 amounted up to 33972,0 million USD (or many times more than in the year 2001. respectively). The growth of foreign trade is determined by strong growth in exports, but, unfortunately, primarily by the enormous increase in imports, resulting in a constant, and with each year growing trade deficit in the last two years, especially in the year 2008, (when it was even 12.026,3 million USD), and was a long-term economic and durable source with very high public spending, as a major potential source of macroeconomic instability.

Figure 2. Total in export trading for the period from 2003 up to 2010



Source: Authors remark

In the year 2010 compared to the year 2003, Serbia's GDP increased by over 2.5 times, but it had an identical effect on employment growth. On the contrary, developments in the labor market in Serbia during the transition process, primarily due to the process of privatization and restructuring, are characterized by the reduction in the number of employees and increase in the number of unemployed. Total number of employees was reduced from about 2.1 million in the year 2003 to about 1.99 million people in the year 2010. Serbia is left behind by the employment rate for about 50% since the population of working age is significantly lacking behind the European Union (EU 27 average employment rate is 64.5%).

The total number of unemployed in early year 2010 amounted to 917 thousand people. Although in comparison to the year 2006, the number of unemployed slightly reduced (mainly due to changes in recording mode), Serbia has a much higher unemployment rate than the population in the European Union (about 7.5% in the year 2008. respectively). Serbia's unemployment rate is 24.1%. The unemployment rate is very high, and the problem of employment and recruitment is one of the major economic and social problems of our country, with the economic crisis to further escalate (in the year 2011, the expected decline in the employment is minimum 1%).

In the last months of the year 2010 the economic developments, including economic policies, were strongly influenced by the global financial crisis. The crisis, which is already more than two years on, manifested in various world financial markets, culminating in the first half of October 2008, when there was a crash on the leading stock exchanges and almost complete cessation of interbank short-term lending. Financial markets distrust prevailed, and in many cases panic. Although there are different grades, it seems that the initial causes of the crisis lie in the collapse of the U.S. housing market and

the inability of creditors to collect their accounts receivable. The growth of the crisis has contributed to a fully liberalized financial market such as the U.S., where the so-called trade derivatives (by the banks, mutual funds, and mortgage insurance companies and similar financial institutions) were not adequately controlled (Stefanović et al., 2010).

The negative effects of the crisis in the U.S. soon spread to other financial markets in the world economy and leading countries. This led to the bankruptcy of many prominent financial institutions and banks and/or their recapitalization by the state sector. The consequences of the global financial crisis were quickly spilled over into the real sector, and were observed primarily through reduced current effective demand for a large number of products and services. Consequently, as a result of negative developments in the financial and the real sector of the economy, virtually all the leading economies of the world, entered the large-scale recession, which has not been recorded since the thirties of the last century.

In late half of the year 2008 first effects of the global financial crisis "spilled over" to the Economics and Finance of Serbia, and were reflected primarily in export-oriented production and changes in the financial markets. In the first quarter of the year 2009 negative effects of the global financial crisis became much more visible when he saw a dramatic decline in overall economic activity in Serbia.

Industrial production declined by about 17%, insolvency has reached enormous proportions (over 50 thousand businesses were "blocked"), exports (and imports) declined by about 35%, and there has been some slowdown in bank lending activities and activities BSE (with further decline in the value of shares and withdrawal of foreign investors). Reduced budget revenue, led to the (the first in the year 2009.) budget review and proceeding with the action on insurance with objector great new loans from the IMF. All this indicates that the economy of Serbia was on the verge of great, with many assessments, long-lasting recession.

Over the past eight years, Serbia has failed to overcome the negative effects of economic trends that it had in the 1990-ies of the last century and increase its GDP above the level achieved in the year 1989. For now, we can only hope that the effects of the global financial crisis will "take" only few more 2 or 3 years in the economic growth of our country.

Table 5. Foreign competition in brands and range of products

Swisslion	Kras	Zvecevo	Milka	Ferrero
Bevita	*	*	*	*
Petit Beurre	Petit Beurre	*	*	*
Linea Batons,	Ronda Valisa	M-joy,	Lila Pause	Pingui
Čoko banana	Bananko	*	*	*
Čoko biscuit	*	*	*	*
Softi i Kondita	*	*	*	*
Chocolate Domacica	Domacica	*	*	*
Chocolate	Daria	Dorina Samo ti, Volim te Milka chocolate		Kinder choc.
Black chocolate	Dorina	*	*	*

Source: Author remarks

Demand exists, with larger uptrend. However, during the year, demand varies. The biggest sales are during the winter months, and from autumn to spring, and then demand tends to fall during the summer months. This is due to the offer on the market of fruit and ice cream, which replaces the consumption of confectionery products. Also, high temperatures do not favor any sale of these products, because they require furnishing outlets adequate refrigeration. Therefore, the Soko Stark has oriented to the large commercial systems that are properly equipped.

Confectionery production in Serbia&Montenegro engaged about 14 companies. According to research by the presence manufacturer of biscuits and cakes, we have to bare in mind the consumer market of the MP panel of Yugoslavia and Serbia, and in the first place is Bambi with 76.3%, followed by Soko Nada Stark with 57.3% and 39.1% with Banini. A favorite brand of cookies and cakes is Plasma biscuit-Bambi with 23.1%, followed by Jaffa Crvenka with 8.8%, and the third-Domaćica Banini, Swisslion with 5.5% in both studies did not appear in the top five manufacturers. Most domestic manufacturers are already well positioned in the minds of consumers, with a long tradition of manufacturing and have built the brand.

One of the biggest competitor brands and competitors product shape is Bambi. Bambi from Pozarevac is a company dealing in trade and production that originated in the year 1967. According to the achieved total income for the year 2002 it has been situated on the third place, behind Swisslion and Soko Nada Stark, and with generated profit per second to a Swisslion. The most popular product of Bambi is Bambi Plasma biscuits, which because of its rich composition are intended primarily for the children. Pionir Subotica, exists for 85 years. This is another company with a long tradition. The most popular product is Galeb chocolate.

"Jaffa Crvenka" - Crvenka is biscuit factory whose main activity is the manufacture of cakes and other products of the pastry. Founded in the year 1976, at the total generated profit in the year 2002 gets them in third place.

Potential competition also consists of foreign manufacturers, which are slowly entering our market. These are the producers from the European Union and the countries of former Yugoslavia (Croatia) - Milka, Nestle, Kinder, Ferrero, Kras, Zvecevo and other. Unfortunately, in our country people are still of the opinion that foreign companies produce better products, so these competitors pose a serious threat. Latent competitions are local manufacturers of cakes. These are mostly housewives in rural and suburban areas, which allow the ordering of different kinds of candy. Women in urban areas are generally employed and do not have enough time to devote themselves to cooking and often opt for this option. A special type of competition makes it illegal imports of confectionery products. These products are coming into the country by the illegal channels, while we can not know the actual quantity imported, as well as to predict the exact moment of their imports. Generic competitors are all producers who produce food, mostly junk food, snacks and ice cream. These include domestic and foreign manufacturers such as Chipsy, Famoso, PIK Cacak, Florida Bell, Pringles, Chipita,

Frikom, Delta Ice Cream and Ledo. In addition, generic competition also consists of pastry, bakery, pizza, McDonald's, Pizza Hut and the similar.

The mission and vision of further development of the company

Mission of Soko Stark is a rich assortment of high-quality standard, using healthy, natural raw materials, which provide internal standards, meeting the desires and tastes of consumers of confectionery products. Vision of Soko Stark is to become a multinational company and maintain its leading position in the European confectionery market, and developing a positive self-image in its products, successfully positioned as trademarks.

Long-term goals:

a) Preserve and further strengthen its leadership position in the confectionery industry in the Serbian market and develop a positive image of themselves and their products as successfully positioned Trademarks
b) Creating consumer awareness about products and creating a recognizable image of a strong brand consisting of
c) Marketing Department in collaboration with external marketing agencies should constantly monitor and research customer satisfaction with Stark products and always give priority to the analysis of customer satisfaction when compared to similar competitive products.

Short-term goals:

a) The entry in the franchise relationship should result in increased market share and sales by 10% compared to the current situation and
b) The entry in the franchise relationship of Soko Stark Retails, a subsidiary company Soko Stark, should reach a profit of 500 million dinars over the next year

In order to realize the goals it is necessary to fulfill the following tasks: continuous customer care, constant innovation, following the world trends and pulse of market, improve service and better coverage of markets, opening new chocolatiers, then through active promotion, designing and setting it hand, creating a good information system; achieving good cooperation with business partners, continuing professional development of employees.

Market Segmentation

With its product portfolio Soko Stark covers the entire market (all age groups of the population) of Serbia&Montenegro. As the largest potential consumers mentioned are the young generation, athletes, and all persons exposed to the efforts. Most customers fall into the category of variables supporters, who prefer certain products, but not the usual shopping habits. Therefore, they can be easily motivated by the promotional activities for the purchase and quality and low price to encourage the arrangements.

Product Strategy

Mix products from the company Soko Stark are composed by two main product lines: sweet and salty snacks. Each line makes more sublines. The entire products mix of Soko

Stark is completely consistent, which means connectivity in the final consumption of the product, production process, and in particular sales channels and promotions.

The products are of high quality for the production from the raw material supplied to the European market - the Commodity Exchange in the Netherlands, Switzerland and others. In addition, the company in its laboratory performs a re-examination of all raw materials and thus guarantees high quality. Production technology is also at the highest level.

During the formation of a brand name performed are the individual strategies of brand names. Packages are subject to frequent changes, and problem recognition. Complete packaging is environmentally friendly and can be recycled.

Pricing Strategies

Soko Stark is implementing a strategy of lower prices than the competition. This strategy allows the company to take significant market share and achieving leadership position in the area of Serbia and Montenegro. Despite the lower prices, the company achieved a high level of income (fourth place in the framework of all the companies in the S & M, and first place in the confectionery industry). Setting lower prices resulted from several main reasons: the most modern production technology and achieved high labor productivity, procurement of raw materials annually; own fleet; loans through its own retail stores; existence of its own mills and silos.

Distribution Strategy

Intermediate network: the company has its own retail network, which includes 15 stores i.e. "chocolatiers". They can be found throughout Belgrade. All retail stores have the same interior, and sell only products of Soko Stark, in bulk and in containers. Prices for these objects are lower than in other systems sales.

The intermediary sales channels: Conventional channels consisting of independent retailers who provide services to the sale of our products and vertical marketing channels that consist of contractual vertical marketing system (franchising system). Soko Stark grant a license to sell products, and retailers meet the contractual terms of the sale. There are contracts with large commercial systems, hypermarkets (Mercator, Rodic and Super Vero) and supermarket chains (C Market, Maxi discount, Pekabeta and Gorica)

The sale is made through major wholesalers such as Rodic, Nana Nis, Dis Commerce Krnjevo, Cacak IGT and others. It is conducted with its own funds. Soko Stark has a lot of trucks, lorries and vans. If necessary, the transport is done outpatient and serviced each by the particular from the large retail chains.

Promotional Strategies

The current strategy of promotion was undeveloped, i.e. little of the budget was spent and very little attention has been paid to any kind of promotional activities. Consequently there has been a major problem in building brand awareness of the consumers. In the past, funds have been earmarked for promotion through sponsorship and charity work. They were making a promotional display at the Agricultural Fair in Novi Sad and at the Food Fair in Belgrade. Little was spent on economic propaganda and continuous PR activity.

The SWOT analysis

Strengths:

- High participation in meeting the market demand of the confectionery industry of Serbia and Montenegro
- Implementation of Standards and Stark Technology
- A stable financial base
- Their own chain of 15 stores under the name "chocolatier"
- The policy of eligible prices for a quality product
- A rich assortment
- Its own fleet

Weaknesses:

- A wide range of products on offer and a lot of similarity with competing products
- Insufficient built of its own trademark
- Weak consumer information about the company and its product portfolio
- Frequent changes in packaging
- Lack of permanent promotional activities
- Undeveloped public relations
- Lack of market tradition

Chances:

- Inactivity of major competitors in the design, programming and implementation of tailored and comprehensive promotional activities
- Good cooperation with retailers
- Unresolved ownership status of competitors
- Development of the awareness of the consumers about the products and their quality
- Back to tradition and respect of religious traditions
- "Fast Life"

Threats:

- The presence of competing products from the former Yugoslavian republics, which are still well positioned in the market of Serbia and Montenegro
- Existence of disloyal behavior of competitors
- Difficult and uncertain competitive matches with brands already affirmed
- Increasing imports
- Domestic consumers prefer foreign package regardless of the quality of products
- The reaction of competitors to the promotional efforts

Conclusion

Previous studies give us the insight to look at the situation and give a proposal for the further development of enterprises, of Soko Stark. We see that today large companies become bigger and the small get even smaller or just disappear. One way to "stay in the game" is through the collaboration with the companies that have already built well-known brand and image. With logistic and marketing support is much easier to operate in business. Multinational companies in the confectionery industry used a various number of strategies to expand business, including a franchise system. Franchising has a huge impact on the confectionery industry worldwide, and is one of the ways to connect a large number of confectionery industries in large and distinctive confectionery chain.

The trend of globalization of world trade is linked to the existence of companies, including franchising. Franchising is very useful for "pouring" financial and intellectual capital across the borders of countries. In the last decade we have witnessed a great shift of political and technological barriers. Today, franchising is present in virtually all countries. Particularly in the most developed economies. Franchising system supports and contributes to the development of small and medium enterprises and medium business class. It helps companies to resist the demands of the market, which are affected by big and strong participant-players. Franchising has a great advantage, over other forms, the process of privatization of utilities and other companies founded by local governments.

Extending the chain "chocolatier" and the discovery of new marketing channels will make the company strengthen its competitive position and bring franchise relationship in business. Promotion and PR activities represent the discontinuous greatest weaknesses of companies. For this reason, the company needs to work on developing promotional activities to create consumer awareness of the product-mix and stirred interest in the products and buy them. The company needs to work on expanding to new market segments and find new marketing channels have described as the best.

The main benefit for the company franchisee is entering the job in well-established standardized trade, i.e. entry into the retail network Stark stores. On the other hand, Soko Stark in this way is expanding its retail network without investments in the retail space.

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FRANŠIZING KAO POSLOVNI KONCEPT - ŠANSA ZA MNOGE U SRBIJI

***Alija Jašarević*[4]*, Mile Ličina*[5]**

Rezime

Razvoj franšizne mreže kao alternativno rešenje u odnosu na klasično otvaranje vlastitih jedinica omogućuje širenje kroz angažovanje manje novca i podelu rizika s lokalnim preduzetnikom koji dobro poznaje svoje tržište i detaljno proverava njegov potencijal pre nego što i vlastita sredstva uloži u kupovinu franšize.

Kompanija „ Soko Štark“ iz Beograda jedna je od najvećih konditorskih industrija u regionu i više od 90 godina lider na domaćem tržištu. Imajući u vidu činjenicu da se Franšizing kao koncept poslovanja u zadnjoj deceniji snažno razvija na sva svetska tržišta, menadžment Soko Štark-a razmatra prednosti i nedostatke ovakvog poslovnog koncepta i preduzima sve neophodne aktivnosti i mere kako bi što pre izašlo sa novom strategijom razvoja, pre svega razvoja svoje maloprodajne mreže putem franšize. Preduzeće je svojim načinom poslovanja pokazalo uspešan koncept dosadašnjeg nastupa. U bliskoj budućnosti planira da proširi i uveća franšizni sistem. Preduzeće je dokazalo, da je uspešnije u odnosu na konkurenciju koju ima na tržištu konditorske industrije, gde je do skora vladala praznina. Zato očekujemo, da bi smo mogli lako proširiti svoj franšizni sistem kako unutar svojih granica, tako i na ostalim tržištima teritorije bivših republika.

Ključne reči: *franšizing, razvoj preduzeća, preduzetništvo, proizvodnja hrane.*

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POSSIBLE ROUTES OF APPROACHING OF SERBIA (AGRO INDUSTRIAL COMPLEX) TO THE EU AND THE WTO [1]

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Summary

The priority aim of the Republic of Serbia in the framework of "CEFTA", in addition to striving to become a member of the WTO should be the aspiration to full membership in the European Union. Accession to the WTO countries is, in effect, to give up a degree of national sovereignty. Benefits of harmonizing the legal framework for the country which are CEFTA signatories mainly depend on their business - export structure and the degree of liberalization of regulations in key sectors compatible with WTO provisions. It envisions the transformation of customs duties and non-tariff protection measures through the so-called tariffication - calculating the average ratio of selective domestic and international (import) prices of agricultural products during the reference period. To survive in conditions of excessive global supply of agricultural products moderate zone, which is based on the high direct and indirect care, Serbia should conduct an active policy of subsidizing domestic agricultural production, exports and imports to protect domestic production in accordance with the terms and conditions of the world market, WTO and the European Union in the framework of CEFTA.

Key words: *CEFTA, WTO, Serbia, Trade, EU Competitiveness.*

JEL: *Q18*

Introduction

Countries that are members of the WTO have advantages in trade using the clause of the most favoured nation. Former Yugoslavia, as a signatory of GATT in 1966, until the

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suspension of the operation of the organization in July 1993, used the most favoured nation clause and the principle of non-discrimination in trade with members of the GATT. Even after the lifting of sanctions Serbia faced with unfavourable international position which contributes to the inability to use the most favoured nation clause in a multilateral basis. However, most of the countries with which the former Yugoslavia traded before the sanctions approved this clause to Serbia. In order to include the Republic of Serbia into the European Union and the WTO and the international trade flows, it is necessary to align the valid regulations with the international and binder carry out its implementation. The European Union requires detailed regulations to ensure the integrated system of food production, as well as continuous monitoring and control of the presence of certain infectious diseases and quarantine of animals and plants. In order to export food and agricultural products to the European Union, the Republic of Serbia must fully comply with existing EU legislation, and because of that it is necessary full harmonization with veterinary, phytosanitary and sanitary standards of EU.

Data sources and methodology

Primary data sources are the materials of the Ministry of Agriculture, Chamber of Commerce and other relevant sources. Comparison was done by groups according to the Standard International Trade Classification (SITC). The research is based on the so-called desk research which is a processing of available data and their comparison. Content analysis of the adopted documents is also used as if the results of previous studies of this issue.

Researching results

To protect industrial and agricultural production many countries resort to a full set of various restrictions on the import of products. One of the mechanisms of protection of the domestic market of agricultural and food products are customs. Customs protection mechanism in the future as required by the free trade agreement should lose the significance "reference period". Customs and overall protection afforded by the tariffication, which contains the rates of customs and non-customs duties on imports of agricultural products is subject for reduction and consolidation. Although the Republic of Serbia has significant resources for agricultural production, and most of the territory is rural in character, farm structure is unfavourable for rapid economic development (Zarić et al., 2011). In developed countries, reduction of the obtained average tariffs should be at 36% to be realized in the so-called initial period of six years, while in developing countries, reduction of the obtained average tariffs should be at 24% within ten years. Minimum reduction for a single product is 15% for developed countries, 10% for developing countries, while least developed countries are exempted from this obligation. Special protection mechanism, called special safeguard clause, can be applied during the execution of the obligations under the Agreement or the initial period. Especially sensitive to the situation, the agreement contains a clause about "special treatment", which is used for special vulnerable situation. This clause provides that the non-trade reasons keep the existing restrictions on imports of a particular product. This would mean that it is exempted from liability tarification until the end of the implementation of the Agreement, but only in precisely defined conditions. State trading

companies continue to play important role on the global market. It is a serious problem since the sector of agricultural production exchange and character of activity in the given market of the state trading companies essentially differ on many parameters from other sectors of the global market (Erokhin, Ivolga, 2011). The new Law on Customs Tariff is aligned with the Harmonized System Commodity Description and Coding goods WCO HS in 2002 and 2005 EU Combined Tariff. The average rate for agricultural products is 16,95% and they are divided into 2,381 tariff positions (i.e. 23.28% of the total number of positions). However with the full entry into force of the ECJ and the European Union this kind of import protection will not be possible. Unlike export subsidies on industrial products which are prohibited, export subsidies for agricultural products are not prohibited, but there is an obligation to decrease them during the initial period of implementation of the Agreement. The subject of fulfilment of obligations on the reduction of export subsidies in agriculture are direct subsidies granted by the government or their agencies. This includes neutral payments to companies, industry, agricultural producers, cooperatives, etc. The most important criterion is not the heritage that makes their distribution, but the origin of the funds. The subject of the fulfilment of obligations to reduce export subsidies includes:

- Export sales or marketing of non-commercial stocks of agricultural products available for export by the public authorities at prices that are lower than the comparable price charged for a similar product to buyers in the market;
- Subsidizing transport costs for exports of agricultural products in international deliveries, as well as processing costs, except for export promotion and advisory services;
- Lower internal transport tariffs for exports of raw agricultural products as determined by public authorities;
- Subsidies granted to agricultural products depending on their installation in export product.

Subsidies defined by the agreement are subject to non-proliferation including subsidized products. Obligations in the field of credit policy for the export of agricultural products are reduced to member participation in the development and implementation of events that will regulate export credits, guarantees, and credit insurance. Owing to the fact that the export subsidies are subject to reduction in terms of quantity and quality, of particular interest is the increase in the volume of subsidized exports of agro - food products. All countries participating in the implementation of the agreement should have a clear defined program limits in terms of the quantitative indicators, as well as in the area of market access, export competition and internal support to producers. Initial period of implementation of the agreement has certain gradation in determining the results and impact. The process of harmonization of agricultural policies in many countries is already present, given the existence of the WTO rules and disciplines relevant to agriculture. Within the European Union was opened discussion on the future of the common agricultural policy. WTO membership is composed of several stages. It is well-known that WTO represents an international institution under which regulate relations between countries in trade field are based in order to achieve as faster and more qualitative development as it can be (Petrovic et al., 2011). The first phase of the development of a Memorandum of trade policy proves institutional complementarity of domestic legislation with the requirements of the EU and

the WTO and the appropriate degree of harmonization of trade regimes and policies. Then it should be formed a task force that opens negotiations with Serbia on concessions that would require interested countries to trade and they are usually our most important trading partners. Serbia has to adapt its agricultural policy conditions to the Agreement on Agriculture, and the conditions of the Stabilisation and Association Agreement. Future legislative and legal solutions, as well as newly defined concept of long-term sustainable agriculture (rural development of the country) and proclaimed goals of agricultural policy, determine the precise responsibilities of the respective authorities in the implementation of the policy, which should be adapted to the provisions of the Agreement. Full implementation of the CEFTA is an exhaustive test of application of the Agreement on Stabilization and Association. The EU implements the full implementation of the reform process of agricultural policy CAP (Common Agricultural Policy). It has been introduced a new system of separate payments and support to farmers who have migrated to the payment from the past. By Multilateral Agreement on Agriculture in the WTO are strengthened reform processes, defined new responsibilities which include several commodity sectors and payments that can be directly related to the production of certain crops (system of "separated" payments). The principles are defined in 2004 and they have been operationally implemented since 2005. As such, the reform principles consist of four sections:

- Preparation for the continuation of multilateral negotiations on agriculture,
- Chapter relating to consumer protection and environmental policy standards as an integral part of agricultural policy,
- Introduction of financial discipline and control of budgetary costs with funds used to support the market in goods of agricultural origin,
- Defining the budget and policies of protectionism in agriculture that may arise enlargement of the European Union.

Set objectives in the reform of the common agricultural policy, basically define the transition from commodity support to direct payments support to producers. The system of "separated" pays should make producers more market-oriented. Member States and producers retain the right regarding direct support, which amounts to 25% of base acreage of basic crops, 50% of the value of the basic premium in production of sheep and goat meat, 40-100% of the premium in the production of beef and 40% of additional help production of durum wheat. Legislation to liberalize tariffs is not subject of the reform process, which means that the EU market remains protected by high tariffs. Export subsidies are still available for the surplus goods within limits of WTO rules, although some reduction in the intervention price may contribute to lower unit export subsidies. This case is very indicative in terms of strengthening the euro, which the EU exports of goods leads to an uncompetitive position whereas the paid export subsidies are driven to the limits allowed by the WTO obligations. The basis of trade cooperation between Serbia and the European Union is composed of a set of regional and multilateral agreements. First of all, referring to the Stability Pact for South Eastern Europe and the Memorandum of trade liberalization and trade facilitation, all CEFTA countries, candidates for EU membership are the members of the WTO or aspire to become members of the WTO. A set of agreement of each candidate country, especially at the bilateral level with the EU represents a framework for the gradual

pace of development of mutual free trade by the membership to. Instrument Agreement, known in professional circles as the "double zero" represents referential status and the amount of export quotas in trade between the European Union and candidate countries. It defines the conditions to improve foreign trade in the period before the signing of the Stabilization and Association. The agreement represents an asymmetric form of cooperation, based on the mode of import duty to protect - the stand still clause. Before signing the Stabilization and Association, the Republic of Serbia has had preferential status for about 90 % of commodity tariff positions for agricultural products. Exporters of fruits and vegetables had full of the preferential status. "Double Profit" is the second phase of market liberalization and it is created by the signing of the Stabilization and Association. The agreement on the removal of customs duties also foresees the requirements of the duty free quota, which on a reciprocal basis applies to all contracted products, including a group of sensitive products (agricultural and food), which is the end of the first phase of liberalization. General Provisions of section of free trade in agricultural products regulate issues such as: standby tariffs after signing the agreement, the prohibition of tax discrimination, customs unions, free trade, the general safeguard clause, a state monopoly, conditions under which they may impose import or export restrictions. It is very important for the agriculture of the Republic of Serbia to correctly determine the dynamics of the gradual reduction of tariffs on agricultural products from the EU because this is one of the most sensitive areas. Agreement on Stabilization and Association provides significant opportunities for exporters in the candidate countries, especially for a group of sensitive products: wheat, beef and dairy products, which in practice have the greatest import protection. Beginning of the reform process of harmonization of their agricultural policies with the agricultural policy of the European Union has to be synchronized. Serbia has not yet adopted a strategic concept of sustainable agriculture, nor has it defined and operationalized its rural development strategy, and without it the country in fact goes into the reform process. The candidate countries are obliged of gradual - phase construction process of market mechanisms, by introduction of legal and administrative framework for the future functioning of the community market (*Common Market Organization*). It is necessary to define, adapt and build market of basic agricultural products such as milk and dairy products, wheat, beef, pork, mutton and goat meat, sugar, cooking oil, fresh fruits and vegetables and others. Inclusion of intervention mechanisms, the system of direct budgetary support to producers (production and non-specific support), or support to producers based on seeding area and realized returns and delivered quantities of certain products leads to an increase in arable land. The principles of the reform system must include measures to improve the quality, standardization and development of merchandise identification system (ISO - 9000, HACCP, GLOBALGAP). Veterinary and phytosanitary control and food control should include measures with a broad scope of activities in breeding, production and processing of livestock, meat and meat products; fish and fish products, as well as crops. Control aims have to ensure consumer protection, public health, animal and plant health, making unique regulations that will regulate the traffic.

Measures to be taken for the sake of increasing exports of agricultural products from the Republic of Serbia

From past experience, the European Union makes efforts to come to a significant reduction in the initial proposal of the candidate relating to sensitive product groups. This is especially true of milk quotas for sugar and premium for heifers. During negotiations with the EU the essential positions are essential reference volumes, as well as requests for direct payments and production rates of the reference period. Arguments in the EU ' s approach focussed on production potential in the market conditions, in contrast to the period when the candidate states characterized the effect of distorting effects of centrally - planned economy , which has continued in the first years of transition. Candidate countries of CEFTA contractors or membership in the European Union are considered to be due to this attitude of the EU, their production potential are not evaluated seriously and to minimize their future competitive position (Vlahović et al., 2009). The most serious issue of negotiations for membership is the level of direct payments that farmers can get as a new member of the EU, in accordance with the current agricultural policy of the European Union. Reform of the agricultural policy of the European Union introduced direct payments as partial compensation to producers for the reduction of guaranteed prices. This type of payment is only partially separated from the process of making production decisions, while manufacturers just need to choose a particular production to be eligible for payment (Bogavac, Ivanovic, 2004). There are two types of grants or payments within the EU:

- For crops (cereals and oilseeds) producers in the EU are subsidized per hectare of sown area of crops, depending on the volume of actual production plus so-called reference yields. Reference yields are defined separately for each region based on the achieved average yields of the region in a given base year;
- For cattle raising - complex cascading payments.

The premium for heifers is paid annually per head. The premium paid for the bulls once in a life time and for cattle twice in their lifetime. For animals slaughtered premium is paid in a slaughterhouse. All the above premiums limited by region and herd size on the basis of actual average in the reference period. Premium for heifers and bulls are also subject to the so-called maximizing livestock units (number of animals per unit of hectares). The intention is these forms of payment are separated from the process of making production decisions, but in practice they are related to production decisions. The manufacturer can not exercise the right to pay more arable surface than the one dealt with in the reference period. However, the processing of smaller area as compared to its reference surface is entitled only to the payment of current arable land. Barrier during negotiations and realization of the full payment from the producers is the limitation of the newly enlarged EU budget. The problem was solved by a phase-like interference of new members for a period of 10 years. The EU would in this model successively increase payments to producers of new members. At the national level to enable the government to increase its budget for direct payments to 30%, which will in the aggregate, if the budget of the new Member States to facilitate, provide manufacturers with an equal part manufacturers in the European Union. Governments of the new Member States from the European Union are enabled receipt, to provide additional funding of 30%, of which 20 % must be invested in defined rural

development. Significant discrepancies in the negotiating process built around process management and control of supply in accordance with the agricultural policy of the EU. The EU has introduced quotas for milk and sugar, while direct payments are lowered by the inherited reference quotas of the yield and size of livestock. Negotiators of candidate state demand higher quotas and higher base surface, the reference yield and the main herd. The requirements are based on production capabilities, not on the results of actual production. It may be noted that in the terms of it offer control the EU takes a very rigid position, all the trends that will happen in the future. There have been some compromises for sugar, iso-glucose and milk. Especially with milk the institute of "reserve quotas for milk, was introduced which should be added to each new member to the current approved quota as a countervailing measure of increased demand for milk in retail, which is expected to occur by reducing consumption in kind and the migration of rural population to urban settlements. For the sake of the all above, Serbia in the future must clearly define the directions of the development of their agriculture within CEFTA, the implementation should allow for easy integration into the EU market. By harmonization of agricultural policies, with concessions that domestic agriculture must provide when entering the WTO, agricultural policy makers have significantly stimulate immediate producers to achieve successively sustainable growth in agricultural production as the basic prerequisite of good results in foreign trade.

Conclusion

Sustainable growth of its products in specific market conditions, what is the CEFTA environment, agriculture of the Republic of Serbia can make an important contribution to the stabilization of the channels. It is therefore necessary to define development priorities based on an export strategy. To increase exports in the short term, the CEFTA market, and in the perspective of the EU market and within the organization, they should promote comparative advantages of Serbia. These advantages are healthy food with the use of the GLOBALGAP standard, high-quality agricultural products with geographical indications, especially early fruits (berries) and vegetables, processed fruit continental (juices and jams), meat and meat products, alcoholic beverages (wine and fruit brandy), vegetable fats and oils, sugar and other products. The Serbian export offer should be dominated by organic farming. In particular, it is necessary to define the operational level strategies commodities and commodity groups (SITC classification), to a greater extent used the favourable preferential status that agriculture has on the European Union, with the aim of speeding up exports and to obtain greater production and export quotas. The Republic of Serbia must not disregard the fact that the European Union market in addition to the CEFTA market is one of the most promising for the export of agricultural products from Serbia, and in accordance with this fact should focus all resources (defined strategy of agricultural development) for faster EU membership.

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MOGUĆI PRAVCI PRIBLIŽAVANJA (AGROINDUSTRIJSKOG KOMPLEKSA) SRBIJE PREMA EU I STO

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Rezime

Prioritetni cilj Republike Srbije u okvirima CEFTA sporazuma, pored težnje da postane član STO, trebalo bi da bude i aspiracija ka punopravnom članstvu u Evropskoj Uniji. Pristupanjem u članstvo STO zemlje se, praktično, odriču jednog stepena nacionalnog suvereniteta. Koristi od usaglašavanja pravnih regulativa za zemlje potpisnice CEFTA sporazuma uglavnom zavise od njihove privredno – izvozne strukture i stepena liberalizacije akata u ključnim sektorima kompatibilnim sa odredbama STO. Sporazumom je predviđena obaveza transformacije carina i necarinskih mera zaštite putem tzv. tarifikacije – izračunavanjem prosečnih selektivnih odnosa domaćih i svetskih (uvoznih) cena poljoprivrednih proizvoda u referentnom periodu. Kako bi opstala u uslovima prevelike svetske ponude poljoprivrednih proizvoda umerene zone, koja se zasniva na visokoj direktnoj i indirektnoj zaštiti, Srbija bi trebalo da vodi aktivnu politiku podsticaja domaće poljoprivredne proizvodnje, izvoza i uvozne zaštite domaće proizvodnje u skladu sa uslovima i pravilima svetskog tržišta, STO i Evropske Unije, u okvirima CEFTA sporazuma.

Ključne reči: *CEFTA, STO, Srbija, Trgovina, EU, Konkurentnost.*

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APPLICATION OF ASSET SECURITIZATION IN FINANCING AGRICULTURE IN SERBIA

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Summary

This paper aims to point out the possibilities of applying asset securitization in financing the Serbian agriculture. Government subsidies and banking loans do not provide sufficient funds so new sources of financing are in need. The process of asset securitization will enable the inflow of funds for agricultural loans approval as well as hedging. Agricultural loans can be used as collateral for issuing securities, although warehouse receipt, repurchase agreement and future income can also serve as collateral. Securitization can enable transfer of risk from insurance companies to financial market through CAT bonds and credit default swaps (CDS). The experience of countries having structured financing in agriculture is valuable for first steps in applying asset securitization in Serbia.

***Key words**: financing agriculture, securitization, collateral, insurance.*

JEL: *Q14, G21, G22, G23*

The concept of asset securitization

Asset securitization is a process of issuing securities based on the pool of similar asset serving as collateral. The reasons for applying asset securitization are numerous and the most significant is diversification of financing sources. Off-balance sheet securitization means taking the asset from the balance sheet of the originator and then the issuance of securities. There may be existing asset securitization and future flow securitization. Therefore, the collateral for securitization does not need to be existing asset but the asset that will be generated in the future. In practice there can be synthetic securitization which transfers the risk to investors without removing asset from the balance sheet. Likewise, securitization can be domestic and cross-border securitization.

Securitization is carried out by special purpose vehicle (SPV). SPV purchases loans or other assets of the originator which is the basis for issuing the securities. The originator has the role of servicer in most cases – it collects interests and principal from the borrower

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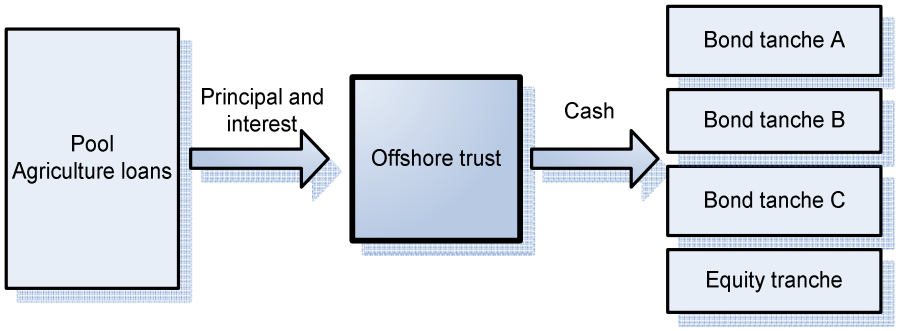
although it has been sold. The collected money is transferred to SPV. As the obligations based on the asset which is collateral are paid, investors who bought securities are paid.

Based on agricultural loans, there may be the issue of collateralized debt obligations (CDO) enabling different redistribution of risk and return. Collateralized debt obligations (CDO) consist of several tranche bonds. Every tranche is supported by the same pool of assets. The tranches (classes) may be: senior, mezzanine[3], subordination and equity class.

Graph 1. Collateralized debt obligation CDO



Tranches are classified according to risk and returns. Senior tranche is purchased by institutional investors for their highest rank (AAA), whereas subordination tranche is purchased by sophisticated investors. Equity tranche is retained by the sponsor (arranger) of the transaction or is purchased by hedge funds. Equity tranche is not ranked because it is the riskiest but also the most profitable. If the pool is in default, equity tranche first bears the loss (first-loss piece, FLP). The sponsors often retain equity tranche in order to attract investors and show that they are ready to have the first loss of securitization they have organised.

Payment to investors is made according to the class of the bond they possess. When the senior tranche is paid, the payment of subordinate classes of bonds commences. The distribution of cash flow is different in tranches and is called the cash flow waterfall. The oldest class has the lowest coupon, while the equity tranche does not have a coupon. This represents a residual cash flow after payment of liabilities to investors. This class is intended for investors who want to earn a lot and are willing to take a risk.

The experience of countries in transition shows that asset securitization can be an important source of financing for agriculture. Agricultural corporations can raise funds through shares issues, but the issue of new shares in Serbia represents a rare event.[4] However, the problem is that Serbia has no law regulating the process of asset securitization. The National Bank of Serbia published - *The draft Law on Securitization*

[3] Transaction may, or may not, have the mezzanine class.

[4] See in Zakić, V., Vasiljević, Z., Zarić, V. (2012): Relevance of Dividend Policy for Food Industry Corporations in Serbia, Economics of Agriculture, IAE, Belgrade, Vol. 59, 4/2012, pg. 809-821.

on 17 January 2008. Hoping that the legal framework will be delivered in the near future, we point out potential applications of financial transactions in Serbia. The draft law on securitization of receivables enables only domestic securitization, which means that the seat of the issuer must be in the Republic of Serbia. Cross-border securitization is not allowed so foreign investors are excluded.

According to the draft law, assets of banks, leasing and insurance companies can be used in the asset securitization. SPV can therefore purchase agricultural loans from banks and issue securitized products. In addition to the banking sector, the insurance companies may take advantage of asset securitization. The issue of securities would transfer the risk to the financial market. The draft Law on Securitization enables leasing companies to use them as a financial mean. The possibility of the receivables sale would bring income to leasing companies that can be further used for leasing operations for buying tractors and other machines.

When the legal framework is completed, financing agriculture in Serbia can be carried out in the following ways:

1. agricultural loans securitization,
2. securitization of future agricultural income,
3. securitization based on other collaterals (Repurchase agreement, Warehouse receipt),
4. securitization of insurance risk.

Agricultural loans securitization

Agricultural loans securitization implies that agricultural loans are collateral for securities issuance. The possibility to sell agricultural loans in the financial market would bring numerous benefits to originators. First, by the sale of agricultural loans the lender receives funds that may use for approval of new loans. Thus, the lender improves liquidity and profitability, and diversifies sources of funding. Then, the sale of agricultural loans means their removal from the originator's balance sheet, and therefore the risk. The buyer of agricultural loans obtains the right to charge interest and principal, but also takes default risk of the borrower.

Agricultural loans securitization is applied in Brazil. Brazil Agrosec Securitizadora Company is a joint-stock company established in 2010 which buys agricultural loans from banks and issues securities (Certificado de recebíveis do agronegocio, Certificates of Agribusiness, CRA). The first issue carried out by Brazil Agrosec Securitizadora Company was valued at $50 million, and the collateral was the livestock. In 2001 Credit Rights Investment Funds (FIDCs) were established in Brazil – funds of open and closed type which are specialized for investment in agricultural instruments.[5]

Agricultural loans securitization in Serbia could be done by the state and/or private sector. It would be desirable if the government by establishing a separate agency carries out the

[5] Herscovici, R., Herszkowicz, J. E., Stacchini, M. F. (2008): Securitisation of agribusiness financial instruments in Brazil: an expanding market, Global Securitisation and Structured Finance 2008, pg. 35.

first securitization of agricultural loans. The involvement of the government would encourage banks, investors, and other stakeholders to be engaged in the process of securitization. The agency would have the role of SPV with the task of purchasing agricultural loans from banks. Given that the Serbian government gives subsidies to agricultural loans, the collateral for the first securitization could be subsidized loans. Therefore, the agency buys subsidized loans from the originator and based on that it issues securities. As farmers pay instalments of the loan, collected funds are forwarded to investors. The agency should guarantee payment of obligations to investors. The guarantee means that securities obtain high rating so the demand is higher. The agency may issue collateralized debt obligation (CDO), but to retain the equity tranche. Therefore, the agency will be the first to bear the loss if the transaction is not successful. In this way, investors are encouraged to buy securitized securities.

Another possibility is that the first securitization of agricultural loans is to be made by the private sector. Private SPV will purchase agricultural loans and issue securities. The private sector may also be the first to carry out securitization of subsidized agricultural loans. Later, as the market gets more developed, SPV could carry out securitization of other agricultural loans.

If the state does not take steps to develop the agricultural loan securitization, it should help the private sector. Investors want assurance that the obligations towards them will be fulfilled. In other words, if users of agricultural loans stop paying obligations to creditors, SPV will not be able to pay investors. The state can give guarantees for issued securities of private SPV. The guarantee can be 100% or partial. The state can guarantee for the securities that have subsidized agricultural loans as collaterals. In this case, issuers of securities having other agricultural loans as collaterals must seek guarantees from the private sector. Insurance companies and banks can guarantee for securitized products. Securities can also obtain guarantees from international institutions (for example, IFC, EBRD, etc.).

Loans to finance agricultural sector in Serbia are *short-term* and *long-term* in nature. Loans can be made for the purchase of seeds, fertilizers, land, livestock, plants, machinery or the construction of buildings. Short-term subsidized loans in Serbia are with maturities of three, six, nine and twelve months.

Short-term and long-term agricultural loans can be used as collaterals in Serbia. The revolving structure is used when securitization is done on the basis of short-term loans and other short-term receivables. The revolving structure allows the issuance of long-term securities on the basis of short-term collateral. The essence of the revolving structure is to maintain the size of the pool, which is a necessity for short-term loans have shorter maturities than the issued securities. The revolving structure consists of a revolving period (lockout period) and amortization period. During the revolving period the amount of principal paid by borrowers is reserved by the SPV and reinvested in additional receivables in order to maintain the size of the pool. During this period payments to investors are based on commissions and interest of the borrower. After the revolving

period, there is the amortization period. New receivables are not purchased during the amortization period, but the collected principal is forwarded to investors.

The first securities issued on the basis of the agricultural loans in Serbia can be issued with maturities from 5 to 10 years. It should be taken into account that investors will not be willing to risk too much. Likewise, it is necessary to issue more classes of bonds. Although structured securities are more complex, they attract different types of investors. The older class is purchased by institutional investors, banks and insurance companies because of the highest rank (AAA), while the last class may be held by the issuer. The reason for retention of the equity tranche by the issuer is that there probably will not be interested investors. Given that the draft Law does not allow cross-border securitization, there are no foreign investors or hedge funds that buy equity tranche. Also, equity tranche should be purchased by the state agency (or retained if it is the issuer), especially if the collateral are subsidized loans.

The guarantees for the securities may be given by the government or the private sector (insurance companies, banks). One of the classes of bonds (senior or mezzanine) should have the guarantees from international organizations (for example, IFC).[6] The application of the guarantees of the international organization will enable bonds to get higher rating. In addition to guarantees and subordinations through the issuance of more classes of bonds, credit enhancement transactions provides overcollateralization, excess spread, cash reserve funds and others.

Securities backed with agricultural loans may be used in repurchase agreement operations in the financial market and it is desirable if they are listed at the Belgrade Stock Exchange.

Securitization of future agricultural income

Securitization allows receivables that will arise in the future to be used as a source of financing. Investors who buy securitized products are interested in the cash flow brought by assets regardless of whether there are assets in the balance sheet or they will arise in the future. Classical future flow securitization means that the originator (bank, company) from a country in transition sells the receivables that will arise in the future to the (offshore) SPV. Customers (buyers of the goods) will transfer money to SPV, because SPV is the new owner of receivables. SPV issues securities denominated in hard currency. The currency of a country in transition is not stable and thus the risk of exchange rate change is avoided. Future flows securitization has allowed originators in the countries in transition to have inflow of funds from sale of future receivables. Future flow securitization is very popular in countries in transition. The collaterals include export receivables from the sale of oil, gas, coffee and agricultural products as well as future receivables on credit cards (VISA, MC), diversified payment rights (DPRs) and others. Future flow securitization has allowed many investment grade borrowers in developing

[6] International organizations can, if Law on securitization of receivables enables, buy bonds.

countries to pierce the sovereign credit ceiling and obtain financing at significantly lower interest rates and for longer duration.[7]

Drokasa[8], the leading Peruvian agricultural conglomerate, uses future flow securitization. Drokasa expanded into horticulture, creating Agrokasa, a company that produces and exports asparagus and grapes. The collateral for the issuance of bonds is the assignment of future receivables which Drokasa reached with the buyers of agricultural products. Drokasa obtains funds while SPV issues bonds. The buyers pay SPV according to the contract.

Agricultural corporations and farmers in Serbia can sell future receivables and thus be financed. Future flows securitization allows the farmer to sell the future receivables from the sale of products to SPV. The sale of future revenues will give the farmer the funds immediately that can be used for financing production. SPV issues securities on the basis of receivables that will arise in the future. The buyers of agricultural products pay SPV for goods, which then pay obligations to investors. SPV, as well as with agricultural loans, may be public or private.

SPV can buy future income from the sale of wheat, soybeans, corn, fruit, vegetables, livestock and the like. SPV sells securities to investors in the planting season and the beginning of the breeding stock. For example, the farmer who raises cattle for the meat industry can sell their future revenues to SPV and be immediately paid. When a customer buys the cattle, this amount of money will be forwarded to SPV. Payment is made to the investors when SPV receives income from the sale of livestock. The point is that the sale of future revenues can enable the farmer to obtain funds to finance production. The fruit grower may also sell its future revenues from harvesting fruit to SPV. The buyers of fruit will pay the SPV, which will then pay investors. The fruit grower received the funds prior to harvest, which allows him to finance production (the purchase of machinery, new plants, chemicals, payment of labour and the like).

Securitization based on other collateral

The collateral for securitization in agriculture may be repurchase agreement and warehouse receipt. Repurchase agreement is an agreement on the sale of securities with a commitment to repurchase them at a specified period and at a fixed price. The seller of securities agrees to repurchase them from the buyer. Repurchase agreement consists of two steps. The first step is the sale of securities, and the next step is its repurchase. Repurchase agreement is a type of loan backed with securities that are the subject of the transaction.

Repurchase agreement is applied in financing agriculture where the subject is trade of goods. The seller sells goods and consents to repurchase it. Securities may be issued on the

[7] Ketkar, S., Ratha, D. (2004-2005): *Recent Advances in Future-Flow Securitization*, The Financier, Vol. 11/12, 2004-2005, pg. 3.

[8] Drokasa, Structured Finance, International Finance Corporation, available at: http://www1.ifc.org/wps/wcm/connect/7f1bfa00487ca8d39dd9bd84d70e82a9/Drokasa.pdf?MOD=AJPERES

basis of repurchase agreements. The owner of the repurchase agreement (bank, SPV) can use them as collateral and issue securitized securities.

In 1996 Prudential Securities enables financing sugar mills in Mexico. The mills sold sugar to the bank with the obligation to repurchase it and in that way they were financed. The bank issued securitized bonds in the amount of 400 million US$.[9] Therefore the repurchase agreement for sugar is collateral for issued securities.

The securitization of repurchase agreement is also done in Colombia in financing livestock, which is an example of Livestock Securitization. Farmers sell livestock to SPV and commit themselves to repurchase the cattle in the future. Based on the agreements of livestock repurchase, SPV issues securitized securities. Although they sold the cattle to SPV, the obligation of farmers is to feed and take care of the cattle. SPV controls whether farmers breed the cattle well. Farmers feed the cattle for 11 months, repurchase them from SPV and sell in the market. National Agriculture and Livestock Exchange (BNA) has the leading role in the securitization and select farmers at a certain level of criteria.[10]

Financing can be done through securitization in which the stored goods are collateral, i.e. *warehouse receipt*. Inventories are collateral according to which SPV can issue securities. Stored goods are a guarantee to investors that the obligations will be performed by them. If the SPV fails to pay interest and principal, buyers of securities have the right to take charge of the collateral - goods that are stored. Securitization based on warehouse receipt enables post-harvest finance for working capital needs.[11] In Venezuela securitization is done on the basis of corn supplies. SPV issued securities on the basis of the warehouse receipt.

Agricultural producers in Serbia could be financed through repurchase agreement and warehouse receipt. In order to carry out the securitization based on the repurchase agreement and warehouse receipt, it is necessary to have the adequate storage (size, quality, location, reliability). In Serbia, public warehouses with a license have been used as proof that they meet the necessary technical requirements for storage of goods since 2009. Public warehouses ensure safety, quality and quantity of stored goods. The public warehouses may store wheat, barley, corn, sunflower, canola, soybean, etc.

Warehouse receipt is a type of securities issued by public warehouses and represents a proof of ownership of the deposited goods. Warehouse receipt proves the ownership of a specified quantity and quality of stored agricultural products. It is issued for a period of one year, or for a period which cannot be longer than the lifetime of the agricultural product.

Agricultural producers can sell the warehouse receipt and can use it as collateral for loans. Loans to agricultural producers based on the warehouse receipt are interesting for the bank as it is not so risky. The bank does not have to put a mortgage on real estate (house

[9] Using Commodity Stocks To Raise Funds Directly On The Capital Market, Trade Finance & Risk Management, Briefing Note N° 3, pg. 2

[10] Innovative Vehicles for Mobilizing Domestic Funds for Agricultural Development (2001), Economic and Social Commission for Asia and the Pacific, 22-23 November, 2001, Bangkok, pg. 7.

[11] Expanding Post-Harvest Finance Through Warehouse Receipts and Related Instruments (2006), The Commodity Risk Management Group, issue 8, March, 2006, World Bank, pg. 1.

in the countryside), but the pledge is the goods in a public warehouse. If the borrower does not pay the loan, the bank sells the goods. EBRD provided a line of credit to local banks for short-term loans with the help of warehouse receipt.

The adoption of the Law on securitization would allow a step further and the use of repurchase agreement and warehouse receipt for financing agriculture. Agricultural producers will be able to sell the repurchase agreement and warehouse receipt to SPV which will carry out securitization. The sale of warehouse receipt to SPV, agricultural producer receives funds immediately and there is no credit debt. With securitization it is not required to have a credit line for financing from EBRD. The possibility that domestic and later cross-border SPVs buy warehouse receipts and issue securities would enable the funds to be collected from the financial markets.

Securitization of insurance risk

Securitization allows the transfer of risk to those participants in the financial market who are willing to bear risk. Insurance securitization led to the emergence of securities that are issued on the basis of the pool of claims from insurance and reinsurance. The risk is repackaged into securities purchased by investors. The most important product of the Insurance securitization is the catastrophe (CAT) bond. The insurer (or reinsurer) reduces portfolio risk by issuing CAT bonds.

The insurer issues CAT bonds which are purchased by investors. If an insured event occurs, the investors bear the loss. The payment of interest and principal to investors will depend on the amount of the loss. If the insured event does not occur, investors will be repaid in full. CAT bonds are used to protect against the risks associated with extreme weather (hurricane, earthquake, etc.). These financial instruments are important for insurance companies because they can reduce risk exposure and transfer it to the capital market.

Agricultural Insurance is a means of protecting agriculture from financial losses. Crop insurance not only stabilizes the farm income but also helps the farmers to initiate production activity after a bad agricultural year.[12] Farmers want to protect themselves from the risk (droughts, floods etc.) that endanger their production (crops, livestock etc.) and buy an insurance policy. They transfer risk to the insurance company. On the other hand, the insurance companies want to protect themselves from the risks that may arise in agriculture. Risk is repacked in CAT bonds and transferred to the financial market. Thus, the risk in agriculture does not have to be kept by the insurer or transferred to the state. It is taken over by investors who are willing to take the risk.

In 2006 Mexico issued CAT bonds to provide protection from earthquakes. The bonds were underwritten by Swiss Re and issued by CAT-Mex Ltd and $160 million was collected for earthquakes of 8.0 or greater on the Richter scale that occur in a defined area

[12] Raju, S. S., Chand, R. (September 2002): *Agricultural Insurance in India Problems and Prospects*, National Centre for Agricultural Economics and Policy Research (Indian Council of Agricultural Research), NCAP Working Paper No. 8, March, 2008 and Factors Affecting Their Use, United States General Accounting Office, pg.1.

in Mexico and $290 million for earthquakes of the same magnitude occurring in either of two other zones. If an earthquake of this strength occurs, investors lose their entire principal, which is transferred to the state.[13] A similar scheme may be used for flood and drought, livestock death and the like.

Soon CAT bonds began to be issued in several tranches. In June 2007 The Goldman Sachs developed the first collateralized catastrophe risk obligations (CRO) or catastrophe CRO. Gamut Reinsurance Ltd (Gamut Re) is a SPV which issued collateralized catastrophe risk obligations (CRO) and the sponsor of the securitization is Nephila Capital.[14] The funds raised by Gamut Re were used to source a diversified portfolio of natural catastrophe risks. Gamut Re issued more tranche bonds with the value of $310 million:

Table 1. Gamut Re securitization

Class	Size(mm)	Moody's/S&P	Pricing
A	60	Aa3/A-	L + 140 bps
B	120	Baa3/BBB-	L + 300 bps
C	60	Ba3/BB-	L + 700 bps
D	25	NR/NR	L + 1.500 bps
E	45	NR/NR	Equity

Source: PR Newswire, available at: www.prnewswire.com/news-releases/gamut-re-notes-placed-as-first-primary-catastrophe-risk-cdo-58069052.html

Catastrophe Collateralized Risk Obligations (CRO) was underwritten by Goldman Sachs and Swiss Re Capital Markets. [15]

Serbia is exposed to losses in agriculture arising from natural disasters, especially droughts, floods and hail. Agro meteorological conditions have a significant impact on the worsening of yield position of the Serbian agricultural sector.[16] The possibility of applying asset securitization would allow insurance companies to transfer risks to the financial market. Therefore, it would raise the interest of the insurer for agriculture. It is essential that farmers understand that there is no development of agriculture without insurance. It is not realistic to expect that losses due to weather calamities are covered from the state budget. Agricultural risk should not be covered by the state, but by the financial markets.

[13] Skees, R. J., Barnett, J. B., Murphy, G. A. (2007): *Creating Insurance Markets for Natural Disaster Risk in Lower Income Countries: The Potential Role for Securitization*, 101st EAAE Seminar - Management of Climate Risks in Agriculture, Berlin, Germany, July 5–6, pg. 5.

[14] Nephila Capital Ltd., the Bermuda-based investment manager specializing in catastrophe reinsurance and weather risk, is the manager of the vehicle. Nephila is the first asset manager to apply its expertise in the natural catastrophe sector using CDO technology on an actively managed basis.

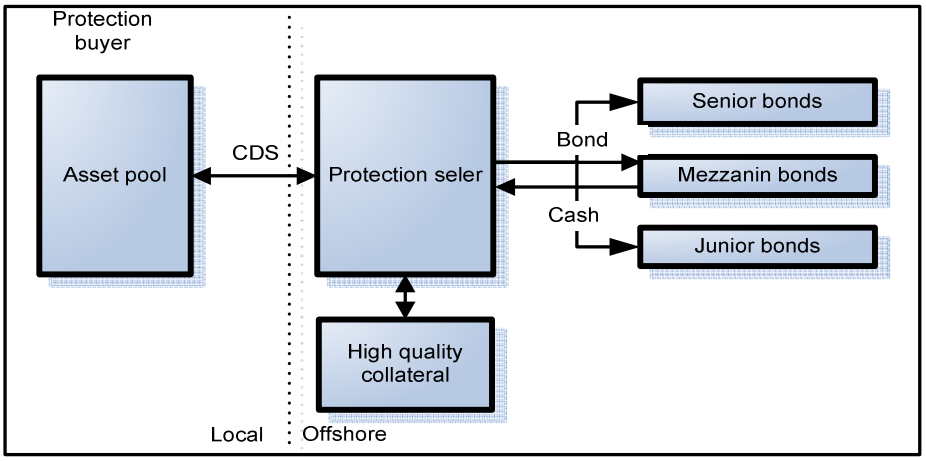
[15] PR Newswire, http://www.prnewswire.com/news-releases/gamut-re-notes-placed-as-first-primary-catastrophe-risk-cdo-58069052.html

[16] See in Đuričin, S., Bodroža, D. (2013): *The impact of drought on yield position of the group of enterprises from agriculture sector*, Economics of Agriculture, IAE, Belgrade, vol. 60, no. 1/2013, pg. 25-38.

In order to protect against flooding, drought and hail, insurance companies can issue CAT bonds. However, it should be noted that in the later stages of development of the financial and securitization markets in Serbia, cross-border securitization ought to be allowed. In the domestic financial market, there are no hedge funds willing to take a risk by purchasing equity tranche. Securitization allows the agricultural risk to be transferred out of the country in transition if the CAT bonds are purchased by international investors.

An important tool in protecting the insurer is *synthetic securitization*, which allows transfer of credit risk in the financial market. Insurer attempts to transfer risk to other participants in the financial market. The risk transfer is done by credit default swaps (CDS). The originator buys the guarantee to be protected against credit risk because it may happen that the borrower fails to fulfil its obligations. The seller of the protection (insurer) is willing to take a risk and receives a commission for the service. Most often it is the insurer who specializes in protection against credit risk (monoline insurer), but the seller of protection may be the bank or SPV as well.

Graph 2. Synthetic securitization



The buyer of protection (originator) enters into swap with insurer and transfers the credit risk of the portfolio to the insurer. In other words, it buys protection from possible default loan from the insurer. The insurer obtains commission for this service and if the default occurs, the insurer must indemnify the originator. In synthetic securitization the assets are not transferred to the insurer, but remains in the originator's balance sheet. By using credit default swaps (CDS) only risk is transferred, but not the ownership of assets.

The insurer issues collateralized debt obligations (CDO) or collateralized synthetic obligations (CSO) that sells to investors. When a credit event occurs, the insurer pays according to the agreement, and then forwards the loss to investors, according to the seniority of tranches.

The adoption of the Law on securitisation and development of financial derivatives are needed to implement the synthetic securitization in Serbia. The insurer will carry on securitization, without buying the assets, and the risk will be passed on to investors.

Furthermore, the use of credit default swaps (CDS) might protect the banks that have approved agricultural loans. Synthetic securitization allows banks to retain assets in the balance sheet, but to transfer the risk to the insurer. The insurance company takes the risk but transfers it to the financial markets over synthetic securitization.

Conclusion

The application of asset securitization as a form of financing is widely used not only in developed countries but also in countries in transition and developing countries. Claims arising from contractual relations in agriculture are a potential source of funding. Asset securitization means that the claim can be used as collateral. Sales of agricultural loans enable banks to receive cash funds that will be used to grant new loans. Therefore, asset securitization would allow diversification of funding sources and the influx of funds to finance agriculture. Also, securitization allows hedging. In addition to the classical form of securitization in which the securities are issued on the basis of agricultural loans there may be future flows securitization, securitization under repurchase agreement and warehouse receipt, synthetic securitization and securitization to transfer the risk through CAT bonds.

Serbia, like most countries in transition, has a problem to finance agriculture. Traditional sources of financing through the banking system are not sufficient. Furthermore, there is a problem to transfer risk in agriculture. The first step is the adoption of the Law on Securitization of receivables in Serbia. The existence of a legal framework would stimulate banks, insurance companies and leasing companies to sell their receivables from the agricultural sector.

The possibility of selling agricultural loans would stimulate the originators in Serbia to grant new loans and finance agriculture. The originator who can sell the loan increases its liquidity, profitability and reduces risk. It is also stimulated to obtain funds from the sale of the loan and use it for new lending activities. In order to develop securitization of agricultural loans in Serbia, the active role of the state is desirable. There are two possibilities. The first is that the state agency buys agricultural loans and to make the first securitization. Another possibility is that the first securitization will be done by the private sector, which had strong support from the state. The support of the state may first include the guarantees for issued securities. Given that the Serbian government gives subsidies to agricultural loans, the collateral for the first securitization could be the subsidized loans.

Securities supported by agricultural loans should be medium-term, with a maturity of 5 to 10 years. It is also necessary to issue more classes of the bonds. Although structured securities are more complex, they may attract different types of investors. The issuer, regardless of the fact whether it is public or private SPV, must retain the equity tranche. Guarantees for securities may be given by the government or the private sector (insurance companies, banks). These guarantees enable securities to obtain high rating, so the demand is higher. Likewise, one of the classes of the bond (older or mezzanine) should have the guarantee of an international organization (for example, IFC). The application of the guarantee of the international organization will lead to higher rating of the bonds. In addition to this, credit enhancements of transactions can be provided by subordination

through the issuance of more classes of bonds, while overcollateralization, excess spread and cash reserve funds.

The adoption of the Law on securitisation would allow the use of future flows securitization in agriculture. The transaction will enable agricultural producers to sell receivables that will occur in the future from the sale of the products (livestock, crops) to SPV. In this way, they receive grants and do not have to wait for the last to sell products. Financing can be done through securitization in which the stored goods are collateral, through repurchase agreement or by using the warehouse receipt. An important condition for the use of repurchase agreement and the warehouse receipt as collateral for the issue of securities in Serbia is fulfilled - existence of public warehouses.

The application of asset securitization would allow insurance companies to transfer risk of the portfolio to financial markets. The transfer of risk would have a stimulating effect on insurers to offer new forms of insurance. The issuance of CAT bonds may allow insurers to transfer the risk of drought, flood or hail to the investors. In addition, synthetic securitization, through credit default swaps (CDS), allows the sale and transfer of credit risk to financial markets.

In the end, it is important to note that the possibility to sell receivables from agriculture will stimulate banks, insurance companies and leasing companies to create new receivables. The sale of receivables lead to cash inflows in agriculture, increase competition, decrease interest rate and lending is more affordable. The experience of other countries in transition shows that asset securitization leads to the creation of new financial products that further simplify and improve the financing of agriculture.

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PRIMENA SEKJURITIZACIJE AKTIVE U FINANSIRANJU POLJOPRIVREDE U SRBIJI

Vera Mirović[17], *Dragana Bolesnikov*[18]

Rezime

Rad nastoji da ukaže na mogućnost primene sekjuritizacije aktive u finansiranju srpske poljoprivrede. Državne subvencije i bankarski kredititi ne obezbeđuju dovoljno novčanih sredstava, pa su potrebni novi izvori finansiranja. Poces sekjuritizacije aktive bi omogućio priliv novčanih sredstava za odobravanje novih poljoprivrednih kredita, ali i zaštitu od rizika. Poljoprivredni krediti mogu biti kolateral za emitovanje hartija od vrednosti, ali se kao kolateral mogu koristiti skladišnica, repo ugovori i prihodi koji će nastati u budućnosti. Sekjuritizacija aktive bi omogućila i prenos rizika sa osiguravajućih kuća na finansijsko tržište, preko CAT obveznica i svopa kreditnog neizvršenja. Iskustva zemalja koje primenjuju strukturirano finansiranje u poljoprivredi su dragocena za prve korake u primeni sekjuritizacije aktive u Srbiji

***Ključne reči**: finansiranje poljoprivrede, sekjuritizacija, kolateral, osiguranje.*

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Review Article

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RURAL HOUSEHOLDS IN UKRAINE: CURRENT STATE AND TENDENCIES

***Serhiy Moroz*[1]**

Summary

Households are primary means of survival for rural people of Ukraine under conditions of limited employment and income-earning opportunities in the countryside. In this paper, main tendencies of development of rural households are analyzed. Particular attention is given to socio-demographic characteristics, agricultural production activities, and changes in incomes and expenditures of the household sector. Further possible scenarios of development of households are considered.

Key words: *rural households, rural regions, Ukraine.*

JEL: *R20*

Introduction

Today, Ukrainian households have much more significant impact on the life of rural people compared to Soviet times. They managed not only to survive in market conditions, but also to carry out important activities connected with agricultural production and provision of employment and income opportunities for rural residents. As stated by Prokopa et al. (2010), the household sector has a substantial potential which can be used for balanced, sustainable development of the agro-industrial sector and rural areas. This issue is important not only for Ukraine, but for other countries with transition economy. The significant share of rural households of CEE countries is subsistence oriented. For example, in Romania for poor households, the value of subsistence production accounts for more than 50% of per capita real incomes (Davidova et al., 2009).

The objectives of the paper are the following:

- to investigate socio-demographic tendencies in the rural household sector of Ukraine;
- to analyze agricultural activity of rural households;
- to examine changes in household incomes and expenditures.

This paper is based on data of State Statistics Service of Ukraine, including publications, such as Agriculture of Ukraine, Expenditures and Resources of

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Households of Ukraine, Statistical Yearbook of Ukraine, as well as information from sampling surveys of socio-economic state of households in Ukraine. The descriptive analysis is the main method of the paper.

Socio-demographic development of rural households

In Ukraine, a household is defined as a group of persons who live together at one dwelling or its part, provide themselves with everything necessary for their life, operate their home economy together, completely or partially combine and spend money resources. These persons can be relatives by blood or in law, or not to have either of these relations, or to have both kinds of them. A household can consist of one person (Verkhovna Rada of Ukraine, 2000).

Characterizing development of households, it is important to investigate their socio-demographic tendencies. Small households consisting of one and two persons predominated in rural regions (Table 1).

Table 1. Distribution of rural households (by size)

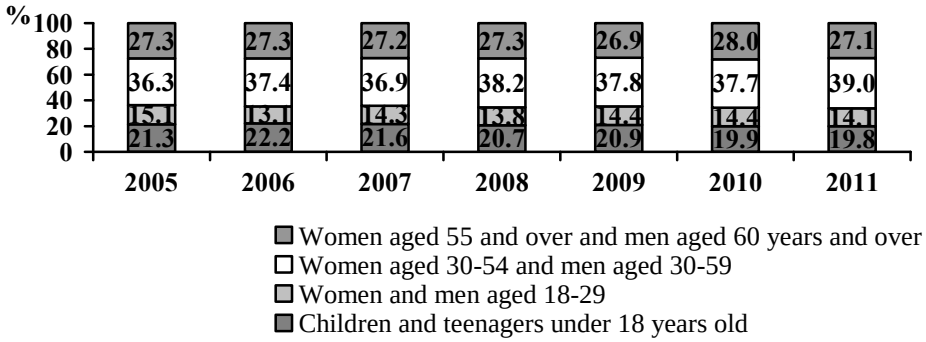
Element	2000	2005	2007	2008	2009	2010	2011	2011 (+,-) to 2000
Rural households consisting of (%):								
one person	23.2	23.6	24.5	24.2	25.3	24.7	25.8	+2.6
two persons	26.2	27.8	26.9	26.6	25.6	27.9	26.8	+0.6
three persons	16.3	17.6	19.2	19.5	19.7	19.1	18.9	+2.6
four persons	17.9	18.6	16.3	17.2	14.8	14.6	14.8	-3.1
five and more persons	16.4	12.4	13.1	12.5	14.6	13.7	13.7	-2.7
average rural household size (persons)	2.89	2.75	2.74	2.74	2.74	2.71	2.70	-0.19
share of rural households with children aged under 18 (in %)	41.4	37.9	37.8	38.1	37.2	36.1	36.7	-4.7
The share of households without children (in %)	58.6	62.1	62.2	61.9	62.8	63.9	63.3	+4.7

Source: Own composition based on data of State Statistics Committee of Ukraine (2007b, 2008b, 2009d, 2010d); State Statistics Service of Ukraine (2011c, 2012d).

In 2011, their shares were 25.8% and 26.8% respectively. The decrease occurred in households with four and five and more members: from 17.9% and 16.4% in 2000 to 14.8% and 13.7% in 2011. As a result, the average rural household size reduced from 2.89 to 2.70 persons. Besides, the portion of rural households with children aged below 18 years reduced from 41.4% in 2000 to 36.7% in 2011.

The structure of rural households, by age of members is presented in Figure 1. In 2005-2011, the percentage of young age groups declined substantially: children and teenagers under 18 years old – from 21.3% to 19.8% and women and men aged 18-29 – from 15.1% to 14.1%. At the same time, the increase of the share of old age groups took place. The reduction of the average size of households was accompanied by deterioration of their age characteristics, including the ratio between young and old age groups.

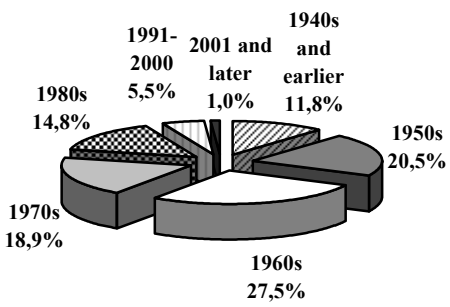
Figure 1. The structure of rural households, by age of members (in %)



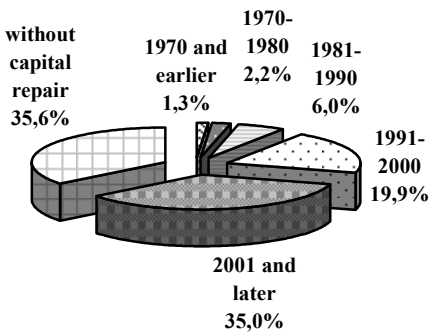
Source: Own composition based on data of State Statistics Committee of Ukraine (2006, 2007a, 2008a, 2009c, 2010c); State Statistics Service of Ukraine (2011b).

Distribution of rural households by the time of the building and the last capital repair of houses is given in Figure 2. In 2011, the majority of houses were built during the 1960s (27.5%), 1950s (20.5%), and 1970s (18.9%). The share of houses built after 2001 was only 1.0%. From our point of view, this tendency is linked with the fact that rural dwellers did not have funds for such construction. The capital repair of houses took place mostly in 2001 and later (35.0%) and in 1991-2000 (19.9%). So, because of the lack of opportunities to build new houses, the majority of rural people were able to afford only capital repairs. In addition, the significant part of rural households had the living area below sanitary norms (13.65 sq. m per person). For example, in 2011, their portion was 33.6%, including 6.9% and 5.4% of households with the residential area less than 7.5 sq. m and 7.5 sq. m - 9.0 sq. m correspondingly.

Figure 2. Distribution of rural households, by the time of the building and the last capital repair of houses in 2011 (in %)



The time of the building of houses



The time of the last capital repair of houses

Source: Own composition based on data of State Statistics Service of Ukraine (2012c).

In 2005-2011, the provision of rural households with almost all types of amenities improved to some extent (Table 2). The most substantial growth was observed for the centralized gas supply (by 16.7%) and running water (by 14.4%). The slight decrease occurred only on central heating (by 0.4%).

In our opinion, this tendency was connected with the increase of the share of rural households with the individual heating system (from 37.6% in 2005 to 51.4% in 2011). At the same time, in 2011, rural settlements continued to lag behind urban settlements regarding the availability of household amenities, namely: the centralized gas supply – by 30.3%, running water – by 56.9%, sewer system – by 57.9%, and bath or shower – by 58.3% (the only exception was the individual heating system).

Table 2. The provision of households with certain types of amenities (%)

Element	Rural settlements		Urban settlements		Rural settlements (+,-) to urban settlements	
	2005	2011	2005	2011	2005	2011
Central heating	1.4	1.0	63.6	59.6	-62.2	-58.6
The centralized gas supply	37.6	54.3	79.6	84.6	-42.0	-30.3
The individual heating system	37.6	51.4	23.8	30.9	+13.8	+20.5
Running water	20.0	34.4	84.2	91.3	-64.2	-56.9
Hot water supply	1.0	5.7	44.1	44.4	-43.1	-38.7
Sewer system	18.8	32.4	83.2	90.3	-64.4	-57.9
Bath or shower	14.1	27.7	77.0	86.0	-62.9	-58.3

Source: Own composition based on data of State Statistics Committee of Ukraine (2006); State Statistics Service of Ukraine (2011b).

We guess that the above-mentioned unfavorable situation occurred due to insufficient attention which was paid to social conditions in rural areas during market transformations. It is necessary to understand that these conditions have a strong impact on rural demographic characteristics. Existing legislation requires that at least 0.5% of the gross domestic product should be directed to development of rural social infrastructure. In practice, funds were not allocated to rural regions because of the lack of budgetary resources. As a result, rural infrastructure deteriorated considerably, and the construction of new infrastructure objects declined drastically. From our point of view, existing socio-demographic problems can be solved on the basis of target measures, especially in the frame of rural development programs.

Agricultural activities of households

The role of households in agricultural production rose substantially. Between 1990 and 2011, their portion in gross agricultural output went up from 29.6% to 48.2% (State Statistics Service of Ukraine, 2012a). In 2011, households had a high share in production of labor-intensive agricultural products, including: potatoes - 96.9%, vegetables - 84.3%, fruits and berries - 84.2%, and milk - 79.7% (Table 3).

Table 3. Share of households in production of agricultural products

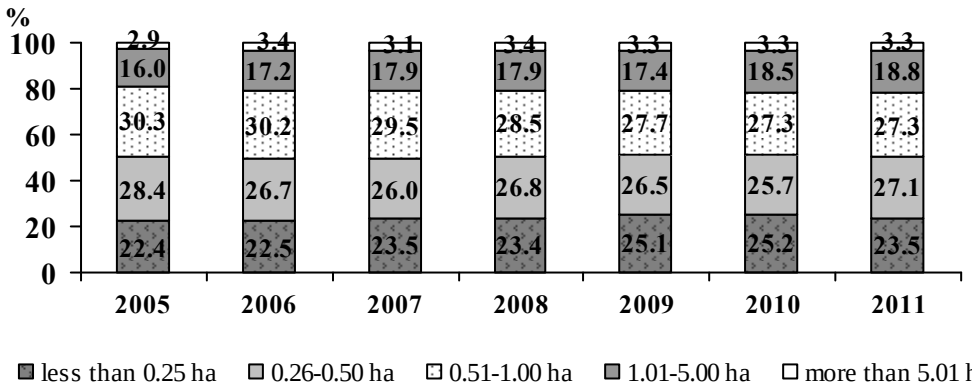
Element	1990		2000		2011		2011 as % of 1990
	in 000 t	%	in 000 t	%	in 000 t	%	
Grain and leguminous crops	1445.2	2.8	4494.8	18.4	12527.5	22.1	8.7 times
Sugar beet (factory)	2.8	0.01	1604.7	12.2	1595.1	8.5	569.7 times
Sunflower seeds	61.6	2.4	431.7	12.5	1381.7	15.9	22.4 times
Potatoes	11938.8	71.4	19561.4	98.6	23495.9	96.9	196.8
Vegetables	1794.3	26.9	4835.0	83.1	8292.4	84.3	4.6 times
Fruits and berries	1554.6	53.6	1188.5	81.8	1596.5	84.2	102.7
Meat (in slaughter weight)	1258.8	28.9	1224.7	73.7	928.5	43.3	73.8
Milk	5874.2	24.0	8989.2	71.0	8840.1	79.7	150.5
Eggs, mln. pieces	6160.7	37.8	5831.3	66.2	6951.6	37.2	112.8

Source: Own composition based on data of State Statistics Service of Ukraine (2012a).

In this period, the most significant increase in the production volume took place for the following agricultural crops: sugar beet (factory) - 569.7 times, sunflower seeds - 22.4 times, grain and leguminous crops - 8.7 times, and vegetables - 4.6 times. Compared with agricultural crops, the output of the majority of animal products grew to a much smaller extent: milk - by 50.5%, eggs - by 12.8%. Furthermore, the volume of meat production (in slaughter weight) decreased by 26.2%.

Reformation of agricultural enterprises led to the substantial increase of the land area which is privately owned by rural residents. The area of household plots rose from 2.5 mln. ha in 1990 to 5.0 mln. ha in 2011. Accordingly, its share in the total area of agricultural lands went up from 6.0% to 12.0%. Between 2005 and 2011, the percentage of households with land slightly fell from 98.8% in 98.2%. Distribution of rural households with land is presented in Figure 3.

Figure 3. Distribution of rural households with land, by number (in %)



Source: Own composition based on data of State Statistics Committee of Ukraine (2010a); State Statistics Service of Ukraine (2012a).

In 2011, the highest shares had households with the following land areas: 0.51-1.00 ha (27.3%), 0.26-0.50 ha (27.1%), and less than 0.25 ha (23.5%). In aggregate, the portion of

households, which had the land area up to 1.00 ha, was 77.9%. The share of agricultural households with the land area more than 5.01 ha was only 3.3%. During 2005-2011, the most substantial drop occurred in the portion of households with 0.51-1.00 ha of the land area (by 3.0%), while the largest growth took place in the share of households with the land area of 1.01-5.00 ha (by 2.8%). As a result, the average land area of a rural household increased from 1.08 to 1.21 ha.

The vast majority of land parcels of households were leased out. In 2011, their part was 71.3%. In our opinion, there are two reasons for this. The first reason is the unfavourable age structure of the rural population. It is particularly related to the reduction of the portion of young people aged 18-29 and the growth of the share of old age groups (see Figure 1). The second reason is the insufficient provision of households by machinery and equipment that limits their possibilities to carry out production activities (this issue will be considered later in this paper). In 2011, 13.9% of households used land plots only to meet their own needs in agricultural products. Only 13.8% of rural households were partially oriented to the sale of farm products.

Regarding the usage of arable land, in 2011 the largest share was occupied by grain and leguminous crops (43.7%), potatoes, vegetables and cucurbitaceae (17.9%), fodder and other crops (16.6%), and sunflower (11.2%). Thus, rural households were primarily oriented towards to cultivation of agricultural crops which, if necessary, could be sold profitably at the market or used for feeding of their own livestock and poultry.

The role of animal husbandry in the rural household sector reduced to some extent. The share of households with livestock, poultry, and bees decreased from 84.4% in 2005 to 77.9% in 2011 (State Statistics Committee of Ukraine, 2006; State Statistics Service of Ukraine, 2011b). In this period, per 10 rural household, the number of cattle declined from 7.0 to 5.4 heads (including cows - from 5.0 to 3.7 heads). At the same time, the number of pigs and poultry increased from 6.2 to 6.6 heads and from 132 to 134 heads accordingly (State Statistics Service of Ukraine, 2012a). In 2011, the highest share had households which did not keep cows (71.1%) and pigs (66.1%) (Table 4).

Table 4. Distribution of rural households, by number of selected types of livestock (in %)

Element	2009			2011		
	Cattle		Pigs	Cattle		Pigs
	Total	incl. cows		Total	incl. cows	
Households which do not keep respective types of livestock	68.0	69.6	70.8	69.3	71.1	66.1
Households which keep the following number of respective types of livestock:						
1 head	15.5	22.9	12.5	15.0	21.7	13.0
2 heads	10.8	6.2	12.4	10.5	5.9	14.8
3 heads	3.2	1.0	2.1	2.8	0.9	3.1
4 heads and more	2.5	0.3	2.2	2.4	0.4	3.0

Source: Own composition based on data of State Statistics Committee of Ukraine (2009b, 2010b); State Statistics Service of Ukraine (2011d).

A significant portion of rural households owned one cow (21.7%) and one or two pigs (13.0% and 14.8% respectively). However, the percentage of households that had a relatively large number of animals and were clearly focused on the sale of their products at the market was quite small. The portion of households with two and more cows and three and more pigs was 7.2% and 6.1% correspondingly.

Factors which have an impact on development of agricultural production in the rural household sector

The above-mentioned trends confirm that only a small part of households is aimed at selling their products at the market. There are several specific factors which lead to such a limited production model. One of these factors is availability of machinery and equipment in households (Table 5). In 2005-2011, the portion of households with machinery and equipment increased from 11.9% to 14.6%. However, in absolute terms, it still remained a low rate. In 2011, the highest level of provision of the rural household sector was observed for ploughs (39.4%) and harrows (35.6%). On the other hand, the share of households with combines and trucks was the lowest: 1.7% and 2.9% correspondingly. Moreover, the majority of machinery in the household sector is outdated (Krysanov, Udova, 2012).

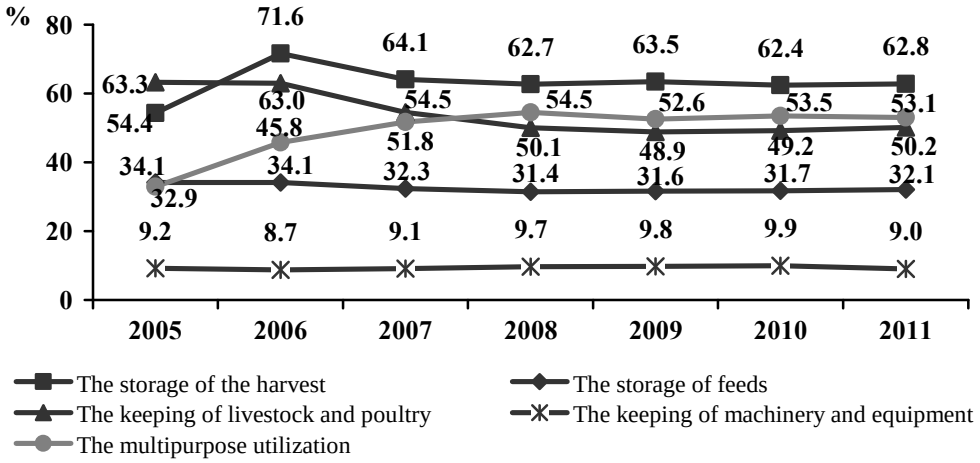
Table 5. Availability of Machinery and Equipment in Rural Households (in %)

Element	2005	2006	2007	2008	2009	2010	2011	2011 (+,-) to 2005
Households which possess machinery and equipment	11.9/ 100.0	12.2/ 100.0	12.3/ 100.0	12.5/ 100.0	13.6/ 100.0	13.0/ 100.0	14.6/ 100.0	+2.7
including:								
plough	51.6	47.9	47.0	46.8	42.6	41.3	39.4	-12.2
sowing-machine	8.8	11.1	11.4	10.3	10.0	11.0	11.9	+3.1
harrow	48.0	44.4	43.9	44.6	40.4	37.3	35.6	-12.4
cultivator	14.2	12.7	14.0	14.4	11.4	12.9	13.5	-0.7
tractor	19.5	17.9	18.0	19.6	17.0	16.0	16.5	-3.0
combine	1.5	1.9	1.8	1.7	1.8	1.8	1.7	+0.2
separator	33.1	38.2	25.3	22.0	22.5	20.5	22.9	-10.2
peeling mill	16.4	21.1	20.5	18.3	19.6	19.1	23.4	+7.0
truck	5.8	4.4	4.8	4.0	3.9	3.3	2.9	-2.9

Source: Own composition based on data of State Statistics Committee of Ukraine (2010a); State Statistics Service of Ukraine (2012a).

The provision of rural households with farm buildings improved to some extent. The portion of households which did not have them decreased from 4.4% in 2005 to 0.8% in 2011. Similar to machinery and equipment, the situation differed significantly from one type of buildings to another (Figure 4). In 2011, the highest level of provision was observed for buildings for storage of the harvest (62.8%), the multipurpose utilization (53.1%), and the keeping of livestock and poultry (50.2%). Though, just 9.0% of households had buildings for the keeping of machinery and equipment.

Figure 4. Share of rural households owned farm buildings (in %)

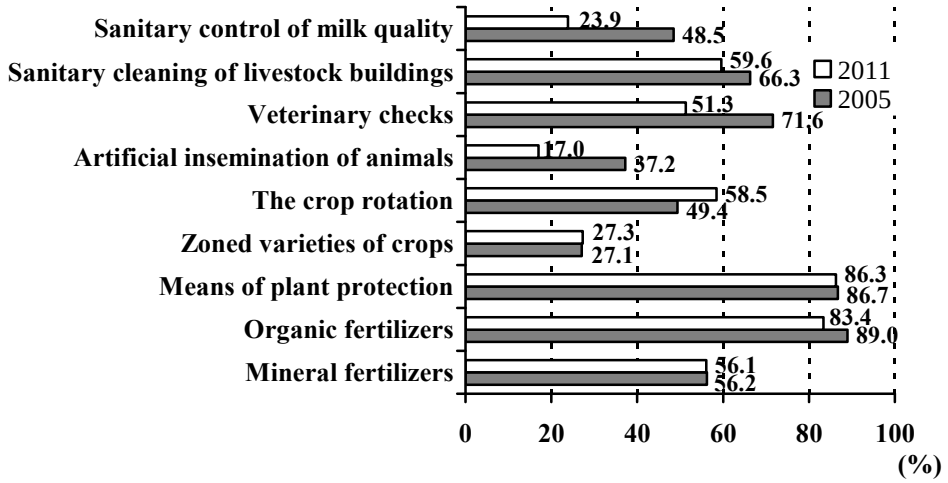


Source: Own composition based on data of State Statistics Committee of Ukraine (2010a); State Statistics Service of Ukraine (2012a).

The use of the majority of measures for effective agricultural production in the household sector fell between 2005 and 2011 (Figure 5). This reduction was primarily related to animal production. The largest decline was seen for sanitary control of milk quality (by 24.6%), veterinary checks (by 20.3%), and artificial insemination of animals (by 20.2%). In crop production, there was only a slight decrease on the usage of such measures (with the exception of the crop rotation and zoned varieties of crops). Its level for organic fertilizers, means of plant protection and mineral fertilizers contracted by 5.6%, 0.4% and 0.1% correspondingly.

The majority of households were still based on manual labor for land cultivation. For instance, in 2011, their share was 89.3% (Figure 6). Moreover, the percentage of rural household used only the manual labor increased from 9.8% in 2009 to 10.9% in 2011. The positive fact was that the proportion of households relied on tractors for crop production grew from 66.9% in 2005 to 72.7% in 2011.

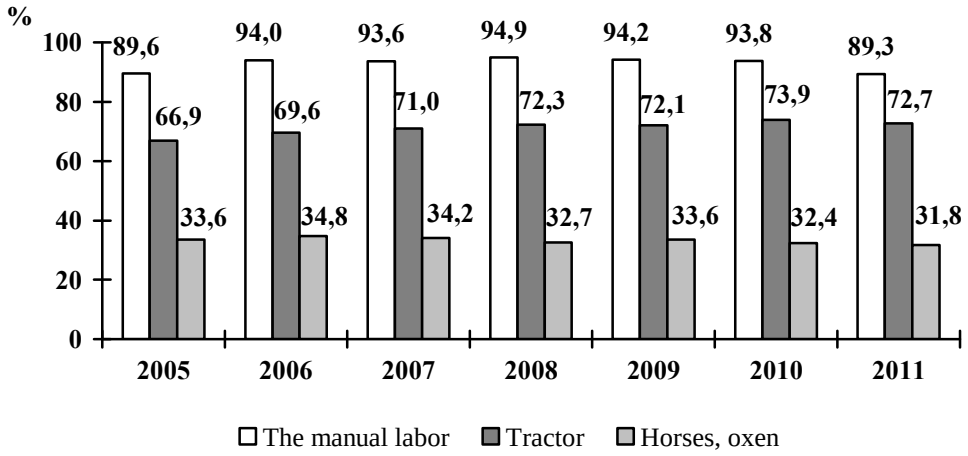
Figure 5. Share of rural households using measures for effective agricultural production (in %)



Source: Own composition based on data of State Statistics Service of Ukraine (2012a).

Though, only in a small share of rural families performed all technological operations by tractors. In 2011, this indicator accounted for 8.5% (or by 4.2% more than in 2009). Besides, the role of horses and oxen for land cultivation remained essential for the household sector, while the portion of households which used these animals fell from 33.6% in 2005 to 31.8% in 2011.

Figure 6. The share of rural households using means of land cultivation (in %)



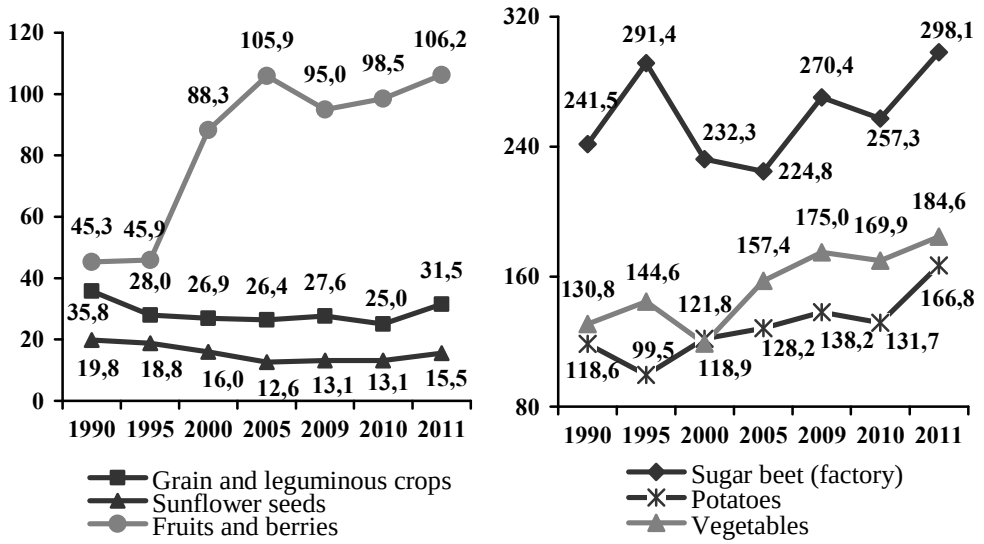
Source: Own composition based on data of State Statistics Committee of Ukraine (2010a); State Statistics Service of Ukraine (2012a).

To determine the rate of intensity of the farming system in the household sector, information about yields of main agricultural crops was used (Figure 7). Until 2000-2005,

the decrease of the yield level has been observed for most crops. Later, it has grown again. According to the type of the yield change, three groups could be identified:

1) agricultural crops for which yields, despite their further growth, did not return to the 1990 rate (grain and leguminous crops, sunflower seeds);
2) crops for which yield figures exceeded the levels in 1990 (vegetables, potatoes, and sugar beet);
3) fruit crops for which the yield level increased significantly (more than 2.3 times) in 1990-2011.

Figure 7. Yield of main agricultural crops in rural households (centners per hectare of the harvested area)



Source: Own composition based on data of State Statistics Service of Ukraine (2012b)

The appearance of these groups is a consequence of the existing approach to agricultural production in the household sector. We have already mentioned that, to a significant extent, farm operations in households were done manually. The yield growth was observed for those crops that were the most labour-intensive due to peculiarities of production technologies. More accurate conclusions can be drawn by analyzing the ratio of crop yields between rural households and agricultural enterprises (Table 6). Two periods could be determined concerning the change of this indicator for all crops (with the exception of fruits and berries).

Table 6. The ratio between rural households and agricultural enterprises with regard to yield of main agricultural crops (in %)

Element	1990	1995	2000	2005	2009	2010	2011	2011 (+,-) to 1990
Grain and leguminous crops	102.0	116.7	147.0	101.9	90.8	90.6	80.8	-21.2
Sugar beet (factory)	87.6	143.5	135.8	88.0	84.4	91.4	80.4	-7.2
Sunflower seeds	126.1	133.3	135.6	98.4	83.4	85.1	81.6	-44.5
Potatoes	105.3	180.6	111.6	86.7	69.4	77.0	77.0	-28.3
Vegetables	83.3	174.4	134.7	101.9	68.3	82.1	65.8	-17.5
Fruits and berries	113.3	429.0	810.1	661.9	358.5	257.9	259.0	+145.7

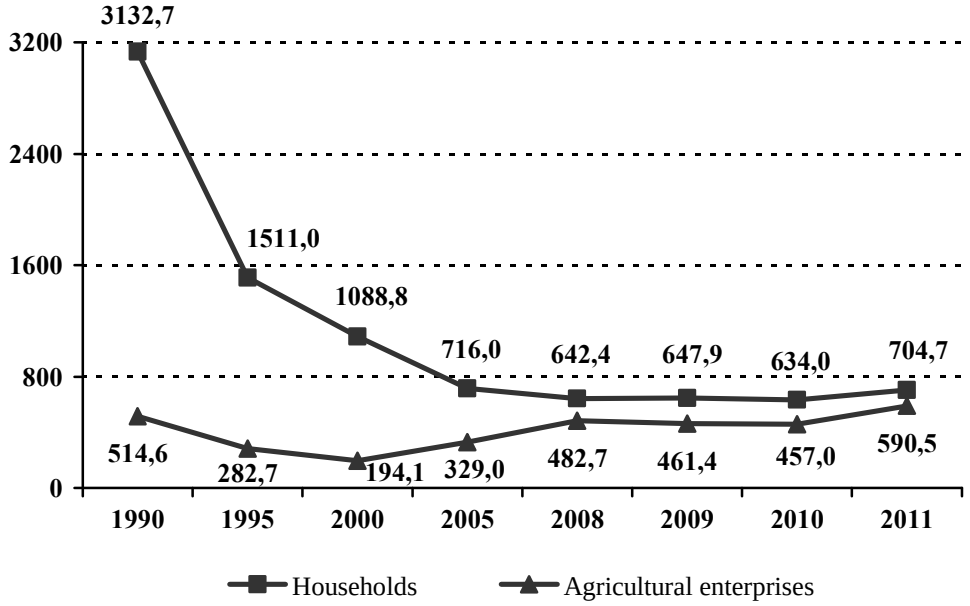
Source: Own composition based on data of State Statistics Service of Ukraine (2012b).

During the first period, from 1990 to 2000 (for grain and leguminous crops and vegetables until 2005), the yield levels in rural households were higher in comparison with agricultural enterprises. In 1995, the above-mentioned ratio for potatoes and vegetables was equal to 180.6% and 174.4%. In the second period, after 2000-2005, the situation has been changed significantly. Rural households increasingly began to lag behind agricultural farms in terms of crop yields. As a result, in 2011, the yield ratio was the following: vegetables – 65.8%, potatoes – 77.0%, and sugar beet (factory) – 80.4%. A specific trend was observed for fruits and berries on which the yield in households constantly exceeded its level in agricultural enterprises in the period shown. In 2000, such ratio amounted to 810.1%. However, even this indicator had a downward tendency after 2000.

Given the limitedness of data presented in Ukrainian household surveys, the comparative efficiency of the household sector can be defined using the parameter of productive land use (Melnyk, 2009). Based on this approach, we calculated the value of gross agricultural output (in 2010 comparable prices) per 100 hectares of agricultural lands for both households and farm enterprises (Figure 8).

In 1990, the corresponding indicators for households and agricultural enterprises were 3132.7 thousand hryvnias and 514.6 thousand hryvnias (UAH), while in 2011 they were equal to 704.7 thousand UAH and 590.5 thousand UAH. So, the proportion between households and farm enterprises regarding the parameter of productive land use fell from 6.1 times in 1990 to just 1.2 times in 2011. This means that the production efficiency of the household sector declined substantially.

Figure 8. Gross agricultural output (in 2010 comparable prices) per 100 hectares of agricultural lands, (in 000 hryvnias)



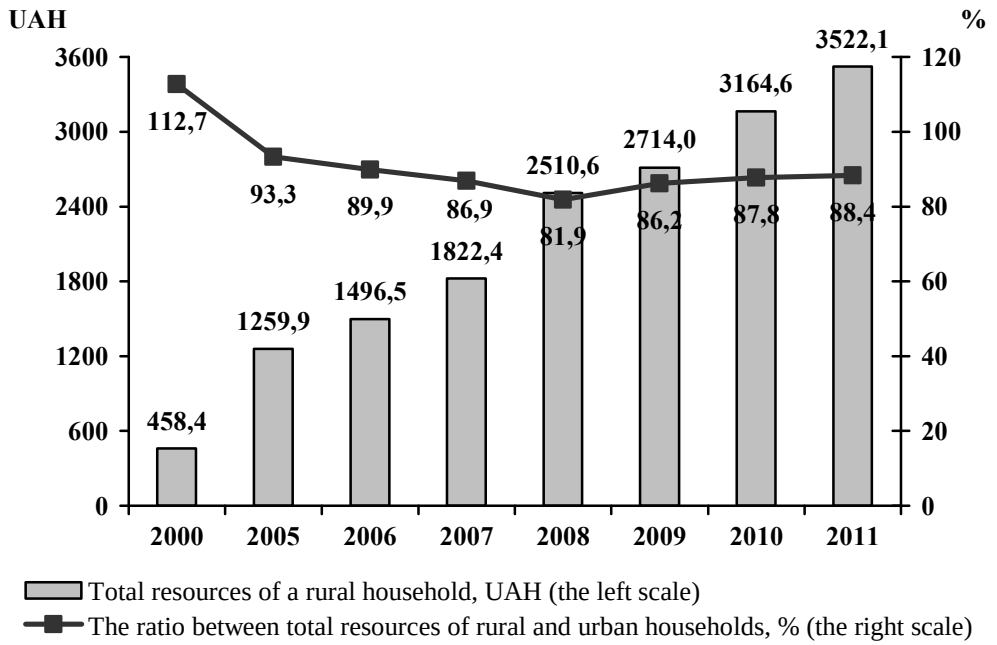
Source: Own composition based on data of State Statistics Service of Ukraine (2012a).

In 1990-2000, the mentioned indicator was much higher in households than in farm enterprises due to internal household reserves mostly related to the utilization of manual labour. Later, the low technological base had an increasing negative impact on the production efficiency of the household sector. Thus, the usage of high-cost model of farming, based on a significant share of manual labour, did not produce desired results for the sector. On the contrary, it led to the worsening of production and economic characteristics of households.

Incomes and expenditures of rural households

The level of total monthly resources of a rural household increased from 458.4 UAH to 3522.1 UAH (or by 7.7 times) between 2000 and 2011 (Figure 9). However, this quantitative growth did not allow rural households to have sufficient income. In 2010, the percentage of households which had average per capita monthly expenses below the living wage was 20.3% (State Statistics Service of Ukraine, 2011c). Besides, the ratio between rural and urban households concerning total resources went down to a significant extent: from 112.7% in 2000 to 88.4% in 2011.

Figure 9. Total resources of a rural household (per month)



Source: Own composition based on data of State Statistics Committee of Ukraine (2007b, 2008b, 2009d, 2010d); State Statistics Service of Ukraine (2011d, 2012d)

The structure of total resources of households in rural regions is given in Table 7. The notable growth was observed for money incomes: from 54.0% in 2000 to 82.7% in 2011. Basically, this happened due to the rise of the share of wages (by 15.3%) and pensions, scholarships, benefits and subsidies paid in cash (by 13.3%). At the same time, only a small portion of household incomes was related to entrepreneurial activity and self-employment (1.4% and 3.9% in 2000 and 2011 correspondingly).

The role of consumed products, which were produced in households, in total resources changed substantially. In 2000, these products were considered as the main income source for rural families, and their share was equal to 34.9%. Between 2000 and 2011, this indicator dropped by 22.7%. As a result, its percentage for 2011 was only 12.2%. A similar situation was observed for incomes from sales of agricultural products on which the portion fell from 13.4% in 2000 to 10.1% in 2011. These trends confirm that the impact of households on formation of their total resources reduced to a significant extent. Actually, rural households have become more oriented on external sources.

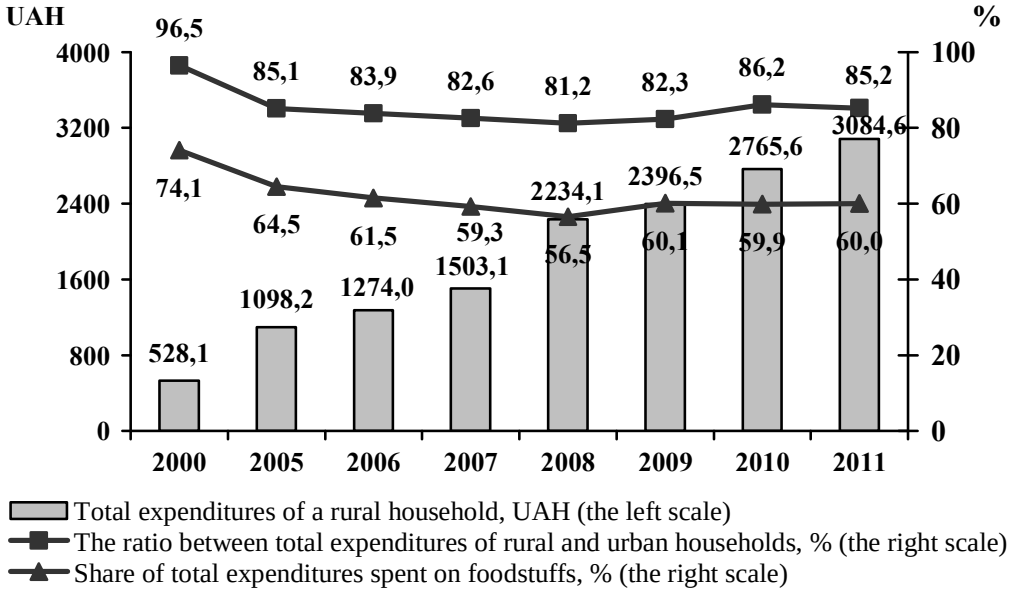
Table 7. The structure of total resources of rural households (in %)

Element	2000	2005	2006	2007	2008	2009	2010	2011	2011 (+,-) to 2000
Money incomes - total	54.0	78.9	79.5	81.5	81.3	81.8	82.4	82.7	+28.7
including:									
- wages	18.7	27.1	30.3	32.7	32.5	33.7	32.0	34.0	+15.3
- incomes from entrepreneurial activity and self-employment	1.4	3.7	4.2	3.8	3.9	4.6	4.8	3.9	+2.5
- incomes from sales of agricultural products	13.4	13.6	12.0	11.7	11.1	9.4	10.9	10.1	-3.3
- pensions, scholarships, benefits and subsidies paid in cash	14.2	27.5	26.5	26.6	27.0	28.1	28.5	27.5	+13.3
- cash assistance from relatives and other people and other cash incomes	6.3	7.0	6.5	6.7	6.8	6.0	6.2	7.2	+0.9
The value of consumed products which were produced in households	34.9	14.6	13.9	12.8	11.2	12.4	12.9	12.2	-22.7
Non-cash benefits and subsidies	2.3	0.7	0.7	0.7	0.7	0.7	0.6	0.7	-1.6
Other resources	8.8	5.8	5.9	5.0	6.8	5.1	4.1	4.4	-4.4

Source: Own composition based on data of State Statistics Committee of Ukraine (2007b, 2008b, 2009d, 2010d); State Statistics Service of Ukraine (2011d, 2012d).

In 2000-2011, the level of total expenditures of households grew from 528.1 UAH to 3084.6 UAH (Figure 10). Though, similar to total resources, this indicator in rural households was substantially lower compared with urban households. If in 2000 the ratio between rural and urban households on total expenditures was 96.5%, in 2011 it went down to 85.2%. The biggest share of total expenditures was spent on foodstuffs (2000 – 74.1%, 2011 – 60.0%). As it is known, this pattern of the use of the total expenditures is a characteristic feature of rural families living below the poverty line.

Figure 10. Total expenditures of a rural household (per month)



Source: Own composition based on data of State Statistics Committee of Ukraine (2007b, 2008b, 2009d, 2010d); State Statistics Service of Ukraine (2011d, 2012d).

Let's consider the structure of total expenditures of rural households depending on average per capita total incomes, by decile group (Table 8). First, the expenditures were mostly connected with consumption needs of rural people. The higher was the income level of households, the smaller was the proportion of these expenditures. In 2010, while for the first decile group this indicator was equal to 95.1%, the corresponding indicator for the tenth decile group was 71.5%. Second, the largest share of expenditures was used to purchase food commodities in all decile groups. Moreover, in 2008-2010, the percentage of such expenses rose significantly. In 2010, decile groups 1-5 spent more than 60% of their total expenditures on food commodities (the minimum rate - 60.5%; the maximum rate - 69.2%). These indicators were slightly lower for decile groups 6-8 (from 56.0% to 58.9%). Comparing with other groups, they were significantly smaller only for decile groups 9 and 10 (51.6% and 41.7%). However, even for these two groups, the share of expenditures on food commodities increased during 2008-2010 by 3.9% and 5.7% respectively. Third, in contrast to above-mentioned type of expenses, the decline of the share of non-consumption money expenditures occurred. This was particularly related to investment-oriented expenditures, including the purchase of shares, real estate, construction, etc. Their greatest reduction was observed for the tenth decile group of households (with the highest per capita total incomes): from 21.1 % in 2008 to 13.8% in 2010.

Table 8. The structure of total expenditures of rural households depending on average per capita total incomes in 2008 and 2010, by decile group (in %)

Element	Decile groups									
	first (the lowest incomes)	second	third	fourth	fifth	sixth	seventh	eighth	ninth	tenth (the highest incomes)
1	2	3	4	5	6	7	8	9	10	11
2008										
Consumption money expenditures	92.1	87.7	85.5	85.5	85.6	81.4	82.0	79.5	77.8	67.4
including:										
food commodities	67.8	59.8	59.3	57.4	58.0	52.4	53.3	52.3	47.7	36.0
non-food items	18.8	20.5	20.4	21.0	20.6	20.8	21.8	20.1	20.5	22.9
services	5.5	7.4	5.8	7.1	7.0	8.2	6.9	7.1	9.6	8.5
Non-consumption money expenditures	7.9	12.3	14.5	14.5	14.4	18.6	18.0	20.5	22,2	32.6
including:										
assistance to relatives and other people	1.9	2.7	3.8	5.0	5.4	5.6	7.9	7.0	8.0	9.1
the purchase of shares, real estate, construction, capital repairs, bank deposits	3.1	5.0	7.3	6.1	6.3	7.5	7.7	10.8	10.6	21.1
other expenditures	2.9	4.6	3.4	3.4	2.7	5.5	2.4	2.7	3.6	2.4
2010										
Consumption money expenditures	95.1	93.7	92.2	88.8	89.4	89.1	84.9	84.6	81.4	71.5
including:										
food commodities	69.2	65.7	63.5	60.5	61.8	58.9	57.0	56.0	51.6	41.7
non-food items	19.5	20.7	21.4	21.4	20.8	22.0	20.7	20.8	20.6	19.8
services	6.4	7.3	7.3	6.9	6.8	8.2	7.2	7.8	9.2	10.0
Non-consumption money expenditures	4.9	6.3	7.8	11.2	10.6	10.9	15.1	15.4	18.6	28.5
including:										
assistance to relatives and other people	1.5	2.7	3.5	4.5	5.2	5.5	6.6	8.1	9.4	11.8
the purchase of shares, real estate, construction, capital repairs, bank deposits	2.1	2.5	3.1	5.6	4.0	4.2	6.9	5.0	7.1	13.8
other expenditures	1.3	1.1	1.2	1.1	1.4	1.2	1.6	2.3	2.1	2.9

Source: Own composition based on data of State Statistics Committee of Ukraine (2009a); State Statistics Service of Ukraine (2011a).

We can conclude that the significant share of rural households is still considered as a mean of survival of rural residents under conditions of limited employment and income-earning opportunities. The majority of households employ manual labor. The use of machinery and equipment in households is at a quite low rate. To increase their

production efficiency, competitiveness, incomes, and commercial orientation, it will be necessary to implement appropriate measures, which are discussed in the next section.

Discussion

As analyzed in the previous sections of the paper, most rural households are involved in subsistence farming. Though, we share the point of view that the development potential of the household sector is not exhausted yet. The question is: What a model will be used by Ukrainian households in the long-term perspective? Based on the current model, they will have only limited possibilities for further development. Moreover, there will be a growing gap between households and agricultural enterprises regarding various indicators. This is connected with the predominance of manual labor and the insufficient use of modern technologies in rural families. In this case, households will still have the subsistence character.

To implement the second, commercial-oriented model, fundamental transformations should be made in the household sector. This model requires changes in the perception of the role of households in the rural economy and in the mentality of rural people. Special attention ought to be devoted to promote cooperation between households. Such cooperation should comprise not only agricultural production activities, but also the processing, storage, transportation, sale of agro-food products, provision of different services, etc. The creation of cooperative structures ought to be initiated by households themselves, rather than being imposed from the outside. Household members should have a conscious desire to joint activities and an understanding of opportunities which can be available to them as a result of the establishment of cooperatives.

As stated by Prokopa et al. (2010), there is a tendency of differentiation among households in terms of production characteristics. It is related to the formation of the segment of commercial households. This means there are prerequisites for the development of small agrarian business and the spread of the farmer way of living. It confirms that the second model is expanding in rural regions. It is essential to create organizational and economic conditions which would stimulate a further growth in the number of these households, as well as a gradual shift of rural families from self-consumption of agricultural products to their sales on the market.

It is also necessary to go beyond its current orientation towards agricultural production. In this context, special target programs should be introduced to encourage development of non-agricultural activities in rural regions. They will have a positive impact on the economic situation of rural households, and, consequently, on the quality of life of rural residents.

Conclusions

Based on presented data, it can be concluded that the demographic situation in rural households worsened significantly. This is confirmed by the predominance of small households, the significant portion of households without children, and the deterioration of household age characteristics.

The share of households provided with various types of amenities increased to some extent. However, rural settlements continued to lag behind urban settlements regarding the availability of household amenities. This unfavorable situation took place because of insufficient attention which was paid to the social development of rural regions during market transformations.

It should be noted that specific tendencies were observed in households regarding agricultural production. On the one hand, the substantial growth of their land area and share in gross agricultural output happened. The increase was particularly related to production of labor-intensive agricultural products. On the other hand, the decline of the production efficiency of the household sector occurred. The main reasons caused this negative change in households were the following:

- the wide use of manual labor;
- the low level of the provision of rural families with machinery and equipment;
- insufficient application of measures for effective agricultural production.

Data concerning total resources and expenditures confirmed that socio-economic differentiation between rural households was observed. Though, only a small proportion of them became market-oriented and had high incomes. The majority of households still had the subsistence character.

In our opinion, to improve the socio-economic state of rural households, it is necessary to implement the commercial-oriented model. This model requires changes in the perception of the role of households in the rural economy and in the mentality of rural people. Particular attention should to be paid to promote cooperation between households and to develop non-agricultural activities in rural regions.

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Review Article

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THE EFFECTS OF INPUT SUBSIDIES ON FIELD CROP PRODUCTION IN SERBIA[1]

Petar Munćan, Dragica Božić [2]

Summary

Since 2007 input subsidies given out by the government in support to field crop and vegetable production has had the greatest share in the agricultural budget of Serbia. The principal goal of input subsidy programs, as measures of agricultural support, is primarily the promotion of productivity and competitiveness of field crop production. The employment of optimal agricultural practices stimulated an increase in the use of mineral fertilizers, declared seeds, etc. At the same time these measures were noted to raise both output and quality of agricultural products including farmers' income. The implementation and importance of these measures has so far not been attracting sufficient attention and therefore the objective of the study was to analyze the effects of input subsidies on the economic position of production of some major field crops (wheat, corn, sunflower, soybean, sugar beet) on family farms owning 6-20 hectares of arable land and focused on field crop production in 2007-2011 in the plain regions of Serbia.

Key words*: input subsidies, field crop production, family farm, economic position*

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Introduction

The agriculture of Serbia plays the key role in the overall economic development of the country as indicated by the principal macroeconomic indicators (the share of agriculture reached approx. 20%, 10% and more than 20% in employment, GDP and the total export respectively). However, despite its significant role there has been a lack of support to agricultural producers in the past. The 8% share of agricultural in the total budget at the time of its adoption in the 1990s (Bozic et al., 2003) dropped to less than 3 percent. Insufficient support was accompanied by frequent changes in the type and mode of agricultural policy measures. This contributed greatly to farmers losing confidence and feeling insecure.

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Since 2004 there have been some principal system changes in the mode of implementation of the governmental monetary assistance. Namely, cash subsidies were given out to registered family farms (RFF) only. In addition, measures of support were significantly modified (Božić, Bogdanov, 2006). Since 2007 the system of (direct) payments per hectare or per animal has been employed. In the structure of financial means intended for financing the market and price policy, the share of input subsidization in agriculture accounts for nearly 70% of the agricultural budget of Serbia which makes us incomparable to the EU structure or that of the neighboring countries (Bogdanov et al., 2008). Our country was noted to turn back the policy of support to input subsidization, which characterized our neighboring countries (Hungary, Croatia etc.) in the 1990s (Božić et al., 2009). The production and economic effects in the production of field crops in Serbia were noted to lag behind compared with the countries having similar production resources at disposal (Hungary, Croatia) which justifies input subsidization as a means to give out direct support to field crop production. On the other hand, knowing Serbia's status as a potential candidate for EU accession, the EU and the WTO impose the need to abandon this practice.

In Serbia the Law on Agriculture and Rural Development *(*Official Gazette of RS, no. 41/09) was adopted in 2009. It presents a regulation framework for agricultural and rural development policy measures in Serbia. The types of incentives included in the regulation are: direct, market and structural incentives.

In order to provide expectancy, stability and consistency of agricultural policy in 2013 was adopted the Law on Incentive for Agriculture and Rural Development (Official Gazette of RS, no. 10/13). This Law regulates types and modes of utilization and conditions required when accomplishing rights on incentives, as well as Register on incentives of agricultural and rural development. The regulation includes the following incentives: direct payments, rural development incentives and special incentives. The decision on the amount of financial means, types and maximal amounts for certain incentives is made by the government for each budget year and according to the above mentioned regulations and the Regulation governing the budget of the Republic of Serbia. In addition to input subsidies, direct payments included premiums, incentives for production (both crop and livestock) and credit support. Fuel and/or fertilizers and/or seeds subsidies are paid off at a minimal total amount of 6.000 RSD per hectare for the same land area for which the owner accomplishing his rights on basic incentives (in the some amount).

The objective of the analysis was to determine the share of input subsidies in the production value achieved, the proportion of variable costs covered and the way input subsidies contributed to the increase of gross margin per hectare of some major field crops on 6 to 20 hectares family farms in the plain regions of Serbia in 2007-2011.

Research method and data source

Data of the Ministry of Agriculture, Forestry and Water Management and the Ministry of Finance were of principal interest in the analysis of the structure of the agricultural budget and measures of support to crop production in Serbia. Due to the lack of adequate statistical data for undertaking a comprehensive analysis of the impact of input subsidies on the final

outcome and results of crop production in Serbia, a questionnaire was used as well in order to investigate mutual relationship. In 2007-2011 the questionnaire used included 65 family farms primarily focused on field crop production in the plain regions of Serbia (Vojvodina, Mačva and Stig). Five major field crops (wheat, corn, sunflower, soybean and sugar beet) grown in 1999-2008 on approx. 82% of the family farms' arable land (Bošnjak, Rodić, 2010) were included in the study. In Serbia family farms are by far the largest producers of field crops accounting for approx. 88%, 73%, 65% and about 50 % of the total corn, wheat, sunflower, soybean and sugar beet production respectively (Božic, Munćan, 2007).

Data with regard to family farm size, equipment, machinery, agricultural practices, production technology, production structure, yields, cost prices of the crops grown, input and purchase prices of some inputs, etc. were sampled using the questionnaire in order to compute the production value, variable costs and gross margin for the analyzed lines of crop production on the investigated family farms. Farms up to 20 hectares, which make up to 62% of the total number of registered family farms in Serbia, were included in the analysis.

Input subsidies to crop production

Measures of input subsidies to crop production focus on reducing production costs and increasing farmers' income. Since 2007 the share of financial means for subsidizing inputs for both field crop and vegetable production (per hectare) has been the greatest in the agricultural budget. In 2010 the share accounted for 59% of the total agricultural cash support in Serbia. Input subsidization as a means to agricultural support intends to promote productivity and competitiveness of agricultural production. In addition, these funds were noted to stimulate optimal employment of agricultural practices increasing the use of fertilizers, declared seeds and etc., and in this way fostering output and quality of agricultural commodity production. During the period of investigation there was a 75% increase of the amount of input subsidies to field crop production, subsidized inputs such as mineral fertilizers, fuel and declared seeds included (*Table 1*).

Table 1. Input subsidies for field crop and vegetable production in Serbia (in 2007-2011)

Year	Subsidy for field crop and vegetable production			
	RSD		EUR*	
	RSD/hectare	Index (2007=100)	EUR/hectare	Index (2007=100)
2007.	8.000	100	101	100
2008.	10.000	80	126	125
2009.	12.000	150	135	134
2010.	14.000	175	146	145
2011.	14.000	175	133	132

* Calculated at average annual current of National Bank of Serbia.
Source: Specify regulations of the Ministry of Agriculture, Forestry and Water Management for the investigated years (Official Gazette of the RS, no. 67/07, 29/08, 12/09, 17/09, 36/09, 7/10, 53/10, 59/10, 67/10, 39/11 and 58/11.

This type of subsidy may be considered quite demanding, namely farmers are expected to register at the National Register of Farms, be owners of about 0,5 to 100 hectares of arable land suitable for field crop and vegetable production and be in the possession of an official

legal account for input purchase. Since 2009 these farmers have also been required to apply membership at the Serbian Pension and Disability Insurance Fund and pay all the pension and disability insurance taxes for the preceding year.

The impact of input subsidy on producers may be analyzed from the increased gross margin due to the decreased variable costs. Due to lower cost prices this could potentially mean a greater competitiveness of the Serbian field crops on the international market. However, the fact remains that agricultural support to field crops in competitive countries is much higher (Croatia 330 to 500 EUR per hectare depending on the field crop grown; Hungary approx. 480 EUR per hectare) which makes the Serbian field crop producers less competitive.

Input subsidies and economic position of field crop producers

Serbian producers are regularly exposed to market instability due to the constantly changing agricultural policy measures. On the other hand, consumers are forced to tolerate the inadequate structure of supply and high prices of final commodities of the food processing and food production industry (Munćan et al., 2010). The frequent changes on the market with regard to some major agricultural commodities and inputs for agricultural production represent the main feature of the Serbian agriculture today. Thus, producers are frequently exposed to financial risks as a result of either sudden or unexpected price declines of their products or rising costs of the inputs required. The reasons for the frequent price changes are mostly drought, small and insufficient supplies, unstable domestic currency rates. However, the main impacts may be attributed to the unstable world market and agricultural commodity prices.

In relation to family farms suppliers have the monopoly position to ensure the necessary inputs for agricultural production. Inputs are individually purchased and therefore there is no discount when purchasing greater quantities. Inputs are mostly bought at a local trader and prices are usually much higher compared with wholesale input prices. In addition, due to the seasonal inflow of financial means (harvest and picking) inputs are either bought when needed or at a later time (Todorović, Munćan, 2009). The possibilities of self-financing family farms in Serbia are very low. One of the reasons being the low agricultural labor productivity contributing to the low rate in the creation of additional values. On the other hand, lack of both investment capital and structural adaption was found facing the agriculture of transitional countries (including Serbia) preparing to access the EU. The insufficiently developed and unstable financial market is the main reason for such incidences (Božić et al., 2009).

Due to low competitiveness the monopoly position of the purchasers has enabled them to have a significant impact on market trends. Purchasers were found to dictate prices and deadlines for payments of agricultural commodities. For this reason family farm owners usually have no choice when defining sales conditions. Producers (although very few in number) who have their own storing capacities can postpone the final stage of their commodities, namely selling their produces. Later sales tend to increase their income. The rest of the producers are inclined to sell immediately after harvest when prices are substantially lower anyway (Bošnjak, Rodić, 2011). The fact that there is a substantial

number of small field crop producers has an unfavorable impact on market trends because of their inability to control the enormous quantities of food commodities on the market. The Serbian agricultural production focused on field crop production is known to be characterized by prominent competitiveness. Thus big producers can produce large quantities of field crops at lower cost prices in relation to small producers. When applied to all the categories of producers market prices are obliged to decline as big producers increase their production and for this reason small producers are at the risk of being displaced. Cooperation and mergence at the local, regional or national level seem to be the only solution. Considerable price disparities with regard to agricultural products and inputs were registered at the disadvantage of agricultural producers. In addition to the absolute level of product prices intended to cover production costs and ensure accumulation, external price parities i.e. relative relationship between field crop prices and input prices (seed, mineral fertilizers, fuel, etc.) are of special interest. External price parities of field crops and inputs required have aggravated the economic position of field crop producers, especially in 2008-2009.

Since 2009 there has been a sudden increase in the prices of field crops on the world market and eventually on our market as well. This contributed to the improvement of external price parities. In 2010 and especially in 2011 there was a significant improvement of the external price parities to the advantage of all the lines of field crop production. These points to a certain improvement of the economic position of the analyzed field crop producers (*Table 2*).

Table 2. External price parities of field crops and basic inputs

Product/input	Year				
	2007	2008	2009	2010	2011
Wheat price = 1,00					
Wheat seed	2.20	2.13	2.89	2.28	1.90
Min. fertilizers 15:15:15	1.81	2.10	4.67	2.71	2.00
KAN	1.38	1.17	2.50	1.64	1.30
Fuel	6.05	6.00	8.89	6.86	6.25
Corn price = 1,00					
Corn seed	117.14	381.3	484.6	286.12	227.86
Min. fertilizers 15:15:15	1.43	4.20	5.38	3.24	2.81
KAN	1.57	4.00	4.11	3.12	2.74
Fuel	4.75	12.53	10.25	10.14	8.31
Sunflower price = 1,00					
Sunflower seed	71.3	91.54	211.90	143.12	115.16
Min. fertilizers 15:15:15	0.67	1.21	2.51	1.41	1.26
Urea	0.73	1.15	1.89	1.04	1.14
Fuel	2.24	3.46	4.70	2.52	3.55
Soybean price = 1,00					
Soybean seed	1.45	2.15	2.23	2.06	2.10
Min. fertilizers 15:15:15	0.71	1.21	1.85	1.27	1.19
Urea	0.78	1.15	1.53	1.06	1.12
Fuel	2.53	3.46	3.42	2.82	3.46
Sugar beet price = 1,00					
Sugar beet seed	1784.1	1867.5	1853.3	1732.1	1754.3
Min. fertilizers 15:15:15	8.10	11.25	13.55	11.25	9.32
Urea	8.00	10.25	12.16	10.42	9.60
Fuel	26.61	32.16	37.54	30.00	29.67

Source: Author's computation using the questionnaire

According to (Ševarlić et al., 2008) there has been a chronic deficiency with regard to the effects of the realized measures of agricultural policy as the valid background for a better understanding of production profitability of some agricultural produces and the economic position of some categories of agricultural producers. In 2007-2011 the impact of input subsidies on the economic position of some major field crop (wheat, corn, sunflower, soybean, sugar beet) productions was analyzed on family farms (6-20 hectares) in the plain regions of Serbia. The effect of input subsidies on the economic position of the family farms in the study was analyzed by determining its share in the production value, coverage of variable production costs and the achieved gross margin of the field crop production lines studied (*Table 3*).

Table 3. Share of input subsidies to field crop production in the production value, variable costs and gross margin per hectare on family farms in Serbia (in %)

Elements	Year				
	2007	2008	2009	2010	2011
Wheat					
Share of input subsidies in production value	19.9	19.5	31.4	24.2	19.6
Share of input subsidies in variable costs	28.3	31.2	33.5	36.1	26.8
Share of input subsidies in gross margin	66.9	51.9	*	74.4	73.4
Corn					
Share of input subsidies in production value	14,1	22,4	23,7	20,9	14,7
Share of input subsidies in variable costs	21,8	25,5	26,9	27,4	22,4
Share of input subsidies in gross margin	39,7	*	*	89,4	42,5
Sunflower					
Share of input subsidies in production value	14,4	18,1	28,3	16,3	18,7
Share of input subsidies in variable costs	28,3	18,1	33,3	29,2	25,9
Share of input subsidies in gross margin	29,1	46,6	*	36,8	67,5
Soybean					
Share of input subsidies in production value	13,65	15,87	22,8	18,7	18,3
Share of input subsidies in variable costs	28,1	27,3	26,3	28,1	24,4
Share of input subsidies in gross margin	26,3	37,9	*	56,3	72,3
Sugar beet					
Share of input subsidies in production value	8,10	8,23	10,2	9,9	9,8
Share of input subsidies in variable costs	15,4	14,3	14,2	15,6	13,8
Share of input subsidies in gross margin	17,1	19,5	36,8	27,4	21,9

* input subsidies greater than gross margin
Source: Author's computation using the questionnaire

Throughout the study the share of input subsidies accounted for 14 to 20% of the achieved production value of the field crops analyzed except for sugar beet where the share of input subsidies was less than 10%. In 2008 and especially in 2009 which was characterized by low prices of agricultural products and high external price disparities input subsidies accounted for 1/4 and nearly 1/3 of the production value of corn but also wheat and sunflower respectively.

During the analysis the share of input subsidies in variable costs was examined showing that about 30% of these costs were subsidized for most field crops expect for sugar beet

where input subsidies was the lowest, namely approx. 15%. Also, there was a significant inequality with respect to the share of input subsidies in the achieved gross margin which was the lowest in the production of sugar beet (approx. 20%). In the case of other field crops it ranged from 25 to 60%. Input subsidies were noted to surpass manifold the achieved gross margin (wheat and corn) in years with prominent external price disparities.

In 2009 input subsidies to wheat producers was 5-fold greater than the achieved gross margin which helped cover a significant part of the fixed production costs. Finally the conclusion emerges that there is a high level of dependence of field crop producers on the granting of input subsidies as subsidy payments for production inputs given out by the government.

Measures of agricultural support intended to foster the use of agricultural inputs were found to improve the production of field crops with regard to input, structure and quality of the produces and eventually improve the economic position of field crop producers under the conditions of the ever-growing price disparities of agricultural products and input. The current agriculture policy measures and financial means intended for direct support to family farms need to be closely correlated due to our transition economy and the need to adapt to market economy (Bogdanov, Božić, 2005). This is the only way of ensuring the increase of farm income and contributing to income approaching non-agricultural regions, preserving natural resources, respecting and using comparative advantages of some regions in Serbia.

Conclusion

The increase of variable costs of production and consequently the decrease of the achieved gross margin, i.e. the aggravation of the economic position of producers of some major field crops may be attributed to price fluctuations of field crop commodities and input cost increase, i.e. the ever-growing external price disparities during the period of investigation.

Measures of direct support, i.e. input subsidies of field crop production, as an agro-policy tool, were found to be simulative, especially to small producers who were noted to apply optimal agricultural practices (greater quantities of mineral fertilizers, declared seeds, etc.). This is expected to increase gross margin, i.e. improve the economic position of field crop producers.

Financial means of the agricultural budget intended for input subsidies (direct support) to field crop production are still insufficient and for this reason Serbia is unable to sustain competitiveness over a longer period. The amount of direct support to field crop production needs to be raised so as to allow Serbia to sustain and foster competitiveness on markets of the neighboring countries, potential EU candidates.

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EFEKTI SUBVENCIONISANJA INPUTA U RATARSKOJ PROIZVODNJI SRBIJE

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Rezime

Od 2007. godine najveće učešće u agrarnom budžetu Srbije imaju sredstva namenjena regresiranju inputa za ratarsko-povrtarsku proizvodnju. Regresiranjem inputa, kao merom agrarne podrške se efikasno podstiče produktivnost i konkurentnost poljoprivredne proizvodnje. Stimuliše se sprovođenje optimalnih agrotehničkih mera, odnosno veće korišćenje mineralnih đubriva, deklarisanog semena i dr. Samim tim ova mera podstiče rast obima i kvaliteta poljoprivrednih proizvoda, kao i dohotka poljoprivrednih proizvođača. Kako od uvođenja navedenih mera u agrarno-političkoj praksi Srbije nije sagledavan njihov značaj, u ovom radu izvršena je analiza uticaja regresiranja inputa na ekonomski položaj proizvodnje osnovnih ratarskih kultura (pšenica, kukuruz, suncokret, soja, šećerna repa) na porodičnim gazdinstavima ravničarskog područja Srbije, veličine obradive površine do 6-20 ha, usmerenih na ratarsku proizvodnju u periodu 2007 – 2011. godina.

Ključne reči: *regresiranje inputa, ratarska proizvodnja, porodično gazdinstvo, ekonomski položaj.*

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AFLATOXIN STANDARDS AND MAIZE TRADE

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Summary

Mycotoxin contamination is recognized as an unavoidable risk in agriculture production in both developed and developing countries. Health consequences of aflatoxin are much more serious problem in developing countries than in developed. The number of countries regulating aflatoxins has significantly increased over the years. In paper were discussed different limitations for aflatoxin in the world, as well as their relation to the global maize trade. Following the debate in Serbia, caused by various aflatoxin regulations in different years, we wanted to contribute to the establishment of the state policy that targets mentioned issue. One of main conclusions in paper is that nations with strong trade connections tend to have similar regulations on allowed level of aflatoxin within the maize. Also, it was concluded that incidental appearance of Aspergillus flavus in maize during 2012 in Serbia demonstrates the weakness of the control system, as well as weakness of the national legislation. Main recommendation is oriented to limitation of aflatoxin B_1 in animal feed, what is in same time the most effective measure for control of level of aflatoxin M_1 in milk. After completing this condition Serbia has to return back the allowed limit for aflatoxin in milk at level of 0,05 μg/kg.

Key words: *standards for aflatoxin, global maize trade, Serbia.*

JEL: *Q13, Q18, I15*

Introduction

Mycotoxins are secondary metabolites of molds that are produced by most of fungi of the genera *Aspergillus*, *Penicillium* i *Fusarium*. They are contaminating a wide range of crops before or after the harvest. According to FAO, more than 25% of the world's agricultural crops are contaminated with mycotoxins (Đorđević et al., 2009). Mycotoxin contamination

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is recognized as an unavoidable risk because the formation of fungal toxins depends of weather conditions, so effective prevention is impossible (Marković et al., 2010).

There are many important diseases in human population and at domestic animals caused by mycotoxins (known as mycotoxicoses). By consumption of food contaminated with mycotoxins, they enter in animal body, and later can be deposited in internal organs, muscle mass and other tissues, or it can be separated from milk or urine, as in case of ruminants. When aflatoxin B1 (AB1) enters with food into the body of dairy cattle, it metabolizes in liver and stands mainly in milk as aflatoxin M1 (AM1) and partly as type AB1. So after lactation residues of both factions can be ascertained in milk (Ožegović et al., 1995). The transfer of aflatoxin B1 from feed to milk depends on many factors, ranging from 0,3 to 6,2%. According to the IRAC classification from 2002, aflatoxin M1 is in the first group of carcinogens, but it is considered to have only 10% of carcinogenicity from its precursor aflatoxin B1 (Polovinski Horvatovic et al., 2009). AB1 is extremely thermo stable compound, which can be destroyed at temperatures between 140 and 160°C (temperatures that are not applied in food and processing industry). For example, during pasteurization or sterilization, their structure is not destroyed, so they can be found in milk or milk products (Škrinjar et al., 2005). It causes damage to the liver, kidneys, cardiovascular and neural system, expressing the carcinogenic, teratogenic, mutagenic and immunosuppressive effects (Shashidhar et al., 2005).

Aflatoxin is one of the causes of hepatocellular carcinoma (HCC), the most often and malignant primary tumor of the liver, which causes the death within 12 months from the onset of the symptoms in 93% of all cases (Ferlay et al., 2010). It is estimated that in global, aflatoxin is the main cause of HCC in at least 4,6% and maximally 28,2% cases (Liu et al., 2010).

According to geographical distribution, HCC is not distributed equally. It is typically highest in developing countries, especially sub-Saharan African and Asian countries. In these high-risk regions the primary cause of cancer is recognized in HBV (chronic hepatitis B virus) infection and then in food contaminated with aflatoxins. A particular problem in hepatocarcinogenesis is a synergistic interaction between aflatoxin B1 and HBV (Kew, 2003). Exposure to aflatoxin and HBV infection is more often in rural than in urban areas (Kew, 2010; Plymoth et al., 2008), so the appearance of HCC is more common in rural areas.

Geographic patterns of prevalence of HBV infections are presented in Table 1. By frequency of HBV infection Serbia is among countries with a medium level of endemism with prevalence of HBsAg + (infected with hepatitis B), or 2-7% (Lazarevic et al., 2007).

Table 1. Geographic patterns of prevalence of HBV infections

Element	Low	Intermediate	High
HBsAg positivity	0.2%-0.7%	2%-7%	8%-20%
Anti-HBs positivity	4%-6%	20%-55%	70%-90%
Childhood infection	Infrequent	Frequent	Very frequent
Neonatal infection	Infrequent	Infrequent	Frequent
Territories where was found	Australia, Western Europe. North America (South), South America	Eastern Europe, Japan, Middle East, ex-USSR, South America	China, Southeast Asia, tropical Africa, South America (Amazon Basin), Pacific Islands

Source: Maynard et al., 1989

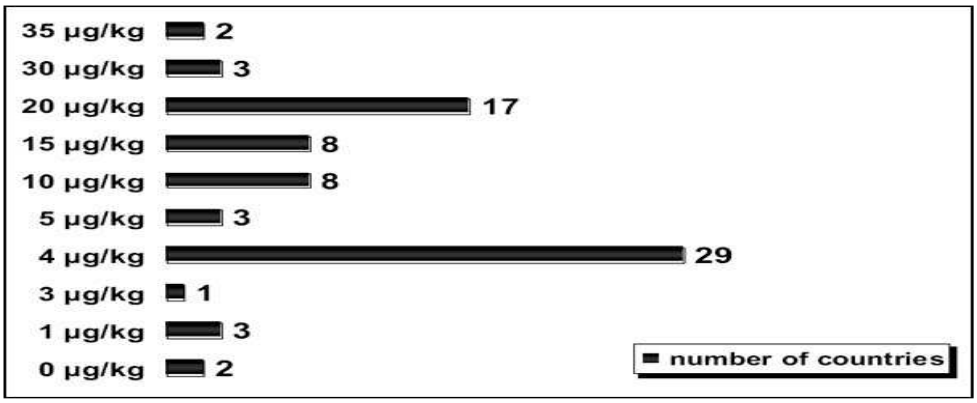
Health consequences of aflatoxin are much more serious problem in developing countries than in developed. In developing countries a lot of malnourished people are chronically exposed to high aflatoxin levels, primarily through the staple foods of maize and peanuts. These countries have a lack of resources, technology and infrastructure necessary for routine food monitoring and aflatoxin control, as well as optimal drying and storage practices. Unlike them, the developed countries have the resources and infrastructure and excellent control, thus in this countries aflatoxin contamination is reconsidered more as an economic as a health problem. Contaminated maize must be destroyed, or its price has to be reduced. Losses due to the presence of aflatoxin in maize, in the USA, are measured in hundreds of million of USD (Wu, 2004).

Global aflatoxin limitations

The number of countries that regulate aflatoxins has significantly increased over the years. The aflatoxin regulations are often detailed and specific for different foodstuffs, dairy products and feedstuffs. Most of these countries (76 countries in 2003) have regulations on total level of four predominant types of aflatoxin (B_1, B_2, G_1 and G_2), sometimes in combination with specific limit for aflatoxin B_1 (61 countries in 2003), (FAO, 2004).

Mostly used limit (Figure 1) is 4 µg/kg (applied in 29 countries), limit that was found in the harmonized regulations within the EU, the European Free Trade Association (EFTA) and candidate countries for accession to EU. Another frequently used limit is at 20 µg/kg and it is applied in 17 countries (half of them are in Latin America and several in Africa). Also, the United States, one among the first countries that established an aflatoxin action limit, follows the 20 µg/kg limit. The concentration of the sum of the aflatoxins B2, G1 and G2 is generally less than the concentration of pure aflatoxin B1 (Yabe, Nakajima, 2004).

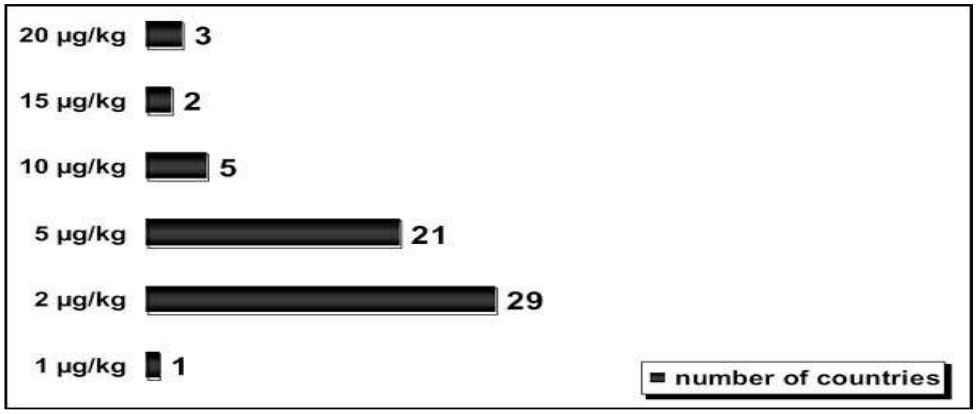
Figure 1. Worldwide limits for total aflatoxins in food



Source: FAO, 2004

The most often limit for aflatoxin B1 in food is 2 µg/kg and it is applied in 29 countries (Figure 2). Like before, limit is mostly established in the harmonized regulations within the EU, EFTA and candidate countries for EU accession. Other most important limit is at 5 µg/kg and it is followed by 21 countries (usually spread over Africa, Asia/Oceania, Latin America and Europe). The USA and Canada do not have a separate limit for aflatoxin B_1.

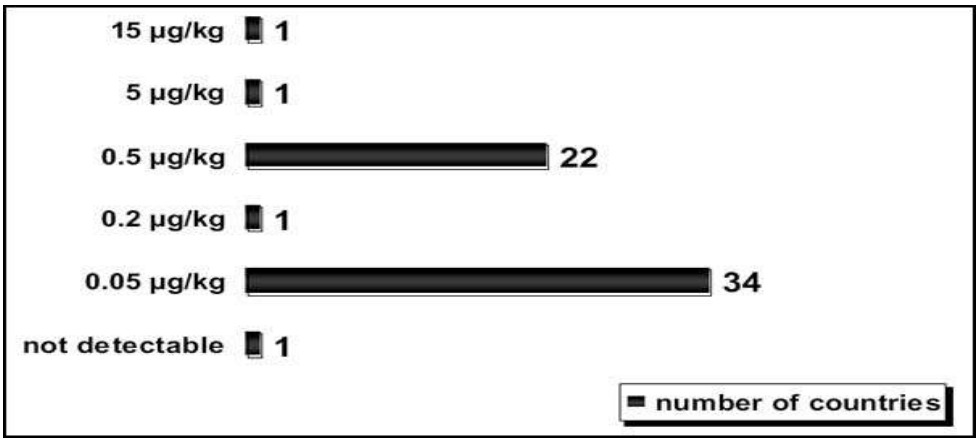
Figure 2. Worldwide limits for aflatoxin B_1 in food



Source: FAO, 2004

Regulations for aflatoxin M_1, by the end of 2003, existed in 60 countries (Figure 3). Again, as like in previous case, the EU, EFTA and candidate countries for EU accession have a highest share in the group of countries that established limit at 0,05 µg/kg, although some countries from Africa, Asia and Latin America also apply mentioned limit. Second mostly used limit is 0,5 µg/kg. This higher regulatory level is applied in the United States and several Asian countries, as well as it occurs most frequently in Latin America.

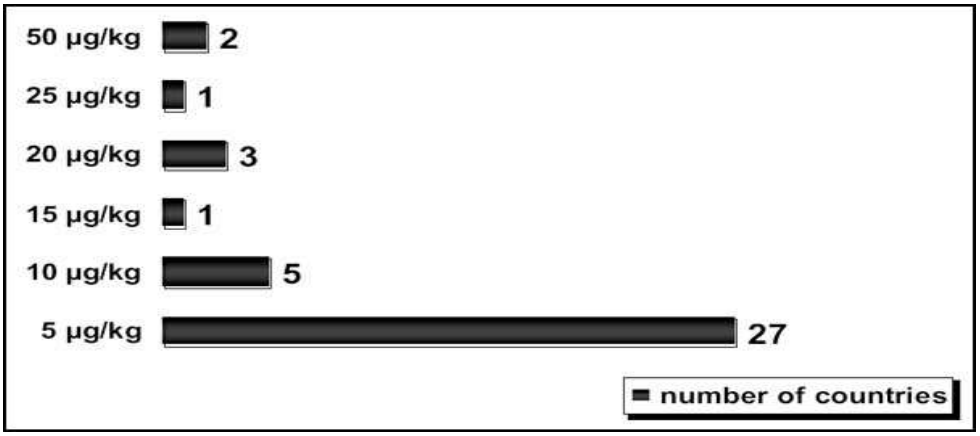
Figure 3. Worldwide limits for aflatoxin M_1 in milk



Source: FAO, 2004

Limitation of 5 µg/kg dominates within the distribution pattern for aflatoxin B_1 in feed for dairy cattle (Figure 4). Mentioned limit is applied by EU and EFTA countries. It is also followed in many candidate countries for EU accession and sporadically outside the Europe. Strict application will normally be effective to prevent that aflatoxin M_1 levels in milk remain below 0,05 µg/kg for dairy feed (where these countries have set their corresponding limit for aflatoxin M_1 in milk).

Figure 4. Worldwide limits for aflatoxin B_1 in feed for dairy cattle



Source: FAO, 2004

Global maize trade

As it can be seen in Table 2 (where were presented global top maize exporters and importers in previous decade), USA was the predominant exporter of maize in the world, exported more than half billion metric tons (MT). It has been exported four times more maze than second largest exporter, Argentina. Despite relatively small surface compared to

other leading exporters, Serbia also exported large quantities of maize (6.797.441 MT) during the previous decade. Japan is the largest maize importer in the world. Within the group of countries that have been also imported large quantities of maize over the last decade, precede Republic of Korea, Mexico, Egypt, Taiwan and Spain. Countries as are the USA, Canada, the Netherlands, Mexico and Germany were appeared in both observed groups (among top 20 maize exporters and importers).

Table 2. Top worldwide maize exporters and importers (based on volume of trade, period 2000–2009)

Rank	Top exporters	Total amount exported, 2000-2009 (MT)	Top importers	Total amount imported, 2000-2009 (MT)
1	USA	526,670,541	Japan	170,279,244
2	Argentina	123,527,253	Republic of Korea	90,841,881
3	France	71,269,591	Mexico	69,857,045
4	China	65,558,093	Egypt	51,446,403
5	Brazil	54,473,911	Thailand	47,282,122
6	Hungary	28,557,159	Spain	45,302,592
7	Canada	23,311,927	USA	33,978,967
8	Ukraine	19,568,172	Netherlands	28,629,716
9	South Africa	15,021,879	Malaysia	27,703,058
10	Paraguay	12,051,097	Iran	27,178,624
11	Mexico	11,923,079	Columbia	26,821,972
12	India	11,738,537	Canada	26,012,453
13	Germany	10,400,097	Algeria	20,230,143
14	Serbia	6,797,441	Italia	16,678,997
15	Thailand	5,366,268	Germany	16,548,899
16	Romania	4,859,320	Israel	15,658,213
17	Switzerland	3,620,319	Saudi Arabia	15,613,125
18	Netherlands	3,601,194	Portugal	14,245,589
19	Austria	3,394,665	Morocco	14,083,900
20	Bulgaria	2,962,606	UK	13,815,724

Source: Wu et al., 2012

As is shown in Table 3 many of the worldwide top maize exporters are also the countries that export maize to the largest number of countries. Like before, USA has the highest out-degree (i.e. the number of countries to which it has exported at least one consignment of maize within the period 2000–2009) exporting maize to the 181 different countries. The largest maize importers, as like Japan, Korea and Mexico (Table 2) are not included in Table 3, because they are importing large amounts of maize from a small number of countries. Within Europe, countries such as France, Germany, Italy, the Netherlands, Spain and UK have realized a significant volume of maize trade among themselves (Table 2 and 3).

Table 3. Nations with the highest level of maize export and import (number of countries with which they trade)

Rank	Exporting nations	Total number of nations to which they export	Importing nations	Total number of nations from which they import
1	USA	181	France	69
2	Argentina	150	Germany	66
3	South Africa	128	USA	66
4	France	122	Netherlands	62
5	Canada	108	Canada	58
6	Brazil	101	Italia	57
7	China	95	UK	56
8	Italia	94	Spain	53
9	Netherlands	86	Egypt	53
10	India	85	Switzerland	51
11	Australia	78	Turkey	47
12	Ukraine	72	Austria	46
13	Hungary	72	Saudi Arabia	46
14	Thailand	70	Russian Federation	44
15	Spain	70	South Africa	44
16	Germany	69	UAE	44
17	Turkey	69	Bulgaria	43
18	UAE	66	Israel	41
19	UK	63	Romania	40
20	Chile	60	Belgium	40

Source: Wu et al., 2012

The USA which has established a relatively high total standard/limit for aflatoxin, 20 µg/kg, primarily exports maize to other countries that also allow relatively large volume of aflatoxin in maize (Table 4). There are, however, several exceptions: several Latin American and Middle Eastern countries that have strict aflatoxin standards (Honduras, Cuba, Chile, Turkey, Tunisia and Syria) but import large amounts of maize from the USA. In general, aflatoxin regulations in two countries which trade with maize between each other do not differ more than 5 µg/kg. In fact, in the most of top 20 trade relationships, importing and exporting country have the same aflatoxin standard for maize (Wu et al., 2012).

Table 4. Top exporter - importer pairs and their total aflatoxin (AF) standards for maize in µg/kg (worldwide trade for period 2000–2009)

Rang	Exporter nation	AF standard	Importer nation	AF standard	Total quantity (MT)
1	USA	20	Japan	20	159,377,000
2	USA	20	Mexico	20	69,764,700
3	USA	20	Taiwan	15	44,212,000
4	USA	20	Korea	20	41,657,300
5	China	40	Korea	20	36,446,400
6	USA	20	Egypt	20	35,540,100
7	USA	20	Canada	15	25,933,000
8	USA	20	Colombia	20	21,726,900
9	Canada	15	USA	20	21,161,900
10	France	4	Spain	4	18,682,400
11	France	4	Netherlands	4	14,901,600
12	Brazil	30	Iran	30	12,588,000
13	Mexico	20	USA	20	10,947,000
14	Argentina	20	Chile	5	10,625,700
15	USA	20	Algeria	20	10,457,700
16	USA	20	Dominican Rep.	20	10,325,300
17	Argentina	20	Spain	4	10,311,600
18	Chile	40	Malaysia	35	10,119,800
19	France	4	UK	4	9,899,890
20	Argentina	20	Egypt	20	9,734,360

Source: Wu et al., 2012

Limits for aflatoxins and its appearance in food in Serbia

Until March 2013, maximum permissible concentrations of total aflatoxins (B1, B2, G1 and G2) in cereals and cereal-based products in Serbia were regulated by the Regulation on maximum residue levels of pesticides in food and feed (Official Gazette of RS, no. 25/2010 and 28/2011, Annex 5, paragraph 2.1). Mentioned Regulation is in accordance with the EU regulations (Commission regulation (EU) No. 165/2010 amending Regulation (EC) No. 1881/2006 that sets maximum level for certain contaminants in foodstuffs as regards aflatoxins). Allowed volume is in range from 0,1 to 5,0 µg/kg for aflatoxin B1 and 4,0 and 10,0 µg/kg for total aflatoxins (B1, B2, G1 and G2). Also, according to this Regulation maximal level of aflatoxin M1 in milk is 0,05 µg/kg. Regulation on the quality of the feed (Official Gazette of RS, no. 4/2010, Article 99) prescribes the maximum permissible concentrations of aflatoxin B1 in food and feed for animals, as a concentration of 0,01 to 0,05 mg/kg (10-50 µg/kg), as well as limit for aflatoxin B_1 in feed for dairy cattle at 10 µg/kg. Mentioned Regulation is not in line with the EU legislation, in fact the maximal allowable level of alfatoxin B1 in foods intended for feeding of dairy cows is twice higher than a level in the EU.

In 2012 in Serbia was observed incidental occurrence of *Aspergillus flavus* on maize. This happened due to extremely high temperatures that lasted from June to September and caused the drought, which has adversely affected the maize during the process of ripening. In such conditions, the development of *Aspergillus flavus* was optimal, and resulted in the emergence of aflatoxins in maize kernels (Škrinjar et al., 2013). There are different data

about frequency and occurrence of aflatoxin within the growing season. According to one study, in 78 samples of maize used for feeding animals, 44 contained aflatoxin (Kos et al., 2013). Also, 23,1% of infected samples contained toxins in concentrations in range from 1 to 10 μg/kg, 17,9 % in range from 10 to 50 μg/kg and 15,4% in range between 50 and 80 μg/kg. Matijevic (2013) reports that 12 maize samples that were tested for the presence of aflatoxins B1, B2, G1 and G2 were contaminated by these toxins at concentrations from 6,2 μg/kg to 145,8 μg/kg. Unfortunately, detailed monitoring has not been made, but tests made in some institutions suggested to increased occurrence of aflatoxin compering to previous period (Škrinjar et al., 2013).

Aspergillus flavus was isolated in samples of feed in 2005 and 2006 (Krnjaja et al., 2007). During the period 2007-2008, 90 milk samples are analyzed for the presence of aflatoxin M in milk. In that sum, 23 samples of raw milk were produced on the small individual farms and 67 samples were commercial milk bought in the local market. Within the 23 analyzed samples of raw milk (goat's, sheep's and cow's milk) from the small individual farms in 30,4% of samples was found the level of aflatoxin M which exceeds the allowable level by the EU legislation, but in any of the samples were not found higher concentration than allowed one by national legislation. Within the 67 analyzed samples of commercial milk (34 samples of pasteurized milk and 31 sample of UHT milk) in twenty (29,8%) samples were found certain amount of aflatoxin M, but in concentration that does not exceed EU or Serbian legislation (Polovinski Horvatović et al., 2009).

Different regulations in different years cause some confusion. After the occurrence of aflatoxin in 2012, the Serbia adopted a Amendments on Regulation on maximum residue levels of pesticides in food and feed (Official Gazette of RS, no. 20/13). Based on the Regulations, the maximum volume of aflatoxin M1 in raw milk, heat-treated milk and milk for production of dairy products is 0,5 μg/kg. In fact, the maximal llowable volume of aflatoxin is increased 10 times, and previous regulation that was in force until 2010 was returned into the power. This issue triggered a debate in Serbia. Leaving aside the debate, truth is that it will be impossible to expect the EU permitted level of aflatoxin M1 in milk if Regulation on the quality of the feed (Official Gazette of RS, no. 4/2010, Article 99) is not in line with the EU regulation. This is supported by work of Battacone et al., 2009. An experiment was carried out to investigate the transfer of aflatoxin M1 into the milk of dairy cows that were fed with nutrients contaminated with aflatoxin B1. Dairy cows were divided into four groups. One was the control group and it was fed with food that contains different levels of aflatoxin during the 14 days. Dairy cows that ate a feed with a maximum permitted level of aflatoxin B1 (5 μg/kg) gave the milk which contained 58% higher level of aflatoxin M1 (0,07929 μg/kg) than prescribed.

Discussion and conclusion

Standards for aflatoxin are very complex issue, as it is not just a health issue, but also a serious trade issue. Different countries have different limitations for aflatoxins. Countries and nations that share strong food trade relations tend to have similar regulations on allowable levels of aflatoxin in maize. The USA and EU are two different clusters of maize trade. There is no direct links between the USA and any EU country at the level of

1 million MTs of maize, traded in period from 2000 to 2009. Constant tension between the USA and the EU over genetically modified organisms (GMOs), (Papic Brankov et al., 2012) adoption of strict standards for aflatoxin by the EU can be seen through the prism of non-tariff barriers for import of genetically modified USA maize. In this way EU protect itself against rapid diffusion of GMOs which is impressive, but very uneven (Papic et al., 2008), as well as against the market monopolization by the multinational companies (Papic Brankov et al., 2010).

Most of the USA maize trade is done with Canada, Latin American countries and Middle Eastern countries. Within the EU cluster, France and Hungary are the main maize exporters, while Spain and the Netherlands are main importers which share the same aflatoxin limits. In between these two distinct clusters are the countries that export maize to multiple different parts of the world, as are Argentina, Brazil and China, which deliver maize to the Africa, Asia, the Americas, Europe and Middle East. Although Argentina and Brazil have relatively relaxed aflatoxin standards, they export some amount of maize to EU countries that have much stricter aflatoxin standards. However, all three mentioned countries trade more with countries that have relaxed standards, or do not have standards at all for aflatoxin in maize (Wu et al., 2012).

The 49th Joint FAO (Food and Agriculture Organization) and WHO (World Health Organization) Expert Committee on Food Additives' Meeting on Aflatoxin, assessed the effect of aflatoxin regulations on liver cancer depending on HBV prevalence (JECFA,1998; Henry et al., 1999). Their conclusion was: the effect of moving from an enforced aflatoxin standard of 20 µg/kg to 10 µg/kg, in one nation with HBV prevalence of 1% will reduce risk of 2 additional cancers per year per billion people. In the second country with HBV prevalence of 25% yielded a drop in the estimated population risk of 300 additional cancers per year per billion people. This means that in rich, food-importing countries, with low HBV prevalence, tightening of the aflatoxin standard would reduce cancer risk to amount so small to be detectable by epidemiological methods. Searching the database was showed that this is the only work on observed topic, and it does indicate the need for caution and further research.

By reconsideration of fact that Serbia is a country with intermediate risk, since prevalence of HBV is 2-7%, as well as the fact that Serbia is a big maize exporter, we believe that there is a need for strengthening of state control. Incidental occurrence of *Aspergillus flavus* on maize, in 2012, was shown the weakness of the used control system and legislation. HACCP should be applied to control the processes and not just the final products. Regulation on the quality of the feed must be in line with the EU regulation in order to obtain milk with a better quality. Consequently, limiting of aflatoxin B_1 in animal feeds is the most effective means for controlling of aflatoxin M_1 in milk. Authorized inspection must follow more timely notifications of the Rapid Alert System for Food and Feed (RASFF)[3]. The truth is that transfer of aflatoxin B1 from feed to milk ranging from

[3] RAFFS was established to provide food and feed control to authorities with effective tool for exchange of information about measures that was taken to response the serious risks detected in

0,3-6,2%, means that there is a small risk for causing of health problems, but risk still exists. Considering that just chronic exposure to aflatoxin can create serious health risks, we feel justified temporary returned level of allowed aflatoxin to 0,5 µg/kg in order to protect domestic production. At the same time, we believe that it is necessary, as soon as possible, to return the value of the standard at the level of 0,05 µg/kg.

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relation to food or feed. This exchange of information helps Member States to act faster and coordinated in process of response to a health threat caused by food or feed.

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STANDARDI ZA AFLATOKSIN I TRGOVINA KUKURUZOM

Tatjana Papić Brankov, Marijana Jovanović[2], Biljana Grujić[4]

Sažetak

Kontaminacija mikotoksinima se smatra neizbežnim rizikom u poljoprivrednoj proizvodnji i zemalja u razvoju i razvijenih zemalja. Zdravstvene posledice od prisustva aflatoksina su mnogo ozbiljniji problem u zemljama u razvoju nego u razvijenim. Broj zemalja koji zakonski regulišu nivo aflatoksina značajno je povećan poslednjih godina. U ovom radu smo razmatrali različite standarde za aflatoksin u svetu i njihovu ulogu u globalnoj trgovini kukuruzom. Prateci debatu u Srbiji izazvanu različitom zakonskom regulativom o aflatoksinu u različitim godinama, želeli smo da doprinesemo kreiranju državne politike o ovom pitanju. U radu se zaključuje da države sa jakim trgovinskim vezama slično regulišu dozvoljeni nivo aflatoksina u kukuruzu. Takođe, u radu se zaključuje da incidentna pojava Aspergillus flavus na kukuruzu u 2012. godini demonstrira slabosti sistema kontrole i zakona. Naša glavna preporuka je ograničavanje nivoa aflatoksina B1 u stočnoj hrani što je ujedno i najefikasnija mera kontrole nivoa aflatoksina M1 u mleku. Nakon ispunjavanja ovog uslova smatramo da Srbija treba da vrati dozvoljenu granicu aflatoksina u mleku na nivo od 0.05 μg/kg.

Ključne reči: *aflatoksin standardi, globalna trgovina kukuruzom, Srbija.*

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COST-BENEFIT ANALYSIS OF ESTABLISHMENT OF SCOTS PINE, AUSTRIAN PINE AND SPRUCE FOREST PLANTATIONS

***Mihailo Ratknić*[1], *Sonja Braunović*[2]**

Summary

The cost-benefit analysis, which contributes to finding best solutions and helps in making decision on acceptability of treatment, has been used as an instrument in the assessment of afforestation impact on the environment. It has been established that a cost-effective investment into Scots pine, Austrian pine and Spruce afforestation is viable solely on the basis of wood production. Wood production, depending on tree species and soil quality, can bear even slightly higher interest rates in the areas of good soil quality in comparison to previous estimates, which mostly ranged around 3%. In the areas of poor soil quality, the interest rates can drop even below the 3% rate. At lower discount rates, the break-even point is extended in time, whereas at higher discount rates, it is shortened. The length of production cycle performs an important role in determining the cost-effectiveness of an investment, particularly from the aspect of the relation between the length of production cycle and production purposes (type and quality of wood assortments that are produced). Based on the analysis of non-quantifiable benefits and costs, it has been established that the benefits surpass the costs, therefore, afforestation projects can be acceptable.

***Key words**: cost-benefit analysis, discount rate, afforestation, cost-effectiveness, financial analysis, economic analysis.*

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Introduction

In forests, concurrently with wood production, a large or small scale production of numerous non-wood products takes place and several significant generally-beneficial functions are fulfilled. In such a complex production, a tendency towards bearing the burden of costs by the highest possible number of forest products and functions, finds its place through implementation of the Multiple Use Forestry Concept. In this manner, ways are explored for valorisation of multiple forest products and functions, since wood alone is not capable of fully carrying the burden of production costs.

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A problem of obtainment of funding and creating an assessment of the cost-effectiveness of the investment is commonly encountered upon establishing new forest cultures and plantations. Although this problem can be examined from several different aspects, the basic questions that need to be answered are the following:

- What and to what extent will be produced, in other words, what products will bear the burden of repayment of financial obligations?
- How to assess cost-effectiveness of investment into such projects?
- What discount rates should be applied when assessing cost-effectiveness?

Importance and aim of the study

By setting the target to attain the 41.4% afforestation level in Serbia by 2050, the forestry acquired a number of tasks, while afforestation, regeneration and improvement of quality of existing forests being among the priorities. The agriculture and urban planning represent the main competitors to forestry. The urban planning fulfils its needs by using the best quality agricultural land, while the agriculture, in order to maintain the existing production, extends along far larger areas of forest land (since they are less productive). Given the fact that, based on a spatial distribution, the agriculture and forestry are the primary users of the land production potential in Serbia, their demarcation represents the basic issue regarding a rational use of space. Based on all parameters, (by reconciliation of plans, measures and works with the defined needs), it has been concluded that it is necessary to perform afforestation of 1,293,500 ha of new forests in Serbia.

The primary aim of this paper, while considering the wood as the most important forestry product, is to analyse and identify the potentials of wood production in forest cultures, and to make it a principal holder of repayment of financial obligations, under local conditions. Next, on selected samples (Scots pine, Austrian pine and Spruce), to assess the cost-effectiveness of such investments and to determine an objective discount rate, which would enable attaining the cost-effectiveness of such investment in forestry projects.

The aim of the study, based on the acquired knowledge, is to enable an objective assessment of economic and financial effects of investment into projects of establishment of forest cultures.

Work method

In the analysis of afforestation projects, two aspects of analysis have been examined. In one instance, the focus is on total benefits attained by the realisation of projects (economic analysis), while in the other instance, the focus is given to a financial analysis, from the aspect of benefits for institutions or individuals who invest financial assets into the realisation of a given project.

The economic and financial analysis represents an important part in making decision on optimum use of land. According to the postulates of the International Assessment System with respect to land value in use, the economic and financial analysis participate in formation of suitability class (indirectly and suitability order), which testifies to a

considerable importance that the said analysis bears.

Financial analysis

The cost-benefit analysis has been used for the assessment of cost-effectiveness of an investment in the establishment of forest cultures. The basic postulate of this method is to present all the costs incurred, on the one hand, and, on the other hand, the values of all revenues in that production. By comparing the values obtained in such manner, the rate of cost-effectiveness is determined. In the framework of the cost-benefit analysis, costs and revenues are discounted by a relevant discount rate, for the purpose of determining their current value, with respect to the period when they are incurred or generated. The values of costs and revenues discounted in such a manner are adequately used for expressing the cost-effectiveness (Jakovljević, K., 2009).

Limitations of application of cost-benefit analysis

The cost-benefit analysis method has been used with certain limitations. Production values are calculated without taking into account the costs of their exploitation, since their inclusion makes the analysis far more complex (in longer periods, they can be changed significantly, in accordance with the possible changes of technology), which also has an impact on change of the rate of productivity. In addition, as the trend of separation of exploitation from cultivation is prevailing in forestry, the prices of standing timber are used for the calculation of wood value ("Srbijašume" Price list). As an additional argument for the omission of examination of exploitation, it could be stated that the funds invested in exploitation do not affect to a great extent the amount and cost-effectiveness of the committed funds, as they remain tied in production for a relatively short period, while the costs of establishment of cultures remain tied far longer, until the end of production cycle. The second limitation refers to the costs and revenues of thinning. Costs related to thinning, partially or in their entirety are compensated from the revenue generated from the thinning material, and they are tied in production for a very short time, and do not affect cost-effectiveness.

Costs

Taken into account were the costs of establishment of forest cultures (costs of land preparation, the value of seedlings, the costs of plantation) and the costs of soil loosening and weeding out. The said costs were expressed as per area unit (1ha) in the amount recognised by the Ministry of Agriculture, Forestry and Water Management – Forest Administration.

Establishment of cultures (afforestation)

- These costs also include tending of cultures, which includes low and regular soil loosening, within a three year period since the establishment — 85,000 RSD/ha
- Weeding out of cultures, (performed once, at the age ranging from 6to14 years, since the establishment) — 35,000 RSD/ha

Costs presented in a manner take into account the average costs in terms of conditions under which the works on establishment of forest cultures are performed and usage of material, energy and workforce. The costs of purchase of forest land have not been taken into account, as it has been planned that afforestation is conducted on areas with defined proprietary relations.

Revenue

Tree species, relevant for the areas on which establishment of forest cultures and plantations has been planned, include Scots pine, Austrian pine and spruce. In the examination of financial analysis, wood production has been set as the primary production goal within forest cultures, and, consequently, the revenue derived from such production has been assessed through the value of forest products at their relevant age. Based on the data on wood yield in forest cultures and the relevant prices of forest products, wood value spreadsheets for species on different soil quality have been created. The obtained values were discounted at discount rates (ranging from 2-10%), by means of which several different 'current values', depending on the applied discount rate, have been obtained. The wood production value has been calculated for different lengths of production cycle (ranging from 20 to 140 years), while all calculated values were expressed as per area unit (1ha).

For wood assortments taken into account for calculation of the value of wood production, prices of standing timber for veneer and rotary cutting (class 1a), saw logs class I (class 1), saw logs class II (class II), saw logs class III (class III) and pulpwood, have been used (JP "Srbijašume" price list).

Non-quantifiable benefits and costs (Economic analysis)

In the framework of cost-benefit analysis, the costs that cannot be valued in monetary terms have been expressed separately (economic analysis). Unlike the financial analysis, the economic analysis examines an impact of afforestation on biodiversity (including species, eco-system and genetic diversity), environmental impact, impact on the living community and economy (Popović, G., et al., 2011; Cvijanović, D., et al., 2011).

Study results

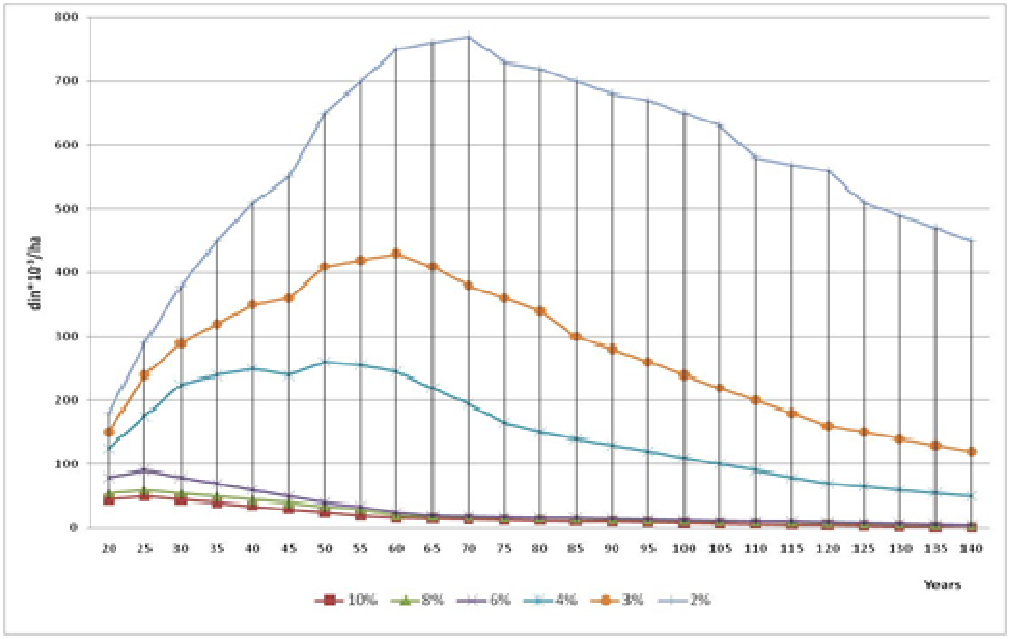
Afforestation costs and benefits that are expressed in monetary terms

The values of production of the observed tree species have been analysed for different soil quality classes (I to V), in different production cycle lengths (20-140 years) and for the 2, 3, 4, 5, 6, 8 and 10% discount rates, since it has been established that wood production in forest cultures can be cost-effective only at discount rates lower than 10% (Brumelle, S.L., et al., 1991).

In order to enable a better understanding of current values of wood and costs in different periods, graphs (graphs 1, 2, 3, 4, 5 and 6) have been drawn up, which include curves that describe changes of current wood values for specific species and different soil qualities, depending on the length of a production cycle, for the 6 above-mentioned discount rates. By

analysing the data for all soil qualities, it can be noted that the above mentioned species in certain soil qualities exhibit a favourable cost-effectiveness of an investment even at slightly higher discount rates, although most frequently for relatively short rotations.

Graph 1. Changes of current values of wood in relation to the age, at different discount rates (Scots pine, Soil quality I)



Source: The original

Table 1. Maximum values for discount rates and break-even points as per tree species and soil quality

Soil quality	Discount rate	Break-even point	Discount rate	Break-even point	Discount rate	Break-even point
	%	year	%	year	%	year
	Scots pine		Austrian pine		Spruce	
I	6.74	30	9.67	15	9.54	25
II	5.60	35	7.66	25	9.19	25
III	4.54	40	6.60	25	6.74	25
IV	3.37	50	5.34	30	5.21	35
V	2.35	70	3.62	30	3.75	50

Source: The original

Based on the condition of equality of costs and revenues, maximum values for discount rates and lengths of production cycle have been determined (break-even point), (Table 1), which clearly indicate that the discount rates enabling cost-effectiveness of an investment are still far lower than it is common for similar projects (for instance, in the agriculture). Consequently, wood production is not capable of bearing common interest rates, a fact which should be taken into account when deciding on the level of interest rates.

When determining the cost-effectiveness of an investment into forest cultures, a goal to be attained represented the starting point. It has been established that the cost-effectiveness of an investment, if wood production is selected as the primary production goal, can be attained at different discount rates, depending on species, soil quality and length of production cycle (Table 2).

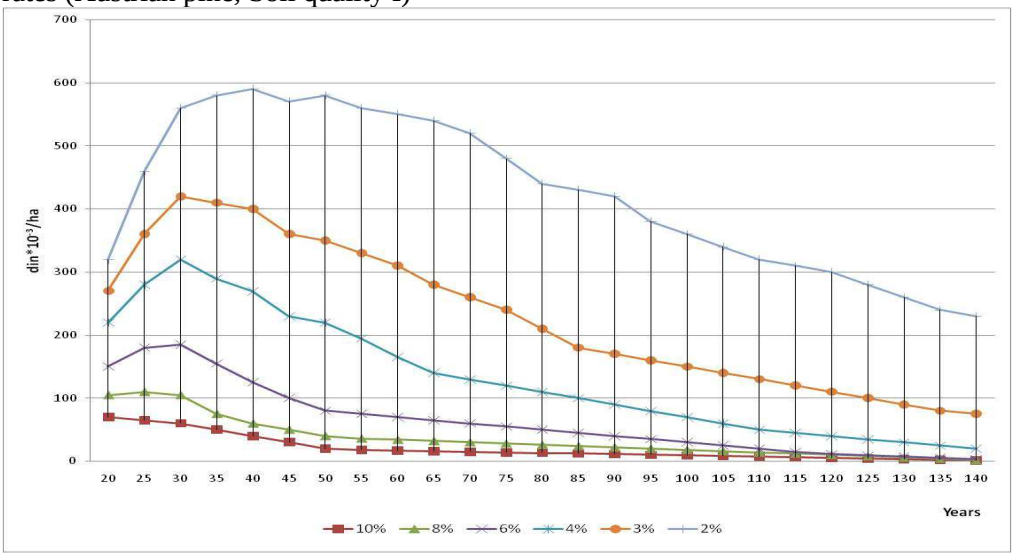
Table 2. Break-even point for wood production in Scots pine, Austrian pine and spruce cultures at different discount rates (within a year)

Discount rate	Soil quality I	Soil quality II	Soil quality III	Soil quality IV	Soil quality V
Scots pine					
2%	Over 140	Over 140	Over 140	Over 140	120-125
3%	Over 140	130-135	110-115	85-90	/
4%	95-100	85-90	70-75	/	/
6%	50-55	/	/	/	/
8%	/	/	/	/	/
10%	/	/	/	/	/
Austrian pine					
2%	Over 140	Over 140	Over 140	Over 140	125-130
3%	115-120	110-115	100-105	85-90	60-65
4%	75-80	75-80	65-70	50-55	/
6%	55-60	40-45	35-40	/	/
8%	40-45	25	/	/	/
10%	/	/	/	/	/
Spruce					
2%	Over 140	Over 140	Over 140	Over 140	Over 140
3%	Over 140	Over 140	135-140	120-125	100-105
4%	110	100-105	90-95	80-85	/
6%	65-70	60-65	50-55	/	/
8%	40-45	30-35	/	/	/
10%	/	/	/	/	/

Source: The original

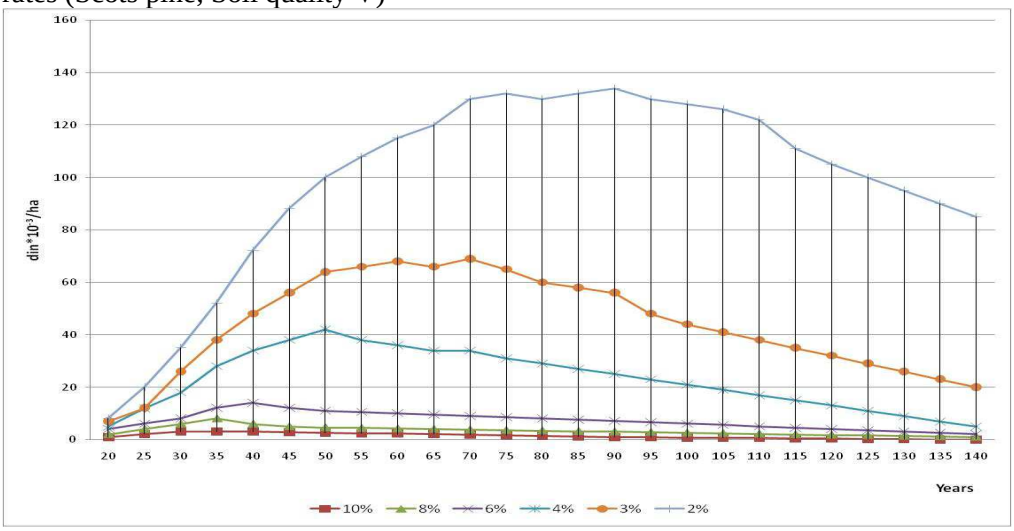
The maximum discount rates determined in such manner are related to a rotation length, while the most common instance is that with the increase of a discount rate a rotation length decreases. That means that, if long rotations must be selected from the aspect of the goal that is to be attained, a solution for the cost-effectiveness of an investment should be a discount (interest) rate that is lower than the maximum.

Graph 2. Changes of current wood value in relation to the age, at different discount rates (Austrian pine, Soil quality I)



Source: The original

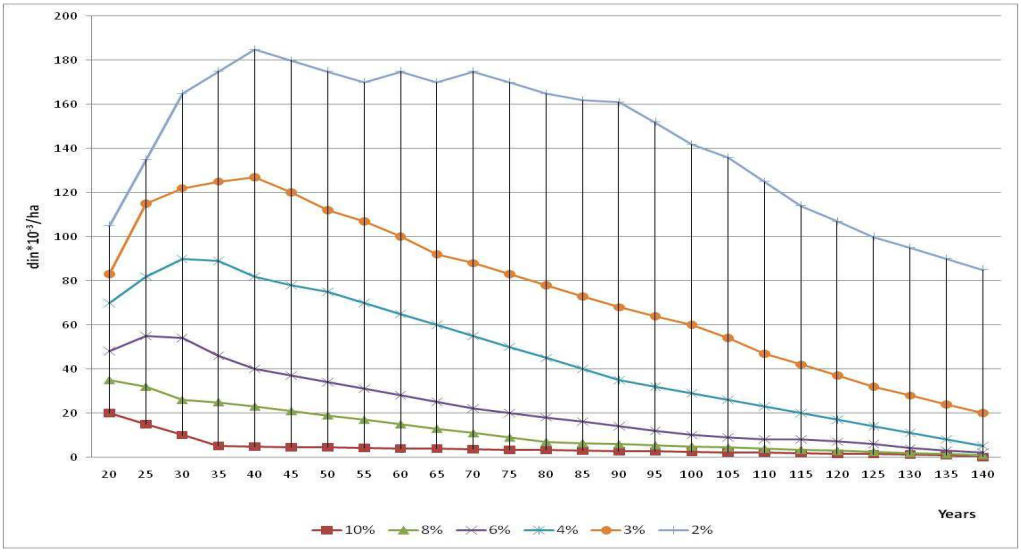
Graph 3. Changes of current wood value in relation to the age, at different discount rates (Scots pine, Soil quality V)



Source: The original

That points out to a considerable complexity of the problem and to the fact that finding out an appropriate solution is not simple; furthermore, in every specific instance, a question occurs that concerns selection of the most favourable alternative, out of several possibilities, for fulfilling financial and economic goals.

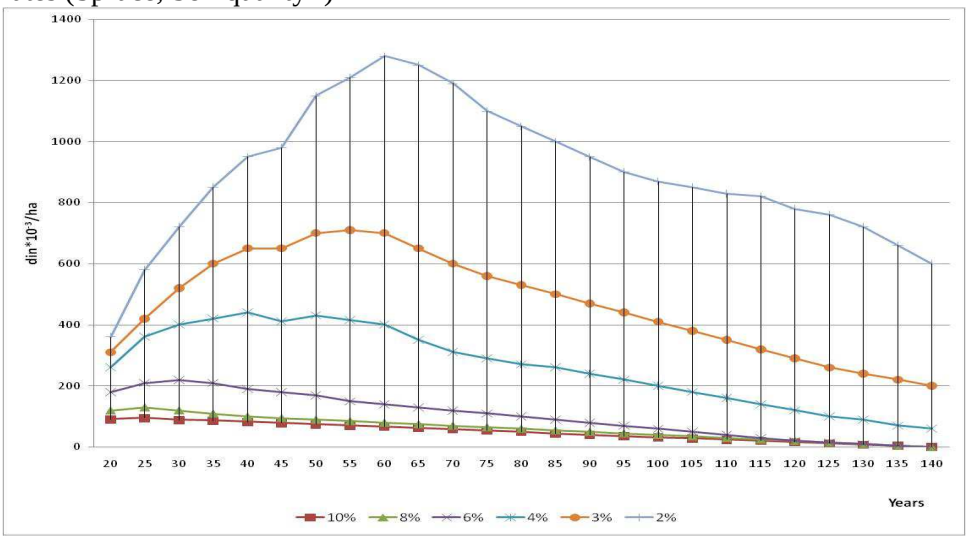
Graph 4. Changes of current wood value in relation to the age, at different discount rates (Austrian pine Soil quality V)



Source: The original

Under certain conditions (tree species, soil quality and rotation), there is a possibility that cost-effectiveness of an investment can be attained even at higher discount rates (6-10%).

Graph 5. Changes of current wood value in relation to the age, at different discount rates (Spruce, Soil quality I)



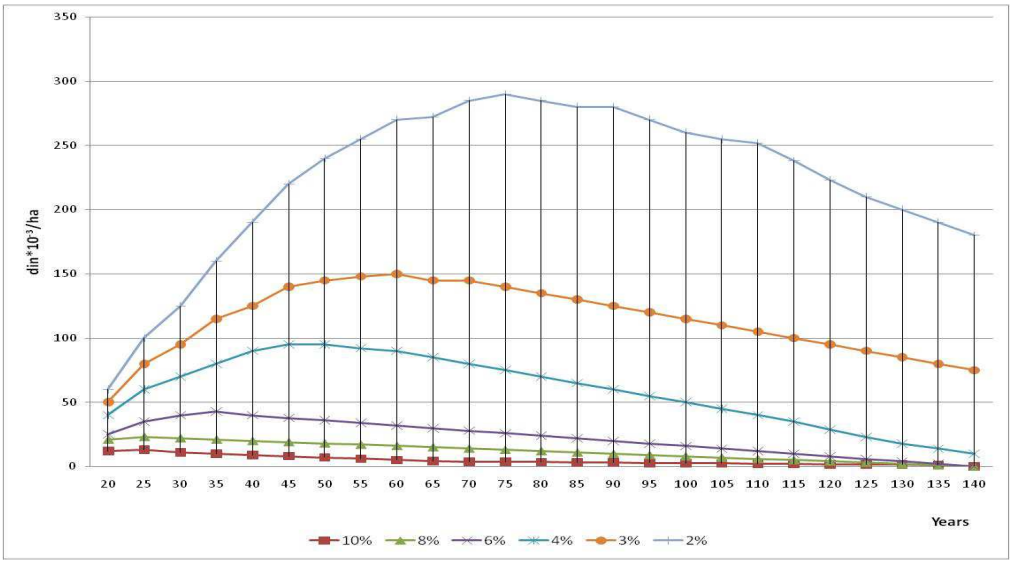
Source: The original

This fact modifies, to a certain extent, the previous conception that an investment into production in forest cultures, or, in forestry in general, can be cost-effective only at

interest rates equal or lower than 3%. Higher interest rates can be borne only in good quality soils, while in poor quality soils (III-V) the level of interest rate ranges at about 3% or even lower.

That indicates that in every specific case a relevant discount rate, appropriate for the tree species, soil quality and length of production cycle should be calculated, and, based on the value determined in such manner, the cost-effectiveness of an investment into establishment of forest cultures should be estimated.

Graph 6. Changes of current wood value in relation to the age, at different discount rates (Spruce, Soil quality V)



Source: The original

With regard to the presented analysis, it is important to note that the term 'project duration' in this case can be difficult to define, as, in forest cultures, regeneration and production, of both wood and other forest functions, are naturally established in the course of time, which is a process that can take place for an indefinitely long period, without any further investments. That is an important and essential difference when compared to standard industrial or agricultural projects, which, most frequently, have clearly defined duration, which, after its expiration, requires new investments.

Non-quantifiable benefits and costs

Along with the analysis of afforestation benefits and costs that can be valued in monetary terms, a so-called method of non-quantifiable benefits and costs has been developed. By the application of this method, it is aimed at determining values that afforestation brings to a broader social community, which cannot be expressed in monetary terms. By evaluation of non-quantifiable benefits and costs, the value of an impact on condition of biodiversity, the environment, social community and economy has been determined. For evaluation of non-

quantifiable benefits and costs for society, the ordinal scale has been used in cost-benefit analysis, while for their quantitative processing (arithmetic operations), the transformations, which enable such processing, have been used (Hastie, T. et al, 2013; Štrbac, M., 2008). The transformation has been performed according to the results quantified based on the point awarding of the intensity of certain impacts (Table 3).

Table 3. Evaluation of non-quantifiable impacts on environment

Activity impact	Impact intensity	Point awarding
Positive or negative	Very low	0-2
	Moderate	3-5
	Significant	6-8
	Very high	9 – and over

Forty types of non-quantifiable impacts, which constitute benefits and costs and are of relevance for Scots pine, Austrian pine and spruce afforestation, have been selected (Table 4).

Table 4. Evaluation of non-quantifiable benefits and costs of the planned treatment by means of a quantitative method

Impact as per the type of activities	Non-quantifiable benefits and costs (impacts)	Impact relevance	Impact type	Transformation
Impact on biodiversity (includes species, ecosystem and genetic diversity)	Impact on macromycetes	4	Negative	0.1875
	Impact on lichens	4	Negative	0.0875
	Impact on moss	3	Negative	0.1375
	Impact on vascular flora	10	Negative	0.2375
	Impact on rotatories	3	Negative	0.0875
	Impact on earthworm fauna	4	Negative	0.0875
	Impact on snail diversity	2	Negative	0.0625
	Impact on harvestman fauna	2	Negative	0.0625
	Impact on insect diversity	8	Negative	0.1875
	Impact on amphibian and reptile diversity	9	Negative	0.2125
	Impact on bird diversity	9	Negative	0.2375
	Impact on mammal fauna	6	Negative	0.1875
	Impact on ecosystem diversity	10	Negative	0.2375
	Stand fragmentation	9	Negative	0.2375
Impact on environment	Securing functioning of water regime (hydrological function)	9	Positive	0.2125
	Protection of water against pollution	7	Positive	0.1625
	Protection against harmful emissions	7	Positive	0.1625
	Regulation of soil composition and fertility (and reduction of erosion)	6	Positive	0.1375
	Impact on micro-climate	3	Positive	0.0625

Impact as per the type of activities	Non-quantifiable benefits and costs (impacts)	Impact relevance	Impact type	Transformation
	Generating oxygen and purification of atmosphere	10	Positive	0.2375
	Atmospheric carbon sequestration into produced wood volume and into humus matter created in forests	10	Positive	0.2375
	Soil acidification	5	Negative	0.1375
	'Unstable' forest stands, susceptible to adverse impact of biotic and abiotic factors (snow-breaks, windbreaks, entomological and phytopathological damage, etc)	6	Negative	0.1625
	Impact on appearance of scenery in the course of exploitation	7	Negative	0.1625
	Rehabilitation of devastated areas	8	Positive	0.1875
	Protection and mitigation of endangerment of natural forest ecosystems by afforestation and establishment of intensive forest plantations as sustainable and ecologically appropriate sources of renewable energy and industrial raw materials	9	Positive	0.2125
	Protection against noise	7	Positive	0.1625
Impact on living community	Creating conditions for recreation	6	Positive	0.1375
	Social benefits of treatment through an incitement of employment	3	Positive	0.0625
	Impact on people's health	6	Positive	0.1375
Impact on economy	Provision of raw materials for processing plant capacities	9	Positive	0.2125
	Creation of shelter belts	9	Positive	0.2125
	Impact on road infrastructure	5	Positive	0.1125
	Introduction of additional economic activities	5	Positive	0.1125
	Loss of a part of the agricultural land	6	Negative	0.1875
	Construction of economic facilities of permanent importance	4	Positive	0.0875

Impact as per the type of activities	Non-quantifiable benefits and costs (impacts)	Impact relevance	Impact type	Transformation
	Impact on other economic activities (tourism, hunting, etc)	6	Positive	0.1375
	Use of other forest products (forest fruit, medicinal herbs and fungi)	8	Positive	0.1875
	Impact on animal husbandry	5	Negative	0.2125
	Non-covered infrastructure costs	2	Negative	0.0625

Source: The original

Summary data as per the type of activity are presented in the Table 5.

Table 5. Quantification of values of assessment of non-quantifiable benefits and costs

Impact as per the type of activity	The assessed value of cost	The assessed value of benefit
Impact on biodiversity	1.6250	
Impact on environment	0.2875	1.7750
Impact on living community		0.3375
Impact on economy	0.1625	1.0625
Results	2.0750	3.175
Assessment (Benefit – Cost)>0	3.1750 - 2.0750 = 1.1000	

Source: The original

In the assessment of non-quantifiable benefits and costs, it was preceded from the assumption (possibility) that they will be actually realised (although it does not always need to be a realistic option). Based on the analysis of non-quantifiable benefits and costs, it can be concluded that the benefits surpass the costs and, consequently, the afforestation projects can be acceptable. Naturally, it should be noted that in every specific case (micro-locality) an analysis should be performed and it should be determined whether non-quantifiable costs surpass the benefits.

Discussion and conclusion

A study on environmental impact should provide the answer concerning the acceptability or unacceptability of a treatment, while the cost-benefit analysis exhibits the total level of benefits and costs for the society and the environment. In addition, this analysis should reveal the cost of a certain treatment. This refers to the costs of an investor, but also of the society in its entirety. Non-quantifiable costs and benefits should be methodologically determined in an appropriate manner. Lastly, when making a final decision on acceptability of a treatment, it is necessary to appropriately relate non-quantifiable and quantifiable costs and benefits.

Based on the presented results, it can be concluded:

1. for Scots pine, Austrian pine and Spruce, it is viable to attain cost-effectiveness of an investment into projects of establishment of cultures solely on the basis of wood

production, and at different discount rates, depending on the type and soil quality.

2. wood production in forest cultures of the observed species, depending on species and soil quality, can bear even slightly higher interest rates in comparison to current estimates, which mostly range at around 3%. However, it should be noted that this predominantly refers to areas of good soil quality, while in the areas of poor soil quality, interest rates can drop below the 3% level.
3. the amount of interest rate and assessment of cost-effectiveness of an investment are closely related to the length of production cycle, as the break- even point changes in accordance with the amount of discount rate. At lower discount rates, the break-even point is extended in time, while at higher interest rates, it is shortened. From the above-mentioned, it can be seen that the length of production cycle performs an important role in determining the cost-effectiveness of an investment, particularly from the aspect of relation between the length of production cycle and production purposes (type and quality of wood assortments that are produced).
4. based on the analysis of non-quantifiable benefits and costs, it can be concluded that the benefits surpass the costs, therefore, the afforestation projects can be acceptable.

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ANALIZA RENTABILNOSTI PODIZANJA ŠUMSKIH PLANTAŽA BELOG BORA, CRNOG BORA I SMRČE

Mihailo Ratknić[3], Sonja Braunović[4]

Rezime

"Cost-Benefit" analiza korišćena je kao instrument u proceni uticaja pošumljavanja na životnu sredinu, koji doprinosi nalaženju najboljih rešenja i pomaže pri donošenju odluke o prihvatljivosti zahvata. Konstatuje se da je za beli bor, crni bor i smrču moguće ostvariti rentabilnost ulaganja u pošumljavanje isključivo na bazi proizvodnje drveta. Proizvodnja drveta, u zavisnosti od vrste i boniteta zemljišta, može podneti i nešto više kamatne stope na boljim bonitetima u odnosu na dosadašnje procene koje su se kretale uglavnom oko 3%. Na lošijim bonitetima može da padne i ispod granice od 3%. Pri nižim diskontnim stopama granica rentabilnosti se vremenski produžava, a pri višim skraćuje. Dužina proizvodnog ciklusa ima značajnu ulogu kod određivanja rentabilnosti ulaganja, naročito sa aspekta vezanosti dužine proizvodnog ciklusa za proizvodne ciljeve (vrsta i kvalitet drvnih sortimenata koji se proizvode). Na osnovu analize nemerljivih koristi i troškova konstatovano je da su koristi veće od troškova, tako da projekti pošumljavanja mogu biti prihvatljivi.

Ključne reči: *Cost-Benefit analiza, diskontna stopa, pošumljavanje, rentabilnost, finansijska analiza, ekonomska analiza.*

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Review Article

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CHALLENGES TO PARTICIPATORY DEVELOPMENT IN A RURAL CROSS-BORDER AREA OF THE WESTERN BALKANS[1]

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Abstract

The World Bank, the Canadian International Development Agency (CIDA), USAID and the International Relief/Development Project (IRDP) concluded in different reports that participatory development programs are invariably more effective at addressing local needs and interventions are more often sustained given the engagement of local actors. The main objective of this paper is to present a detailed appraisal of the implementation process of a well-known participatory approach (the UNDP-designed Area-Based Development - ABD) in the challenging context of a rural, cross-border area (in the Western Balkans). Besides reviewing the theoretical and empirical advantages of participatory and endogenous development, this case study reflects the practical shortcomings related to the selection process of a target area and to obtaining commitment from different agents in a post-conflict zone. This article also highlights that adequate implementation of participatory practices is crucial to obtain accurate quantitative and qualitative data (to guide the development agenda) and secure the involvement of both local and (inter)national actors. The latter is an important factor in fostering long-term engagement to development strategies and the achievement of results that are relevant for the local community and in harmony with national policies and international agreements.

Key words: *Participatory mechanisms, Target area definition, cross-border local and rural development, Western Balkans.*

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Introduction

Area-based development (ABD) is a UNDP-developed approach which targets specific geographical areas characterized by a particular complex development problem that needs to be addressed considering not only short but also long term solutions covering a variety of aspects. In this paper, the implementation of ABD in an area consisting of 14 municipalities (6 Bosnian, 2 Montenegrin, and 6 Serbian also denominated as Drina Valley-Tara Mountain Target Area, refer to Table 1) is used to draw the lessons and recommendations that are specifically relevant for practitioners conducting ABD or other participatory development approaches in contexts characterized by rural, post-conflict and cross-border components. (For more details on the project implementation and partners refer to Santini et al, 2012)

Table 1. Municipalities included in the Drina-Tara target area

Participating municipalities		
SERBIA (RS) √ Ljubovija √ Bajina Bašta √ Užice √ Čajetina √ Priboj √ Prijepolje	MONTENEGRO (ME) √ Pljevlja √ Bijelo Polje	BOSNIA-HERZEGOVINA (BiH) √ Bratunac √ Milići √ Srebrenica √ Višegrad √ Rudo √ Goražde
Population (number of inhabitants)		
208 400	86 090	115 883
Area (km^2)		
3 723	2 257	1 126

Source: Statistical Yearbooks Serbia, Montenegro, Bosnia Herzegovina (2009)

Given the particular nature of such a target area and the fact that to our knowledge the ABD approach (nor any other participatory development approach) has never been explicitly implemented in said context, the objective of the paper is twofold. First, ABD implementation advantages and disadvantages are analysed in terms of their suitability to guide successful participatory development programs in this specific setting. Second, an adapted methodology (based on improved participatory mechanisms and organizational strategies) is proposed in order to increase ABD (and other participatory development approaches) implementation success rates and sustainability[9].

The paper is structured as follows: first, the inherent conceptual and methodological characteristics of the ABD approach are briefly reviewed. This is followed by an introduction to the advantages and disadvantages of ABD and the specific challenges/obstacles encountered in the implementation of ABD in the selected case study environment. Simultaneously, the strategies designed to overcome said

[9] Another point of relevance of this paper is that a successful implementation of this type of projects sheds positive light in the possibility of accession of Balkan countries to the European Union whose member countries are commonly cooperating across borders.

limitations are discussed. Lastly, in the conclusions, the lessons learnt and recommendations to successfully adapt the ABD approach to rural cross-border and post-conflict contexts are summarized.

The ABD Approach

As said by Harfst (2006) ABD targets *specific geographical areas* in a country, characterised by a *particular complex development problem*, through an *inclusive, integrated, participatory* and *flexible* approach. ABD's *area-based* or *territorial focus* derives from the understanding that the *space or area* in which people live should be the central point for improvement. The selected area basically corresponds to the geographical zone where a *specific development challenge* is faced. It could thus refer to a region or even municipality (or neighbourhood) in any given country, or (as in the case of the present case study) to a cross-border zone including a variety of municipalities and individuals from different nationalities and cultural backgrounds, provided they were all afflicted by a common problem or set of problems. Accordingly, the main purpose under the ABD approach is to serve the entire population within the area in question, rather than pre-establishing categories of potential beneficiaries (UNDP, 2009b); this is what the term *inclusive* refers to. By *targeting entire communities* instead of community segments or individuals, ABD avoids discriminatory practices among potential beneficiaries. In fact, in ABD, a special emphasis is given to the *participation* at all layers and sectors within the society as a necessary condition to correctly define an appropriate solution to the problem at hand.

The ABD approach is also concerned with identifying root causes (and avoiding undesired symptoms) from a *multi-sector* perspective that *integrates* the views of all stakeholders (Harfst, 2006). The latter is relevant as nowadays it is widely recognised that sustained rural development may not be achieved by focusing on agricultural issues alone. As a result, policy packages tend to *integrate* environmental, socio-political and institutional aspects and seek the engagement of agents from different sectors. The ABD approach thus relies on widely accepted principles that are common to rural development methods, in the sense that *participation* based on *bottom-up* initiatives and *flexibility* are key features. It is interesting to highlight that in recent years, there has been a distinct alteration in the factors influencing rural development schemes. It has become evident that projects that do not obtain *commitment and involvement* from the beneficiaries can hardly ever secure a long-term effect (FAO, 2007). On the whole, there has been a shift from a *top-down*, subsidy-based strategy to a *bottom-up* focus on *local* assets and investment in order to improve regional competitiveness (OECD, 2006). This reflects the tendency in development approaches to see rapid development and democratic participation 'as complements, to stress the need for voice and participation as a means of ensuring that reforms are politically sustainable, and to recognise as a fundamental right individuals' having a say over the decisions that affect their lives and livelihoods (Sen, 1999).

Other rural development approaches share one or several of the ABD traits, for example the Leader approach is also *place-based* and *bottom-up*, but only to a certain extent *inclusive* and *multi-sectorial*: it focuses on purely rural players (excluding small and

medium towns linked to surrounding rural areas) and does not cover the full spectrum of economic activities (large industries and infrastructures being usually covered by other EU policies than the rural development one). ABD seems to have a rather unique trait with its ambition to address all the aspects at once. This poses particular challenges as a sense of community and common purpose must be in place before local agents can address their development objectives. In the case of a cross-border setting, even higher relevance must be given to this particular issue.

It is noteworthy that the ABD main features mentioned above (principally those shared with rural development approaches) can be related to identifiable theoretical insights. For instance, the *participatory* and *inclusive* traits of ABD are coherent with the idea or concept that 'development is not just about increasing goods and services provided and consumed by society. It also involves enabling communities to have greater control over their relationship with the environment and other communities.' (Shortall and Shucksmith,1998). The latter links back to the Putnam's (1995) theories of social capital (where trust, norms and networks, are expected to improve the efficiency of society by facilitating coordinated actions) and North's (1990) consideration of effective institutional coordination. For North (1990), higher coordination within socio-economic agents (which stems from an appropriate institutional framework[10]) implies a reduction in transaction costs, thus leading to a positive impact on productivity. Another theoretical stand which supports the ABD approach is the conviction that local governance allows for 'tailoring levels of consumption to the preferences of smaller, more homogeneous groups' (Wallis and Oates, 1988); thus making on-site, localised, *area-based* planning more responsive to *area-specific* needs (Faguet, 2004).

In summary, it can be argued that some of the key theoretical foundations embedded in the ABD or main features are grounded on the notion of *endogenous development*. Ray (2000) states that *endogenous development* is understood as the hypothesis that improvements in the socio-economic well-being of disadvantaged areas can best be brought about by recognising and animating the collective resources of the territory.

The emphasis on the endogenous aspects of socio-economic development is related to the debate that flourished among economists on the endogenous drivers of *economic growth*.

According to Curren and Gleeson (2009, p. 14) endogenous growth models and theory sought to provide a theoretical framework within which long-run growth rate is determined (within the model) through the inclusion of knowledge spill-over, human capital formation, research and development, technology diffusion, etc. As stated by Hoff and Stiglitz (2001, p. 396), this meant that 'the "deep" fundamentals of neo-classical theory – preferences and technology – are themselves endogenous, affected by the social and economic environment'. From the angle of *endogenous development*, standard policies cannot be directly replicated from one place to another, as was usual practice before the 1980s. *Endogenous development* policies must thus be adapted to the cultural,

[10] Favourable institutions to economic growth include any (formal and informal) convention, norm or statute which secures clearly defined property rights, sets cost-efficient ways to enforce contracts, solve conflicts, condemn opportunistic behaviour, guarantee easy access to information, etc

socio-economic and political context. Moreover, it is expected that the population is enabled to take part in the solution-finding process along with their own resources and capacities. Overall, in terms of policy making this entails that the stimulation and accumulation of these elements at the local level could positively and largely contribute to regional economic integration and convergence of per capita income.

Challenges to ABD Implementation in a Rural, Post-Conflict and Cross Border Target Area

In the academic literature general advantages and disadvantages associated to ABD programs have been identified (Harfst, 2006, Vrbensky, 2008). Table 2 presents key aspects as summarized by Vrbensky (2008). In the case of rural cross-border target areas, some of these limitations represent particularly relevant setbacks. To begin with, the delineation and selection of the target area becomes a more highly complex process when rural and cross-border aspects are incorporated. Likewise, when dealing with rural economies, it is harder for the stakeholders involved in the participatory approach to identify development potential in sectors not directly interlinked to the activities of agricultural production, agro-food processing or rural tourism. In the same respect, in a cross-border context, understanding the macro-picture, establishing partnerships and integrating different national visions are challenging tasks both from a practical and conceptual viewpoint. Similarly, establishing a sense of community in a post-conflict scenario requires careful selection processes to create the best environment for open and non-confrontational exchanges. Next, the specific problems encountered to define the target area and select participatory mechanisms that could allow capitalizing on acknowledged advantages of ABD while compensating for the identified limitations are presented.

Table 2. Strengths and potential limitations of ABD programs

Strengths	Limitations
Integrated approach – allowing for holistic solutions and encouraging horizontal linkages and cross-sector responses even if problems are sector-specific, as development and conflict prevention requires addressing a number of issues holistically to become sustainable	**Missing macro-picture** – broader strategic context not sufficiently taken into account, weak understanding of macro-situation and policies
Platform for partnership and coordination – high potential for increased participation and better coordination since it promotes cross-sector partnerships and division of labour	**Inability to respond to structural problems** – even in the case of a good understanding of the broader context, there is limited or no influence on structural issues (e.g. related to conflict, governance, poverty, unemployment)
Promoting regional cooperation – utilization of economies of scale, facilitation of inter-municipal cooperation and trust building, establishment of regional institutions and investment in regional infrastructure	**Limited partnerships and lack of coordination** – insufficiently broad partnership or inadequate coordination, where partners have no sufficient capacity or mandate to deal with the problems, insufficient focus on or inability to deal with economic development
Understanding of local context – understanding and taking into account specificity of the local situation, high level of insight and closeness to issues and beneficiaries	**Fragmentation** – local approaches leading to fragmented thinking and realization, partial solutions and duplications

Strengths	Limitations
Involvement of local people – local empowerment, building of human capital, local people as agent of change	**Lack of focus** – dealing with a broad range of issues superficially leading to a lack of concentration on key problems and results
Enhancement of local democracy – promotion of integration, inclusiveness and non-discrimination through the involvement of the entire community rather than specific group, promotion of participation and transparency, avoiding stigmatization and mentality issue, reduction of perception of social inequality	**Visibility trap** – concentration on the most visible and easy-to-implement activities instead of promoting systemic change
Support to local governance – promoting subsidiary and decentralization, training local administration, supporting institutional development and organizational reform leading to increased effectiveness	**Dependency** – developing dependency on external support, often lack of well-planned exit strategy, government reliance on external support leading to lack of involvement and support, preferential treatment for some areas
Manageability and flexibility – focus on manageable size allowing for integrated, comprehensive approach, keeping program relevant in changing context	**Capacity substitution** – reducing urgency of systemic change, substituting for inefficiency of sector-level policies, insufficient institutional capacity or budgetary support
Improved monitoring and cost-efficiency – better monitoring of results and reflection of lessons learned, improved cost-efficiency through coherent approach avoiding duplications and addressing real needs	**Donor-driven and short-term approach** – interventions often donor-driven with high expectations and short timeline where conflict context and special development situation requiring longer time frame to generate systemic change

Source: Vrbensky (2008)

Area Selection and Delineation

As discussed in the ABD approach literature (Harfst, 2006), the target area must be characterized by a certain degree of uniformity in terms of development problems and challenges. In the case of the Drina Valley – Tara Mountain target area in the Western Balkans, this uniformity was sought not only in terms of the rural, cross-border, peripheral (from an economic activity perspective), cultural (common language and traditions), post-conflict and relational (previously existing but since the split of Yugoslavia often dormant relations between the 14 municipalities involved) settings, but also in terms of inter-sectorial linkages (tourism-based potential related to local natural resources and agricultural production). In addition, other concerns and interests were the Drina River and its tributaries along which activities related to transport, hydro-electric power, tourism and agriculture were seen as pivotal for the potential of the region.

Nonetheless, a caveat of the case study target area delineation is that some municipalities just adjacent to the 14 selected municipalities also share their basic development problems (e.g. Novo Gorazde, Cajnice, Foca; Zabljak, Pluzine; Nova Varos), but were not included. In the present ABD implementation, their exclusion was mainly based on the fact that a larger number of municipalities would make close and regular contact more difficult and the organization of a stakeholder group and community surveys more time and resource consuming for the project. In other approaches such as Leader, areas covered by LAGs (Local Action Groups), are smaller

(i.e. 10 to 100 000 inhabitants), largely based on the same principle. Although these are valid arguments from an ABD practical/managerial point of view (also since the cross-border nature of the target area posed a priori administrative difficulties) they are less well-grounded from an ABD theoretical point of view.

To overcome this obstacle, literature review was useful in identifying a common development situation and set of constraints. However, field visits and feedback from local experts was also be sought when deciding on the final delineation. The latter served to identify stronger linkages between the 14 selected municipalities in comparison to the excluded set of municipalities. The latter implies that the views of stakeholders and the experiences and interrelations of populations in the potential target area must be taken into consideration; thus requiring that the participation process is activated even before the target area is fully delineated. This certainly complicates the decision of area selection, for if local actors are contacted and later excluded or if those joining later consider themselves outsiders, the entire process may also be jeopardized. In this respect an informal exploratory research in the field and an accurate selection of key local experts to inform on the intensity of existing socio-economic linkages are considered an appropriate initial step.

Participatory Mechanisms

Several participatory instruments and processes were established and utilized to support the implementation of the ABD program in the Drina Valley –Tara Mountain target area. The key objective of these participatory mechanisms and activities was to create the basis for a multi-stakeholder approach to local development. A secondary objective of the participatory mechanisms was also to obtain valuable complementary information for the identification of development needs. The key participatory mechanisms for this project were based on the involvement of:

- stakeholder group (SG) members
- Delphi group (DG) members
- a sample of community representatives, through questionnaire-based surveys and sharing of results with the general public.

The consolidation of the stakeholder and Delphi groups allowed strengthening the commitment of local and national actors to the ABD initiative in the Drina-Tara target area. Surveys were of strategic relevance to both raise awareness on the ABD initiative and secure valuable information with which to contrast the analysis performed by both the SG and DG. Next, these participatory tools are described along with an explanation of how they assisted in addressing specific constraints of the target area.

Stakeholder group (SG): a bottom-up approach based on inputs from selected stakeholders

The main tasks of the SG were to acknowledge and discuss the baseline development situation, as well as to identify common development needs and priority interventions (along with expected outcomes and correspondent actions), that is to support the area-based development approach in the region with their local knowledge and experience. Three members from each of the 14 project municipalities were invited to take part and a key

challenge in this stage was not only to secure participation but to have a wide representation of the target area society. In other words, not only local authorities but representatives from all relevant areas of the private sector as well as major players within the civil society organizations, including top player NGOs had to be invited. The challenge was to be inclusive without reaching a too large number of stakeholder group members, which would have made consensus too costly to achieve regarding time, or too vague in its development of action proposals.

All municipalities delegated one public senior staff member of their choice to participate in the SG. In order to identify representatives of the civil society and business sectors, criteria were established: participants were bound not only by structural characteristics (such as age, gender, sectorial distribution, geographic and cultural background, etc.) which would allow for a balanced sample of members, but also by the individual's ability or capacity to express and defend his or her own point of view. The latter basically was aimed at preventing shortcomings already identified in other participatory processes where it was said that the 'wealthier, older men … appropriate new participatory spaces' (BCID, 2007). In other words, representatives selected to the SG had to be opinion leaders (or 'loud mouths') within their segments and also comply with basic traits so that the mixed group of SG members could represent the diverse interests of the target area. For the identification process of SG members, local coordinators of the Drina-Tara ABD project relied on their pre-established network as well as on the information gained during field visits to the different municipalities. Clearly, this implied that the selection process was far from following a democratic procedure, thus subject to some of the disadvantages related to 'selective participation' as defined by Botes and van Rensburg (2000) yet given the nature of the debate, the participants' background ensured that members would be proactive in their contributions and highly motivated to discuss complex development strategies and issues.

Ultimately, a simple three-sector view on the SG composition was embraced, a notion based on the good practice identified in Leader partnerships with a balanced representation of each category of stakeholders (OÏR, 2006). The latter implied a substantial improvement of ABD programs; particularly compared to those previously implemented in the Western Balkans region (see Harfst 2006 for a list) where a strong focus was placed on local governments and therefore not systematically integrating the views from other social segments. The good practice adopted from the Leader experience concerning the composition of public-private partnerships proved to be very useful. By putting the business sector and NGOs together with municipal authority representatives, it was ensured that priorities that were relevant for the society as a whole could be more easily identified (i.e. conforming to the *bottom-up* perspective of ABD) while also promoting public-private partnerships to emerge.

Still, there are important points to consider in this organizational practice. On the one hand, it was absolutely necessary to maintain an animation/coordination team that was efficient and skilful in their networking of the area as it was their challenge to identify, invite and stimulate SG members. Their work ensured that in the SG a sense of social cohesion and inclusiveness could emerge despite bringing together individuals from

different backgrounds. Their role helped to establish a sense of ownership. The 'cross-border 'composition of this animation team was also a critical asset since it contributed to overcome sensitive issues arising from the interactions between heterogeneous groups of participants[11]. Clearly, not only constant dedication but inside knowledge, information organization skills and understanding of the socio-political context are a *sine qua non* for any participatory approach coordination team.

On the other hand, despite aiming at consolidating a not very large SG, the diversity of SG members implied that it was not always straightforward to reach consensus, particularly when it was necessary to refine action plans. The SG prepared a list of development measures or projects that lacked the degree of specificity and strategic purpose which could secure external funding. The latter suggests that technical assistance is also necessary to improve the end result. However, In the case of the Drina-Tara experience, the issue seemed not to be a need of more resources for training of stakeholders (who repeatedly said they had received enough training and externally driven strategy drafting), but the necessity of providing stakeholders with enough time to apply analytical tools (i.e. tree analysis, SWOT analyses, etc.), agree on strategies and further refine their action plans and subsequent implementation time frames. If over-training is to be avoided, it needs to be ensured that stakeholders possess the relevant skills to intervene and put forward the key challenges affecting their specific sector, while also being able to establish linkages and find innovative solutions. Again, this requires an effective SG selection mechanism, as well as substantial engagement of resources in terms of skilled personnel in the animation team and more time for the implementation of participatory approaches. In any case, even with skilled animators and well-informed stakeholders, participatory processes require sufficient time for involving stakeholders, for debating, for building trust (particularly in cross-border, post-conflict settings) and creating ownership of the process.

Since the ABD methodology lacks an institutional follow-up component, experiences from the European Territorial Cooperation field (such as institutional aspects of Interreg and other regional policy programs) were taken into account to inspire stakeholders. Clearly, the promotion of ABD and most *bottom-up* approaches rely on donor support. Logically, each donor has its own procedures and follows different methods depending on their need to justify their use of resources to their authorities and citizens. This does not necessarily fit with results from participatory exercises. However, one way forward is for stakeholder representatives to bring forward well-defined development project proposals. Still, the absence of strong long- or medium-term stable perspectives for financing as well as the probability that financial counterparts will express their own priorities, weakens the overall process of ABD programming, in particular the most detailed parts (concrete action plan and their output monitoring).

To overcome these issues, the 14 municipalities of the Drina-Tara area entered into an informal but permanent commitment in the form of a cross-border Drina-Tara Network

[11] For example, in the Drina-Tara experience, local coordinators had to ensure that the local language was not defined as 'Serb', 'Bosnian' or 'Montenegrin'.

supported by a Memorandum of Understanding. Stakeholders from the Civil Society Organizations (CSO) and private sector also expressed their wish to continue collaborating under the format of an informal network. Lastly, the Standing Working Group-Regional Rrural Development (SWG RRD)[12] offered to serve as an institutional umbrella to facilitate funding (mainly under the IPA CBC components) and promote the execution of the different action plans envisaged in the ABD program of the Drina-Tara area. The Network thus has a local component (SG), contacts at the national level (with links to the three countries involved), and access to the international community with the help of SWG-RRD. Their objective is to push forward the identified development initiatives that have been promoted and seek funding.

Delphi group (DG): linking top-down and bottom-up approaches

One of the main challenges of the ABD and other *bottom-up* approaches is to fit locally developed initiatives with the macro-situation (e.g. higher-level institutions, national level policies, national and international markets). Given the need to ensure a proper link with *top-down* national policies, the establishment of a group of experts familiar with national policies and an international perspective to local problems was considered not only valuable but of strategic relevance. The so-called Delphi group (DG) was therefore consolidated with the aim of providing a 'helicopter view' that combined oversight and insight in terms of: (i) helping to identify the core issues for a *bottom-up* approach to local development, that is, opportunities and challenges, and (ii) harmonising the project's objectives and development activities with the wider regional/national development programs of all participating countries, as well as international challenges in the wider Western Balkans region. The main idea was to facilitate the introduction of a *top-down* perspective, so that an adequate synergy between the *bottom-up* and *top-down* perspectives could be ensured and the ABD intervention's potential of success could be increased as a consequence.

The DG had 11 members, of which four represented national authorities (relevant ministries for rural development aspects), five came from academia, and two were experts in fields related to regional economics, agriculture and sustainable development. It was expected that their first-hand knowledge on national strategies, academic findings and the situation of the rural areas in their countries would be a determining factor in the evolution of the project. In addition, it was expected that the working areas of the experts filled gaps in the local actors' experience. Their ability to understand the context- and area-specific obstacles informed SG discussions via written reports which were reviewed by the coordination team in order to avoid direct interference and any paternalistic approaches or censorship of *bottom-up* initiatives emerging from SG discussions.

The DG did not meet physically but was intended to meet for regular interaction via email and/or through a web-based platform. However, there were difficulties in securing timely

[12] SWG RRD is an International Intergovernmental Organization, consisted of governmental institutions responsible for rural development in respective countries and territories of South Eastern Europe

feedback and effective participation from the international and national group of experts. Although the contributions of the Delphi group helped to address conflicting priorities (e.g. hydro-electricity national priorities versus agriculture, and tourism versus agriculture), the processing of their reports implied substantial workload to the coordination team who also had to disseminate results to stakeholders. Moreover, in certain cases, different experts expressed opposing opinions (e.g. perception of the importance/appropriateness of organic production and related actions). Likewise it was difficult to avoid a certain degree of paternalism, which can lead to mistrust from local stakeholders. It is highly probable that, as in stakeholder interaction and consultation, national authorities and development experts from the DG also required more time to evaluate and propose measures as well as stronger coordination efforts from the team were needed so that the DG output could further support SG debates. Overall, the exercise has also proved that, despite all the genuine efforts, information (on programs, strategies etc. adopted at national or regional level) does not flow easily down to the field and stakeholders, and more time should be devoted to the harmonization of inputs between DG and SG members. In future experiences it is recommended to devote more resources to securing timely feedback from external development experts and general access to national strategy documents.

Questionnaire-based surveys: data collection and its external analysis to support bottom-up processes

Two questionnaire-based surveys supported the ABD program development in the Drina-Tara target region. The first one was held with the objective of gaining a general understanding of the development situation as perceived by a wider audience**.** Open questions were prepared in order to assess what were the most pressing development needs as perceived by 'the average citizen'**.** The open questions aimed also at collecting some qualitative information in order to have a clearer picture of the socio-economic situation at the local level, considering the lack of data. The results were thus particularly useful to the discussions of SG members when deciding on key priority areas. A second questionnaire was launched in order to assess whether the identified priorities and action plans of the SG were compatible and acceptable to a larger group of multi-sector representatives from the target area. In contrast to the first questionnaire which aimed at collecting the opinions of the public on the priorities regarding local development, the second questionnaire focused on receiving an institutional and expertise feedback from the organizations that were in charge of addressing the priorities identified by the SG. In general, the use of community surveys proved useful to understand the opinion of the general public, thus broadening the input of selected stakeholders but also to obtain additional information on the development situation of the target area.

Another activity undertaken in the target area referred to sharing not only the results of the community surveys with the general public but also inform of the tasks and objectives achieved by the group of stakeholders from the 14 different municipalities. The latter proved on one hand to strengthen the sense of a rural cross border community while also advertising the development initiatives and opening the doors to other interested parties in the target area. To summarize, the promotion of additional participatory events such as

community surveys or open meetings are rather useful in integrating the information from different sources, in double checking whether the target community in fact shared the analyses of the SG , and in complementing the baseline assessment of the development situation in the Drina-Tara area.

Conclusions and Recommendations

The present case study has provided insights on how to adapt the ABD approach to the context of rural, post-conflict and cross-border areas. The paper has focused on the specific participatory mechanisms which were adjusted in order to address context-specific challenges and potentially increase success rates in similar target areas. Improvements were related to data collection processes (via community survey and local expert knowledge), introduction of a diverse group of stakeholders who held dynamic participatory events, and the indirect connection to local/international experts (which included government officials) in order to promote synergies between local, national and international actions.

Specifically, the implementation of an ABD in the Drina Tara context included:

- promotion and coordination of the interaction between different administrative levels (intra-municipality, inter-municipality and cross-border), and between actors from the civil society, public and private sectors, to ensure unbiased participation;
- establishment of a sense of cross-border community and effective participation of key stakeholders in the elaboration of a development strategy and action plan in order to genuinely focus on the needs and priorities of the community;
- introduction of efficient linkages between *bottom-up* and *top-down* initiatives, to guarantee coherence with the macro-situation;
- creation of medium- to long-term organizational mechanisms, to ensure sustainability of the project outcomes as the coordination/animation team abandoned the target area (exit strategy).

A series of recommendations arise from the implementation of the ABD approach in a rural, post-conflict and cross border target area:

(i) the *area delineation* process needs careful consideration in order to cover all similar sub-regions in terms of development problematic without reaching a size where a participatory process would be impossible to implement, nor excluding key players;
(ii) the *bottom-up process* and its momentum – guidance should be offered to people involved in this process so that they understand the nature of their roles and how they are inter-related. Development proposals should be prepared in detail for which technical assistance and sufficient time are required. Although under the ABD approach proposals (related to major changes in legal frameworks or border/custom/trade laws) which cannot be addressed at the area level are expected to be excluded from the analyses, stakeholders should not refrain from expressing clearly their needs in these issues and should be sufficiently motivated in order to continue interacting after the official end of

the ABD intervention so that these matters may be referred to higher political-administrative levels;

(iii) the *top-down* accompanying framework of the participatory process must be openly discussed. Information flows should be improved and one way to do so is to put further support and coordination efforts in the well-functioning of DG members, possibly with an increase in the physical interaction with local level stakeholders.

(iv) the *institutional and legal framework* needed to ensure the sustainability of a cross-border approach of this kind should be reinforced.

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Review Article

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TAX POLICY IN SERBIAN AGRICULTURE[1]

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Abstract

In paper was analysed tax policy in agriculture of Serbia. Tax policy was observed through the current legal framework, as like: Individual Income Tax Law and Corporate Profit Tax Law. Special attention was paid to the Value Added Tax Law, primarily from the aspect of family agricultural husbandries, as from the stand point of the rules that were valid under the old VAT Law, as well as based on last amendments and supplements adopted at the end of 2012. Mentioned approach of VAT studying is leaned on fact that it represents modern form of tax applicable in field of consumption. It was implemented primarily to facilitate the reduction of the grey economy, to harmonize national tax policy with European Union (EU) standards, as well as to increase tax collection.

Key words: *tax policy, agriculture, VAT Law.*

JEL: *Q18, H25*

Introduction

Agriculture in Serbia carries an imperative of economy sector with strategic importance. Although has on disposal satisfactory production potentials, it is usually limited by tinge of extensiveness and doing everything, atomized estates, low yields with changeable quality, outdated technology, bad production structure, etc. On the other hand, the concentration of large number of stakeholders in agriculture and expressed surplus in foreign trade should have relatively big fiscal impact on the replenishment of republic budget.

However, the purpose of taxation is not only the collection of tax revenue, but also the realization of some non-fiscal issues, i.e., the state aims to achieve by fiscal policy a range of economic, political and social goals (Milosevic, Kulić, 2011; Božić et al., 2011).

For a long time, in Serbia has existed an effort for joining to the European Union (EU) in close future. According to that, competent state authorities carry out monitoring, application

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and adjustment of national to the EU legislation. Integral parts of mentioned striving are the measures taken in tax policy that are related to agriculture. Measures are focused to the giving of certain exemptions that would enable more successful work of agriculturalists, and they are directed towards the registration of family agricultural husbandries, providing of short-term and long-term loans, as well as the establishment of a system of direct payments to farmers dedicated accounts.

Through a range of system laws and regulations the Serbian government attempted to eliminate decades-long omissions in agriculture, which effects recently are increased by the global economic crisis, primarily from the standpoint that agriculture is an economy branch from which is expected quite a lot. Attempted changes also considered satisfactory tax policy. Within the European Union is established a set of directives about harmonization of Value Added Tax (VAT). In this way, common stances are defined in terms of territory, object of taxation, persons - taxpayers, tax base, number of rates, minimal height of tax rate, types of exemptions, deductions, special procedures in taxation and tax liabilities of the taxpayers. Directive 2006/112/EC is considered as primary directive for the VAT harmonization.[3]

The main characteristic of the tax harmonization within the EU is that it supports the principles of the internal market, free movement of people, goods, services and capital. Also, significant feature of tax harmonization is that it involves a high level of tolerance, accepting the differences of certain Member States as deviations from the common stances, but in a way that mentioned deviations has become solutions of adjustment (Hrustić, 2012).

Data sources and Methodology

The research subject of the authors was the analysis of the tax policy in Serbian agriculture. Analysis was focused on next tax policies: Corporate Profit Tax Law, Individual Income Tax Law and Value Added Tax Law. The goal of research was to determine the current state of agricultural tax policy, before all from the aspect of family agricultural husbandries, as well as to suggest eventual directives that will be in function of realization, primarily, non-fiscal aims of fiscal policy (economic and social context of development of agriculture). Used method was desktop study analysis that respects available scientific and professional literature and database.

Income taxes

Tax policy is an integral part of the economic policy taken by some country in way of its own development. Naturally, it has to be fair and incentives for taxpayers, or to encourage production and safety of producers.

In Serbian agriculture, in terms of achieved incomes, taxpayers are as natural persons (agriculturalists), as well as legal persons (companies and cooperatives). Until 2005

[3] Council Directive 2006/112/EC of 28th November, 2006 on the common system of value added tax, Official Journal L 347 of 11.12.2006.

agricultural producers were paid taxes according to Individual Income Tax Law[4], while the fiscal obligations of legal persons are defined by the Corporate Profit Tax Law.[5]

Since 1990, the tax base that was paid by agricultural producers was embodied in cadastral income or real income. Cadastral income is determined by cadastre (public institution) for all land that could be used for agricultural production or forestry, whether is used for this purpose.[6]

It included income from plant production and livestock breeding, and it was determined by the scale of cadastral income. As it was taxed a potential income of agricultural husbandry, cadastral income represents just an accounting category, not a real income of certain husbandry. Income from plant production was considered monetary value of the average yield that was achieved per hectare, according to existing structure of crops and seedlings and usual way of soil cultivation, but after deduction of average material cost of production. It was determined for each cadastral culture (productive land is classified into 8 cadastral cultures - plough lands; gardens; orchards; vineyards; meadows; pastures; puddles, reeds and ponds; and forests) and cadastral class of land (within the each culture land is classified by its quality into 8 cadastral classes, where the first indicates the highest quality) within the certain cadastral territory. Income from livestock breeding was not shown separately, but it also includes income from crop production. Calculation was based on the corrected average prices of products used for feeding of current livestock fund in the Republic. Mentioned tax was paid quarterly (in middle of trimester).

Before the beginning of the fiscal year, the taxpayer could commit himself for the determination of real income from agriculture and forestry, where it had to inform about that competent tax authority. In this case by income was considered the real income determined in the manner prescribed by the Law that defines income from self-employment.[7]

The taxpayer of income from agriculture and forestry was natural person who is the owner or holder of the right for land use, or who is a usufructuary of land registered in the land cadastre at the 31st December of the year that preceding the year for which the tax is determined. At long-term lease, land tenant was became the taxpayer starting from the beginning day of the lease, if along with consent of the lessor was submitting the notification to the competent tax authority within fifteen days from the date when the Lease Agreement is signed.[8]

Until last amendments and supplements to the Individual Income Tax Law it used to be in cases when exist two or more co-owners, or co-holders of the right to use the land, that are

[4] Individual Income Tax Law. Official Gazette of RS, no. 135/04.
[5] Corporate Profit Tax Law. Official Gazette of RS, no. 25/01, 80/02, 43/03, 84/04 and 18/10.
[6] Law on Cadastral Income Determination. Official Gazette of SRS, no. 49/92.
[7] Income from agricultural land that is used for extraction of sand and gravel, bricks baking, seedlings production, poultry production by incubator and production of medicinal plants is taxed as real income from self-employment (Božić et al., 2011).
[8] Individual Income Tax Law. Official Gazette of RS, no. 24/01, 80/02, 135/04, 62/06, 65/06, 31/09, 44/09, 18/10, 50/11 and 90/11-US, article 23-25.

living in same household, but who did not finish division of the property, taxpayer could be just one of the adult co-owners. If there was no agreement among the co-owners who will be the taxpayer until the beginning of the year for which the tax is determined, then the taxpayer was announced by competent tax authority.[9]

Also, tax on incomes from agriculture and forestry was not paid on cadastre income in next cases:

- For land where are established embankments, channels, trenches and other objects against floods, for irrigation and drainage, or protection from erosion;
- For land whose use is prohibited by the law;
- For land under the buildings of foreign countries, or which is used as diplomatic and consular facilities;
- For land which use as protected area around monuments of culture and objects of nature;
- For backyards of religious objects, etc.

These exemptions of tax paying were expired in moment when mentioned land changed its use, what taxpayer was required to report to the competent tax authority within the fifteen days after the date of change. On land parcels where come to yields reduction for more than 25% of the average yields achieved in last three years in certain municipality, caused by natural disasters, plant diseases and pests, or other extraordinary events which producer could not stop, taxpayer had the right to ask for tax cuts proportional to the reduction of yields, by submittion of the request to the competent tax authority within the fifteen days after the damage was made.[10]

Also, certain exemptions were related to older farmers (males older than 60 and female older than 55 years), ill and working unable persons, stimulation of production on the husbandries of young farmers and workers who have moved from other branch of economy to agriculture, during the investments in arrangement of land complex (in land parcels consolidation, built of irrigation systems, or conversion of unused land into the land for agricultural production), opportunity to pay taxes in kind (products), etc.

During the period of use of Tax on cadastral income, proportional tax rates were applied. Height of tax rate was subject to change, from minimal 3% in 1990, to 14%, or 10%, according to Law change in 2002 and 2004. After a Law amendments established in 2005, tax on cadastral income was not charged[11], at the beginning only to registered family husbandries, and later to other agricultural husbandries.

By latest amendments and supplements to the Law, for 2012 and 2013[12], are still retains the right that agriculturalists are exempted from paying of tax on incomes from agriculture and

[9] Ibidem, article 28.
[10] Ibidem, article 30.
[11] Law on temporary exemption from taxation of tax on individual income of certain types of income. Official Gazette of RS, no. 5/2009.
[12] Law on Amendments and Supplements to the Individual Income Tax Law. Official Gazette of RS, no. 47/13.

forestry on cadastral income. On that way, legislator wanted to motivate the development and investment in agriculture, as the cadastral income as the basis for the tax determination is very low, so the taxes on that basis had little share within the sum of individual income tax.[13] Established tax exemption has an expressed social dimension, in other words it is in function of maintaince of agriculturalists social status, considering their ownership under atomized estates and conduction of extensive production.

If we have companies in focus, to first changes in Serbian tax policy came after 1990, when for a tax base was taken profit. For newly established companies, as well as newly established cooperative farms, according to article 7. of the Law on corporate income tax and contributions from the company income, was introduced the tax exemption in the first, or reduction of the tax burden in second and third business year.[14]

Legal persons (agricultural companies and cooperatives) pay tax on corporate profit, as all corporate bodies that achieve incomes on the market. Taxed profit is determined by tax balance, while applied tax rate is proportional.[15]

By law regulations, to payment of this tax have been exempted newly established companies in economically underdeveloped municipalities in first three business year. On the other hand, in economically developed municipalities, by reduction of accounted corporate tax, tax relief ranged from 30% to 70% of the calculated tax.

After the last amendments and supplements of mentioned Law this exemption was kept just for underdeveloped territories in case if taxpayer meets next conditions: if he invests in fixed assets more than 8 million RSD; if he uses at least 80% of value of fixed assets for activities of primary business; if in investment period he additionally employs at least five persons (full time job); if at least 80% of part time employees have residence in underdeveloped territory.[16]

Certain discounts exist also for taxpayers in whose business is invested foreign capital, if the share of foreign capital in total capital of the taxpayer is at least 10%. In this case, there is a tax deduction for a period of five years, proportionate to the share of foreign capital within the total capital of taxpayer.

Tax credits (tax reductions) can be given also for the newly established business unit in underdeveloped areas. To taxpayer who invests in real estates, facilities, equipment or biological agents in his own ownership for the organization of primary business activity,

[13] According to last amendments and supplements to the Law, only regulations related to taxation of agriculturalists that are natural persons and holders of registered agricultural husbandries, which take a book keeping obligation, in accordance to article 43, paragraph 2 of mentioned Law, were kept (Individual Income Tax Law. Official Gazette of RS, no. 93/12 and Law on Amendments and Supplements to the Individual Income Tax Law. Official Gazette of RS, no. 47/13, article 18.).

[14] Law on Corporate Income Tax and Contributions from the Company Income. Official Gazette of SRS, no. 35/90, pg. 1317-1319.

[15] Law on Tax of Corporations Profit. Official Gazette of RS, no. 43/94.

[16] Corporate Profit Tax Law, Official Gazette of the RS, no. 25/01, 80/02, 43/03, 84/04 and 18/10, article 50 b.

or activity recorded in the founding act (or noted in some other act of the taxpayer, which determines his activities), is entitled a tax credit of 20% of the realized investment, except it can not be higher than 50% of calculated tax for the year in which the investment was made. Also, relating to this view, to taxpayer who is according to Law on Accounting and Auditing classified as a small legal entity, is entitled to a tax credit of 40% of the investments realized in fixed assets used in primary business activity, except it can not be higher than 70% of calculated tax for the year in which the investment was made.

According to article 48a of the Corporate Profit Tax Law, to agricultural companies, as taxpayers, is allowed a tax credit in amount of 80% of the investment made in current year in fixed assets in their own ownership used for primary activities. Tax credit is allowed without limitations regarding to calculated tax in the year when investment was made, as well as in next 10 years, in which part of unused tax credit can be transferred.[17] By the Law on amendments and supplements to the corporate profit tax law[18] were erased regulations of Article 48a, so mentioned tax credit will be not applied during the determination, calculation and paying of tax liability in 2013.

In order to stimulate balanced development of agricultural branches, as well as rural territories where are organized specified agricultural activities, there are real needs for establishment of tax reliefs for a certain level of commodity production in highland area, or for growing of certain number of cattle per hectare of agricultural land. Also, in order to create conditions for a broader application of innovations and modernization of agriculture, it should be introduced a tax exemptions for those husbandries and legal entities that implement innovations within their production activity. Of course by adequate use of tax policy should be influenced on strengthening of specialization level in agricultural production, in other words on prevalence, development and strengthening of those lines of agricultural production for which Serbia evidently possess comparative advantages in relation to surrounding, or for those which in large percent contribute to ensuring of food security.

Legal entities in agriculture and food industry, especially small and medium enterprises and cooperative farms, beside non-stimulative tax policy, are usually faced during the realization of their products on market with disloyal (business activity of large number of market subjects within the zone of grey economy) and undeveloped competition (presence of oligopsony market situation in which as they are small, divided and with small negotiating power, is very difficult to achieve favourable sales conditions). Previous facts derive from institutionally underdeveloped and by allocation inefficient market of agricultural products, which does not provide strong and healthy competition, as well as does not ensure maximal benefits to producers, consumers and complete economy and society (Paraušić et al., 2010).

[17] Ibidem, article 47, 48 and 48a.

[18] Law on Amendments and Supplements to the Corporate Profit Tax Law. Official Gazette of RS, no. 47/13.

Besides mentioned, development of agricultural companies are limited by many systemic problems within the non-stimulative business ambience, as are[19]: high labour burdens (height of taxes and contributions on gross wages, number of local communal taxes, etc.); unfavourable bank conditions within the credit lines for agriculture; insufficient support of agrarian budget directed to subsidizing of primary agricultural production and processing of agricultural products. Therefore, for their further development would be very significant additional incentives in the area of tax policy, as well as establishment of stimulating Labour Law which will reduce the impact of the grey economy.

On other hand, fiscal potential of agriculture can be also estimated through the available data from the last census of agriculture, where in Serbia currently exist 631.122 agricultural husbandries[20] (*Table 1.*), among which have dominated family agricultural husbandries[21].

Table 1. Category and number of agricultural husbandries in the Republic of Serbia

Agricultural husbandries		
Family agricultural husbandries	**Husbandries of legal entities and entrepreneurs**	**Total**
628.555	2.567	631.122

Source: *Census of Agriculture 2012 in the Republic of Serbia – First results*. Statistical Office of the Republic of Serbia, Belgrade, Republic of Serbia, 2013.

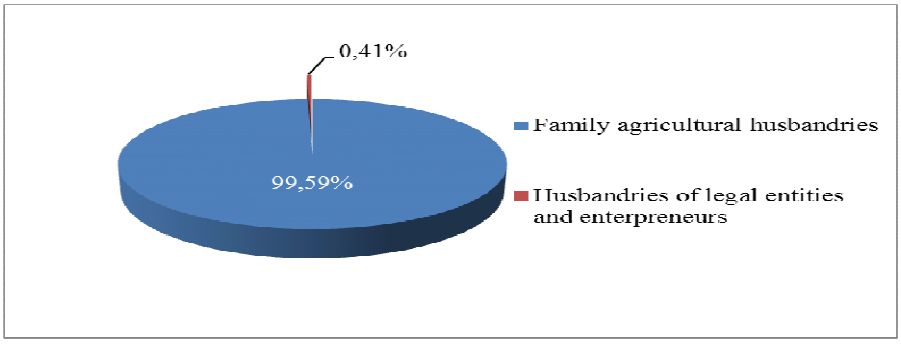
Structure of agricultural husbandries in the Republic of Serbia is presented by the next graph (*Graph 1.*).

[19] Conditions and Burdens on Doing Business and Collective Bargaining, brochure of Serbian Association of Employers, Belgrade, September 2010.

[20] An agricultural husbandry is defined as a technically and economically independent production unit that has integral management, and where company, agricultural cooperative, institution or other legal entity, entrepreneur or family agricultural husbandry does agricultural production as primary or secondary activity (Source: Census of Agriculture 2012 in the Republic of Serbia – First results. Statistical Office of the Republic of Serbia, Belgrade, Republic of Serbia, 2013).

[21] Family agricultural husbandry considers every family or any other community of persons (or individual) who live together and commonly spend their incomes for covering of basic needs, whose members (one or more) are involved in agricultural production (as primary or secondary activity) whether they produce for the market or not, commonly use means of production (land, machines, equipment, buildings) and work of their members, whose holder is a natural person, which at same time cultivates certain areas of agricultural land, or breeds certain number of heads of large and small cattle, poultry, or bee societies (Source: Census of Agriculture 2012 in the Republic of Serbia – First results. Statistical Office of the Republic of Serbia, Belgrade, Republic of Serbia, 2013).

Graph 1. Structure of agricultural husbandries in the Republic of Serbia



Source: *Census of Agriculture 2012 in the Republic of Serbia – First results*. Statistical Office of the Republic of Serbia, Belgrade, Republic of Serbia, 2013.

Also, the Ministry of Finance of the Republic of Serbia (Treasury) states that on 31st March 2013 in Serbia were registered 469.411 agricultural husbandries (*Table 2.*), primarily located in Central Serbia.

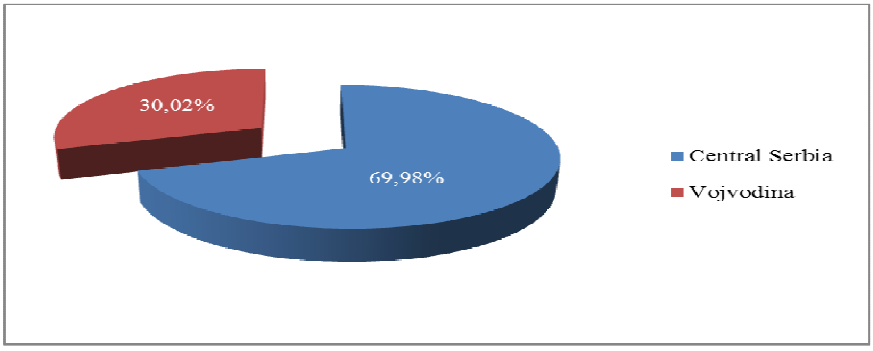
Table 2. Number of registered agricultural husbandries in the Republic of Serbia (on 31st March 2013)

Agricultural husbandries enrolled in Register		
Central Serbia	**Vojvodina**	**Total**
328.475	140.936	469.411

Source: http://www.agrarije.com/node/643

Territorial structure of registered agricultural husbandries in the Republic of Serbia is presented by the next graph (*Graph 2.*).

Graph 2. Territorial structure of registered agricultural husbandries in the Republic of Serbia



Source: http://www.agrarije.com/node/643

It should be noted that the renewal of registration has to be done every year, and that members of the same husbandry can not have separate, but only one registered family agricultural husbandry.[22] In case when family members have registered separate

[22] http://www.trezor.gov.rs

husbandries, passive status for all husbandries will be determined. During the in the process of registration, or renewal of registration, holder of agricultural husbandry gives statement whether his husbandry is commercial or not.

Despite the fact that in the Republic of Serbia registered agricultural husbandries in VAT system have growing importance, momentarily are not available in public data about their number. Current estimations drive to the conclusion that their number is still relatively small (for example, at the end of 2009, according to the Treasury, on the territory of the Žabalj municipality were registered 2.679 agricultural husbandries, where by estimation in VAT system are only 20, what is barely 0,75% of the total number of registered agricultural husbandries within the mentioned municipality)[23].

VAT Law from an aspect of family agricultural husbandries before establishment of amendments and supplements

Value Added Tax (VAT) represents general tax related with consumption. It is applied in 130 countries, and popularly is named as the European Union tax, as it represents one of the conditions for EU accession (Tica et al., 2011). Serbia is one of the last European countries which were implemented VAT, precisely on 1st January 2005. Established VAT[24] is harmonized to European standards, in other words with VI directive of EU on the common system of VAT for all Member States. VAT specificities are reflected in existence of special regimes of taxation.[25] In case of agriculture, payers of the Individual Income Tax related to incomes from agriculture and forestry are usually out of VAT system, as they are not achieving annual turnover higher than 4 million RSD (Božić et al., 2011).

Agricultural producers are entitled on compensation towards paid VAT under the terms and in way determined by law. Farmer is in position to decide about taking of obligation for VAT paying until 15th January of current year, by submitting a notification to the competent tax authority on the territory where he resides, if in previous 12 months was achieved a total income from realization of agricultural and forestry products and agricultural services in amount higher than 4 million RSD.

There are three cases of the right for the VAT compensation, that farmer can realize, as like:

- If agricultural producer is registered as a VAT payer and he does business activities with a person who is also a VAT payer, then he has all the rights and obligations as other taxpayers of this type of tax;

[23] http://www.zabalj.rs/index.php?option=com_content&view=article&id=93&Itemid=110&lang=sr-yu

[24] Calculation and paying of VAT has to be done in all phases of production-realization cycle, as well as during the import of goods. Subject to tax are delivered and imported goods and services of taxpayer. VAT burdens just turnover directed to final consumption (not a products purchased for execution of business activities). So, VAT payer in accounting period calculates VAT on his deliveries of goods and services, and after that subtracts the value of paid VAT of received goods and services.

[25] VI directive of EU assumes next four special cases of taxation, what is harmonized with established Value Added Tax Law in Serbia: small taxpayers (entrepreneurs); agricultural producers; tourist agencies; and turnover of legal goods, pieces of art, collectible goods and antiques.

- If agriculturalists is not registered as VAT taxpayer, and have a business with person who is VAT payer, after delivery of agricultural and forestry products, or after realization of agricultural services, he has the right on compensation for realized goods or services in amount of 5% of value that VAT taxpayer has paid to agriculturalist.[26] The purpose of introduction of VAT of 5% is to bring an agricultural producer which is out of VAT system in approximately the same position with the VAT payers that are selling goods and services. VAT compensation has to compensate approximately amount of VAT that agricultural producers were paid during the purchase of goods and services, and for which they do not have the right on deduction of previous tax[27], because they are not in VAT system[28] (*Table 3.*);
- In the third case, when agricultural producer is not registered as a VAT payer and he makes business activities with a person who also is not VAT taxpayer, during the sales of agricultural and forest products, as well as provision of his services, he does not calculate and pay VAT.

Table 3. Obligations and rights of family agricultural husbandries according to different status in VAT system

Element	Taxpayer in VAT system	Taxpayer out of VAT system
Way of inclusion	- Mandatory entry (total turnover higher than 4 million RSD) - Voluntary entry (at least 2 years)	***
Output VAT	- When selling its own products and services calculates and pays VAT	- When selling its own products and services does not calculate and pay VAT
Return of entrant VAT	- If value of previously paid VAT is higher than amount of tax liability, it has right to refund the difference	- Does not refund entrant VAT, but it has right on VAT compensation if turnover of agricultural and forest products or agricultural services was made
Mandatory records	- Bookkeeping is mandatory - Keep a book of received and issued receipts - Submit tax return	- Records are not required

Source: *Value Added Tax Law*. Official Gazette of RS, no. 84/04, 86/04, 61/05 and 61/07.

[26] Value Added Tax Law. Official Gazette of RS, no. 84/04, 86/04, 61/05 and 61/07, article 34.

[27] Previous tax is an amount of VAT that taxpayer has been already paid during the purchase of certain goods (service). It can be deducted from the total amount of VAT, if previously purchased goods, equipment or commercial property are used for primary activity of taxpayer, or if its products and services are sold on international market. If amount of previously paid VAT is higher than the established tax liability, surplus will be transferred as tax credit in next accounting period, or its return can be demanded.

[28] PDV priručnik za primenu propisa o porezu na dodatu vrednost. Savez računovođa i revizora Srbije, Računovodstvo, Beograd 2007, str. 342.

Value Added Tax per special tax rate of 8% is used during the selling or import of agricultural products intended for human consumption, such as: live animals, fish, meat, eggs, edible animal fats, honey, milk and dairy products, fresh and chilled fruit and vegetables, cereals, flour, fresh and frozen bakery products, edible oils and vegetable fats, sugar, etc. (*Table 4.*).

It is interesting that for the companies active in the field of agriculture, exists legal obligation to keep accounting records, while family agricultural husbandries do not have such requirement. Also, as a great part of family farms is not registered within the national database, there is very poor data about their business (Njegovan, Nastić, 2011).

Table 4. VAT rates for the products and services related to agriculture

Products and services related to agriculture	Tax rates since 2005.	Tax rates since 2012.
- Agricultural machines and equipment - Building material and services - Serving drinks (in agro tourism on husbandries too) - Wrapping material	18%	20%
- Products for human consumption and drinks except alcohol - Products for animal nutrition - Live animals - Seed and seedlings for agricultural production - Fertilizers and pesticides - Veterinary medicines	5%	8%
- Services for agriculture, forestry and fishery - Veterinary services for livestock breeding and fishery	18%	20%
- Export	0%	0%
- Insurance - Sale and lease of agricultural and forestry land	Without VAT	Without VAT[29]

Source: *Value Added Tax Law.* Official Gazette of RS, no. 84/04, 86/04, 61/05 and 61/07, article 34; *Law on Amendments and Supplements to the Value Added Tax Law.* Official Gazette of RS, no. 93/12.

Also, reduced the tax burden occurs in case of purchase of live animals, animal feed, veterinary drugs, fertilizers and pesticides, seeds for reproduction and seedlings, breeding livestock, etc.[30]

VAT Law from an aspect of family agricultural husbandries after establishment of amendments and supplements

Recent amendments to the VAT Law were made in September 2012[31]. They assume that agricultural producers, as natural persons, that are holders or members of the family agricultural husbandry registered in Register of agricultural husbandries in accordance

[29] Law on Amendments and Supplements to the Value Added Tax Law. Official Gazette of RS, no. 93/12.
[30] Value Added Tax Law. Official Gazette of RS, no. 84/04, 86/04, 61/05 and 61/07, article 23.
[31] Law on Amendments and Supplements to the Value Added Tax Law. Official Gazette of RS, no. 93/12.

with the regulation on farm registration, are taxpayers of the Individual Income Tax (incomes from agriculture and forestry) based on cadastral income.

Agricultural producer, whose total turnover of goods and services in previous 12 months did not exceed 8 million RSD, does not calculate VAT for the realized turnover, does not have right to show VAT in his accounts, does not have right on deductions of previous (input) tax and is not required to keep records prescribed by this Law.

Very important amendment is that small taxpayer (agricultural producer), at any time during the year (not only until January 15th of the current year) may choose to pay VAT by submitting of prescribed registration form to the competent tax authority, and in this case obligation for VAT paying lasts for at least two years. After expiration of two years, farmer may at any time (not only until January 15th of the current year) to submit request for termination of the VAT obligation.

One more innovation that relates to agriculturalist is introduced. That is a regulation of the VAT Law (Article 51a), which prescribes that the taxpayer is required to submit to the competent tax authority, along with tax return, a notification about agriculturalist who is not registered for VAT liability, and who was sold to him in previous 12 months agricultural and forest products and agricultural services in amount higher than one million RSD. Notification has to be submitted together with the tax return for the taxation period in which agricultural producer was realized to the taxpayer purchase in certain amount. Notification must include information on the title, name and surname, as well as address and TIN of agricultural producers.

Amendments to the Law were made with postponed validity period, as follows[32]:

a) Changes that came into force on 1st October 2012 are relating to article 34 (paragraph 3) of previous Law, which now becomes article 26, and which refers to VAT compensation. Instead of former 5%, compensation is now calculated in the amount of 8% of the value of sold agricultural products to all farmers who are out the VAT system. Buyer of agricultural products (cooperative farm, purchaser) is required to issue a receipt where is accounted VAT compensation, as well as to pay the mentioned compensation to the farmers on their current account.
b) Changes that came into force on 1st January 2013 are relating primarily to the total turnover of goods and services (limit) that agricultural producers were made in previous 12 months. If this turnover exceeds 8 million RSD, farmers are obliged to enter into the VAT system.

Conclusion

According to the preponderance of the social aspect within fiscal policy in agriculture, which led to the termination of the taxation of by agriculturalists achieved cadastral income, and the fact that most of agriculturalists can not reach the limit of 8 million RSD which will

[32] Ibidem. Law started to be in use from 1st January 2013, except regulations of the article 15., article 26. (paragraph 2.) and article 45., which were used from 1st October 2012, or article 32., that was used from 31st December 2012.

qualify them for enrolment into the VAT system, tax treatment of agricultural husbandries usually includes tax on properties and certain contributions and self-contributions.

In line with this, the implementation of Value Added Tax in most cases is limited to the calculation and payment of VAT reimbursement in the amount of 8% by the taxpayers in the VAT system during the purchase of agricultural and forestry products, or during the receiving of services from the agriculturalists. On the other hand, agricultural producer may choose a voluntary entry into the VAT system or on the basis of annual turnover gain legal obligation to enter into it (Tica et al., 2008).

During the previous application of the VAT Law, it has been shown that there is a need for certain changes in order to allow the small taxpayer (agricultural producer) to choose at any time during the year to start paying VAT by submitting the prescribed registration form to the competent tax authority. In this case, the obligation to pay VAT lasts at least two years. After the expiration of two years, agriculturalist may apply at any time to the competent tax authority for termination of the obligation for VAT payment. By this change is enabled easier access of farmers to the VAT system, as they could use all benefits of this system during carrying out of their production activities.

The potential of a large number of atomized family agricultural husbandries that have on disposal outdated technical-technological base, as well as extensive and doing everything production, would be potentially in function of the balanced development of agricultural branches and rural areas if additional tax exemptions are introduced, such as: tax reliefs for a certain level of commodity production in highland area; for growing of certain number of cattle per hectare of agricultural land; for implementation of innovations within the production activities; for prevalence, development and strengthening of those lines of agricultural production for which Serbia evidently possess comparative advantages; etc. Besides mentioned tax exemptions that are in context of the economic goals of fiscal policy, in order to improve the social status of certain categories of agricultural husbandries, it could go on reduction of part of tax liabilities on agricultural land to husbandries that are used it as a basic working tool.

On the other hand, the business environment where are particularly small and medium-sized enterprises in primary agriculture, greatly affects and limits income gaining. Therefore, there are justified requirements for additional incentives in the area of fiscal policy, which could be one of the key factors for their survival and further development.

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PORESKA POLITIKA U POLJOPORIVREDI SRBIJE[33]

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Apstrakt

Autori u radu govore o poreskoj politici u poljoprivredi Srbije. Poreska politika se posmatra kroz važeći zakonski okvir, poput: Zakona o porezu na dohodak građana i Zakona o porezu na dobit pravnih lica. Posebna pažnja je posvećena Zakonu o porezu na dodatu vrednost, prvenstveno sa stanovišta porodičnih poljoprivrednih gazdinstava, kako sa aspekta pravila koja su važila prema starom zakonu o PDV-u, tako i sa aspekta poslednjih izmena i dopuna donesenih krajem 2012. godine. Pomenuti pristup izučavanja PDV-a se oslanja na činjenicu da on predstavlja savremeni oblik poreza primenjiv u domenu potrošnje. Uveden je prevashodno kako bi omogućio smanjenje obima sive ekonomije, harmonizovao nacionalnu poresku politiku sa standardima Evropske unije (EU), te kako bi se putem njega povećala naplata poreza.

Ključne reči: *poreska politika, poljoprivreda, Zakon o PDV-u.*

[33] Rad je deo istraživanja na projektu III 46006 - Održiva poljoprivreda i ruralni razvoj u funkciji ostvarivanja strateških ciljeva Republike Srbije u okviru dunavskog regiona, finansiranog od strane Ministarstva prosvete, nauke i tehnološkog razvoja Republike Srbije.

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THE CONTENTS AND TERMINATION OF THE STATUS OF AUTHORISED USER OF INDICATIONS OF GEOGRAPHIC ORIGIN OF GOODS AND SERVICES

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Summary

Indication of geographic origin is a specific intellectual property (IP). Specificity of that IP is mirrored to its legal protection. The IP legal protection of indications of geographic origin is, at the one side, wider than of the other intellectual properties because IP legal protection of registered indication of geographic indication is essentially featured by certain public law element. But at the other side, it is notably narrower because more than one legal entity can be authorised for commercial use of the same indication of geographic origin. Furthermore, an authorised user can not obtain a right in the application nor assign registered indication of geographic origin, since these are not a subject of commerce that is one of the most important powers comprised in all others intellectual property rights, except in collective trademarks and certification marks rights. Authors in this paper deal with legal aspects of indication of geographic origin use.

Key words: *indication of geographic origin, authorised user, contents of right, terminations of right.*

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Introduction

Indication of geographic origin (in further text: IGO) is a "form of intellectual property rooted in agricultural policy and designed to highlight a link between the natural geographical advantages or the reputation associated with a place and the foodstuffs produced in that place" (McQueen et al., 2008, p. 692). It is a sign of distinctiveness used to denominate both territory and goods and services that originate form that territory (Miladinovic, Varga, 2011, p. 334/335). Although IGOs are multifunctional, they are principally considered as an important tool for rural development. They have helped maintain agricultural profitability even in such zones that can be deemed difficult or

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marginal (Barham, 2003, p. 134). Indication of geographic origin can be protected either as designation of origin or geographical indication (Colston, Galloway, 2010, p. 620).[4]

The essential feature of legal nature of authority to use an indication of geographic origin is its similarity to collective trademarks and certification mark rights. Namely, a status of IGO authorised user can be granted to any legal entity which applies for it to a competent body and fulfills all formal and substantial conditions for the status grant. It means that in practice it could be find more legal entities authorised to use the same registered IGO, either it is a designation of origin or a geographical indication.[5] The effect of that is a limit of one's exclusive right by the same right of another authorised user (Markovic, 2007, p. 167). It means that in this part of intellectual property (IP) law there is one subject of legal protection (registered IGO) and more persons (legal as well as natural) in title. It is not only one kind of intellectual property rights with one subject of legal protection and more persons in title. Actually this situation may arise in many other IP law areas either originally (when intellectual property is created by inventive cooperation of two or more persons) or derivatively when an IP right is transferred to two or more people. Shares of co-owners above intellectual property are determined in pursuance of contribution each of them or in accordance with contract. But in the law regarding IGO authorised users of the same IGO appointed by Intellectual Property Office (in further text: IPO) do not form a co-ownership. In contrast, all authorised users of the same IGO are legally and in fact completely autonomous in exploitation of powers they are entitled pursuant legal acts, in full scope but not in an aliquot portion (Varga, 2010, p. 361). All mentioned indicates that authority of IGO authorised user shows many peculiarities which will be the subject of discussion below.

We considered that review of the powers, their contents, scope, limitation and endurance, regarding the use of IGO can be interesting for scientific magazine that is not of a legal character in order to inform its readers about rights relating the use of IGO which are laid down by national and international legal sources. Due to interpretation of legal acts, a normative method will be applied.

[4] Designations of origin mean that product must originate from a particular area, be fully produced, processed and prepared in that area and have qualities or characteristics which are exclusively due to a particular geographical environment. The criteria for geographical indications are less demanding since the geographical link must occur in at least on of the stages of production, processing or preparation.

[5] In conformity in Lisbon Agreement for the Protection of Appellations of Origin and their International Registration of October 31, 1958, as revised at Stockholm on July 14, 1967 and as amended on September 28, 1979, Sluzbeni list SRJ - Medjunarodni ugovori No. 6/98, in Zakon o oznakama geografskog porekla (Indications of Geographic Origin Act), Sluzbeni glasnik Republike Srbije, No. 18/2010; in further text: ZOGP) is regulated legal protection of designations of origin and geographical indications, cumulative named as indications of geographical origin (in further text: IGO).

The Contents of the Authorised User of IGO Power

The contents of authorised user of IGO power are regulated by legal acts and as for them in legal theory there are not relevant disagreements. This is result of the fact that IGO is the subject of the absolute property right that arises from its purpose - pointing to origin of goods and services and their special connection with place they come from (Roubier, 1954, p. 771). In general, authorised user of IGO is entitled with two principal powers: positive, to use IGO in commerce and negative, to oppose to everyone who is not granted by the status of IGO authorised user to use IGO in commerce (Sordelli, 1991, p. 160). Within the scope of the authorised user of IGO authority there is a whole list of exclusive powers which comprise its contents. So, according to Art 56(1) of ZOGP, authorised user of both designation of origin and geographic indication is authorised to:

1. To use designation of origin and geographic indication for labelling of products i.e. goods and services named in IGO. Marking of goods and services can be done by phisical placing of registered IGO directly to goods or onto packaging, catalogues, leaflets, advertisements, manuals, invoices and other types of business papers. If IGO is issued to label services then use of it is done in order to identify the provider, and that depends on their nature. Beside mentioned powers, in scientific literature known as a core of positive powers (Verona, 1978, p. 202), authorised user of *designation of origin* is authorised (we would add - obliged too) by virtue of ZOGP Art. 56(3) to label its product with expression: "controlled designation of origin". By virtue of ZOGP Art 56(4) authorised users of *geographical indication* label their products with expression: "controlled geographical indication".

2. To place goods and services labelled with IGO to trading. Only person with the status of authorised user of IGO is allowed to place goods and services labelled with IGO to trading. Within the sense of Intellectual property law as well as law regarding IGO, trading is doing business on market including selling, tenancy etc. (Markovic, 2007, p. 159). In IP law, the conception of trading encompasses offering of products to place them to trading (i.e. supply). Supply understands all actions by which a third person can expect delivery of products labelled with IGO such as sending bids, exposure of products on fair or exhibition, advertising by media for public communication and the like (Miladinovic, 2007, p. 179).

3. To export or import products labelled with IGO. Authorised user of IGO enjoys an exclusive power to export or import products labelled with IGO. Export and import do not necessary encompass placing goods to circulation. It means that power to export or import of goods labelleded with IGO is infringed if unauthorised user exported or imported them with intention to put goods to circulation but without trading of them in real. In practice counterfeit goods is produced in one and sold in another country. Commercial means to convey counterfeit goods from one country to another are export and import. That is why export and import are subject matter of Madrid Agreement for the Repression of False or Deceptive Indications of Source of Goods of April 14, 1891 as revised at Washington on June 2, 1911, at The Hague on November 6, 1925, at London on June 2, 1934 and at

Lisbon on October 31, 1958,[6] Agreement on Trade-Related Aspects of Intellectual Property Rights-TRIPS Agreement[7] and Council Regulation (EC) No 1383/2003 of 22 July 2003 concerning customs action against suspected of infringing certain intellectual property rights and the measures to be taken against goods found to have infringed such rights.[8] These legal solutions are incorporated into our legal acts[9] and our customs bodies successfully prevent import, export and transit of goods found to have infringed IP rights, including products labelled by false IGOs.

Viewed from the angle of so called negative authorities, authorised user of IGO according ZOGP Art 57 is allowed to prevent unauthorised user of the same IGO to:

1. Use registered designation of origin or geographic indication for labelling products that are *similar* to products named in IGO if such use can undermine reputation of protected IGO;

2. Copy or imitate registered IGO or use translation, transcription or transliteration of registered IGO, even with words "style", "type", "mode", "imitation" attached to IGO and expression of true origin of so labelled product;

3. Label packaging, commercial material or other documents with false or deceptive signs regarding geographical origin, nature and quality of product and this way create confusion relating to real geographical origin of the product;

4. Undertake any other action to create confusion relating to real geographical origin of the product.

These prohibitions apply to IGOs registered in EU by virtue of EU prescriptions. Anyone who is not authorised user of IGO can't use trademark composed of or which contain appellation that is the same or similar to IGO registered in EU by virtue of EU prescriptions, intended to label similar products as for which conditions for use of IGO are not fulfilled.

The scope of IGO legal protection and authorised users' of IGO powers limits

The scope of IGO legal protection

Since business function of IGOs is analogous to business function of trademarks, the scope of IGO legal protection is determined by the principle of speciality. It means that by

[6] Sluzbeni list SRJ - Medjunarodni ugovori No. 1/99.

[7] Annex 1C of the Marakesh Agreement Establishing the World Trade Organization, signed in Marrakesh, Morocco on April 15, 1994.

[8] OJL, 196 of 2. 8. 2003, pp 7-14. From January 1, 2014 it will enter into force Regulation (EU) No 608/2013 of the European Parliament and the Council of 12 June 2013 concerning customs enforcement of intellectual property rights and repealing Council Regulation No 1383/2003. OJL 181 of 29.6.2013, pp 15-33.

[9] Based on mentioned international documents, pursuant Customs Act, Sluzbeni glasnik Republike Srbije, No. 18/2010 and Ordinance on Conditions and Managing of Measures for Protection of Intellectual Property Rights on Border, Sluzbeni glasnik Republike Srbije, No. 89/2010 customs officers are authorised either officially or upon request to undertake measures in order ot prevent placement into circulation goods found to have infriged IP rights.

IGO can be labelled only that sort of goods or services it is established for. For which sorts of goods or services IGO will be established must be revealed in the application.[10] However, authorised user of IGO is entitled to oppose to anyone to use registered IGO for labelling not only those sorts of goods and services IGO is established for, but to use *similar* sign to label the same or *similar* goods and services. It means that, like in trademark law or industrial design law, the scope of legal protection exceeds the immediate subject of legal protection (Vlaskovic, 1996, p. 782). Obviously this power is much wider than unauthorised use of the same IGO prohibition. It spreads to use of translation, transcription or transliteration written by any font, with any colour or made on any other way, for labelling of products even if IGO is accompanied by an expression such as "style", "type", "method", "as produced in", "imitation" or something similar and the true origin of product is indicated (Bently, Sherman, 2004, p. 982/983) and covers all practices that refer in any way to an indication of geographical origin in such a way as to take unjustified advantage of its reputation. Furthemore the usage of IGO products as ingredients is encompassed by the prohibition.[11]

Authorised user's of IGO powers limits

Powers of IGO authorised user is not unlimited. They are limited by exhaustion of right. When authorised users place into circulation a sample of goods labelled by registered IGO their powers regarding further trading of the sample of goods placed into circulation is exhausted, i.e. terminated. It means that any person that acquired it legally is authorised to forward it to circulation without infringement of the IGO authorised user powers (Miladinovic, 2009, p. 149).

Powers of authorised users of IGO do not have any effect towards a subject of trademark right for the same or similar sign for labelling the same or similar goods or services, under condition that, before IGO was registered, trademark was registered in good faith or trademark right was acquired by faithful use of the sign in trading. Also, powers of authorised user of IGO do not have any effect in connection to use of trademark which is the same or similar to IGO that is registered in EU by virtue of EU law, if, before IGO was registered in EU by virtue of EU law, trademark was registered in good faith or trademark rights were obtained through faithfull use in trading (ZOGP, Art. 58). Besides, powers of authorised user of IGO do not produce any legal effect towards persons which in trading use their own personal name or name of their successors in title as commercial names, if those names are the same or similar to the registered IGO, under condition that the commercial name is chosen or used faithfully. In this situation, even if condition is fulfilled, exception will not apply if use of the commercial name causes a possibility to mislead customers.

[10] In compliance with ZOGP Art 20(1), pt. 3, request for registration of designation of origin and geographic indication of origin has to contain clear indication of the sort of goods or services applicants intend to use IGO for labelling. The same data must be filled in the application for the IGO authorised user status (ZOGP Art. 35(1), pt. 3).

[11] Regulation (EU) No 1151/2012 of the European Parliament and the Council of 21 November 2012 on quality schemes for agricultural products and foodstuffs (OJL 343 of 14.12.2012, pp. 1-29), Art. 13(1)a.

Authorised user of IGO powers can not be transferred by legal transactions *inter vivos*. It means that those powers can not be an object of licence, security, franchising agreements. If registered designation of origin or geographic indication is the object of pending or registered trademark, that trademark can not be assigned, ceded, used as a security or so (ZOGP Art. 60).

Termination of registered IGO and the status of IGO authorised user

Peculiarities of IGO can be seen regarding the termination of the IGO authorised user status. As for termination of IGO authorised user status it is important to make difference between termination of IGO and termination of the status of authorised user of IGO. Naturally, if IGO is terminated a status of authorised user of that IGO can not survive any more. It is because a status of authorised user of IGO can not exist in absence of IGO which should be used. That is why we have to talk about termination of registered IGO first and then explain termination of a status of IGO authorised user.

Termination of registered IGO

Endurance of registered IGO legally is not limited. Registered IGO can last as long as natural, material and objective conditions for production, processing or finishing of goods or service rendering exist on territory for which IGO is registered (Varga 2010, p. 363). Registered IGO can exist in the absence of authorised users, irrespective if they ever existed (Radivojevic, 1996, p. 797). However, there are three grounds for IGO termination laid down by ZOGP (Art. 61-69).

Firstly, registered IGO can be terminated if decision on registration of it is revoked. Decision on registration can be revoked if conditions for registration of IGO were not fulfilled at the time of decision making. The procedure for revocation of decision on IGO registration can begin only by proposal of interested person (legal or natural). If proposer during the procedure gives the proposal up, Intellectual Property Office (IPO) is authorised to continue procedure officially. Towards 1995 ZOGP (Art. 43),[12] revocation could be done by IPO officially and proposal could be submitted by the prosecutor. It is not completely clear why those solutions were not retained in actual ZOGP.

If the proposal can be preceded, IPO delivers it to the opponent of the proposer asking for answer to be remitted not later than 30 days after proposal receipt. If IPO considers to be needful it shall appoint a day for hearing where parties which participate in the procedure can expose their standpoints *pro at contra* revocation. Revocation of the decision on IGO registration does not produce any effect towards judgements on infringement of (revoked) IGO which were irrevocable and under condition that plaintiff was faithful (ZOGP Art. 66).

Secondly, registered IGO terminates if protection of it is terminated in the country of origin. IPO shall make decision on termination of that registered IGO if such request is submitted by an interested person. An acknowledgement issued by a competent body of country of registered IGO origin as a proof the IGO is terminated there has to be enclosed to the

[12] Official Journal of SRJ, No. 15/95.

request for termination. As can be seen, this ground for IGO termination is laid down only for those registered IGOs that previously were registered abroad i.e in the country of origin.

Thirdly, registered IGO, but only IGO that is registered as a geographic indication, can be abolished by court judgement. In accordance with ZOGP Act 68, anyone can launch a court procedure for determination that geographic indication has become a generic, i.e. customary name for a whole sort, *genus* of products.[13] Generic or descriptive geographic indications are in most those that used to really point to geographic origin of the goods losing that capacity through process of vulgarization (Vlaskovic, 1996, p. 782). If court accepts a claim, registered geographic indication will terminate when judgement becomes irrevocable.

IGO that in the country of origin is registered as a *designation of origin* can not be acclaimed as a generic one as long as such protection endures in the country of origin (ZOGP Art. 68). It means that no one can sue for abolishment of designation of origin.

Termination of the status of IGO authorised user

Duration of the status of IGO authorised user is limited to three years. The term can be extended in unlimited number of times if request for extending is submitted timely and if conditions to grant the status are fulfilled (Besarovic, 2005, p. 182). However, several reasons for the status of IGO authorised user termination are laid down by law. In conformity in ZOGP Art 48 and Art 62-70, status of the authorised user of IGO terminates if:

a*/ Renewal of the status is omitted.* In order to restitute the status, authorised user of IGO has to submit request, pay fee for renewal of the status and prove that conditions for grant the status are still fulfilled.[14] If request for renewal of the status is not filed timely or fee is not paid, status shall quit next day after term for renewal of the status expired. There is an exception of the rule contented in the Art *5 бис* of 1883 Paris Convention for Protection of Industrial Property (PC). In compliance with that PC Article, member states of PC are obliged to envisage additional term (period of tolerance), not longer than six months, for request filing and exceeding the term of legal protection, if additional fee is paid. This exception is not explicitly prescribed by ZOGP but doubtless it can be applied for renewal of the status of authorised user of IGO.

b*/ Decision on the grant the status is revoked.* Decision on the grant of the status of IGO authorised user can be revoked if conditions for grant the status were not fulfilled at the time when the decision on the status grant is made and if written proposition for revocation is submitted to IPO by interested person. IPO is not authorised to initiate the procedure for revocation officially, but if proposer gives up, IPO is authorised to continue

[13] Generic or descriptive indications of geographic origin are those which by long utilisation on market, in the customers' consciousness have become name for the whole genus of a product or rarely indication of quality or some other feature of goods, but without inseparable linking of quality and other traits of the goods with the geographic name. For example Bayrisch Bier, Shopska salad and similar.

[14] ZGOP, Art 48-51.

the procedure officially. In compliance with 1995 ZOGP, IPO and public prosecutor were authorised to launch the procedure for revocation of the decision on grant the status. It is not clear why this solution is not retained in running norms. If proposal submitted, whether originally or after correcting subsequently, in appropriate form, IPO delivers the proposal to opponent of proposer asking for answer to be remitted no longer than 30 days after proposal is delivered. If IPO considers it would be needfully, it shall appoint the day for hearing where parties are allowed to communicate their standpoints regarding the decision revocation. Revocation of the decision on the status of IGO authorised user grant does not produce any effect towards judgements on infringement of (revoked) IGO which are irrevocable and under condition that plaintiff was faithful (ZOGP Art. 66).

***c**/ IGO authorised user status is abandoned by holder of the status.* IGO authorised user is authorised to abandon the status at all times submitting a written statement on the subject. The status will be deemed terminated since next day after the statement of abandon is submitted to the IPO. The question is if the statement can be countermanded, i.e. repealed. There is not any provision on the subject in effect. Anyway, the abandonment of the status statement can be repealed if statement on repeal is received by IPO at the same time or before statement on the abandon the status.

***d**/ IGO ceased to exist.* If IGO is terminated the status of the terminated IGO authorised user can not survive. In dependence of the IGO termination ground, the status of the IGO authorised user terminates on day determine by IPO decision or court judgement.

***e**/ IGO authorised user ceased to exist.* IGO authorised user can be legal or natural person. If IGO authorised user was a legal person then the status of the authorised user of IGO is terminated by termination of the legal person (liquidation, bankruptcy). The status of IGO authorised user terminates on the same day when status of legal person terminated (Art. 69(3) ZOGP). However if there are successors in title (like in the case of status changes), the status of IGO authorised user will not cease to exist if successor in title takes over the status. It would be envisaged by contract on status change (in the case of merger or affiliation) or by shareholders assembly decision (in the case of division of the company). If the status of IGO authorised user belonged to the natural person, the status terminates along with the death of the individual. The status of IGO can not be assigned to heirs analogously to the cases of legal person as an IGO authorised user termination because "by the act of a universal succession, i.e. by pursuing of heir into portion of every right that is a part of hereditary property as a property unit, can not be accomplished the aim regularly realized in the administrative procedure of granting the status of authorized user of indication of geographical origin - that is connection of indication of geographical origin authorised users and territory and control of quality or other characteristics of designated goods and services" (Zivojinovic, Varga, 2012, p. 256).

***f**/ Decision on the status grant is abolished.* The status of IGO authorised user is deemed terminated if decision on the status of IGO authorised user grant is abolished. Decision on the status of IGO authorised user shall be abolished if conditions for grant the status ceased to exist. Decision on the status abolishment is made by IPO upon the request of interested person, i.e. competent body. IPO is not allowed to initiate the abolishment

procedure officially. Such possibility was envisaged by 1995 ZOGP (Art. 46) but was not retained. So after request for abolition of the status is filed, IPO conducts the procedure for determination if conditions for grant the status still exist (ZOGP Art. 4).[15] Burden of proof is on the IGO authorised users. They have to prove that conditions to grant the status have not ceased to exist, i.e. that conditions for the IGO authorised user grant status are still fulfilled. If IPO adopts the request for abolishment of decision on the grant of the status, the status terminates next day after irrevocability of the decision on the status abolishment. Although such provision is not contained into ZOGP, by analogous application of the rules on annulment of decision on IGO establishment, data regarding termination of the status will be recorded at the authorised users' Register and published in IPO Official gazette.

At the first sight it may seem this ground for termination of the status is the same as the one mentioned under b). It is not so and a clarification is needed. The grounds are different because the status will be revoked if conditions for the status grant were not fulfilled at the time when the status was granted, but in the case of the status abolition, the conditions for the status grant were fulfilled at the time when the status was granted but ceased to exist afterwards. For example it is the case when the quality of a product labelled with registered IGO is lower than at the time when the status of IGO authorised user is granted or authorised user of IGO cease to do business at the location the product originates from.

Conclusion

In general, IGO can not be established if the quality or reputation of products or services is not better than quality or reputation of the same goods or services produced or rendered at the other location. If so, all legal entities which do business on the location where special natural and/or human factors influencing better quality or reputation of the goods and services they produce/render exist should use a legal possibility and apply for the status of the IGO authorised user. This way they obtain an authority to label their product with the registered IGO and place so labelled products into circulation and at the same time, to oppose to everyone who is not entitled to use IGO on the market to continue to do that.

Powers arising from the IGO authorised user status are the strongest legal powers regarding labelling the goods and services on the market because the holder of them is authorised to oppose the use not only the same but similar registered signs for the same or similar goods or services. Since the part of the IGO is almost always the name of the region or other geographic location, advantage of the IGO as a subject matter of Intellectual Property Law is that public prosecutor is authorised to file the action to the court for the IGO infringement. Also, unauthorised use of the IGO is in the competence of customs officers and inspectorates that is rather wide legal protection "fan".

Goods and services that could be labelled by IGOs, for the most part produced by more legal entities at the same locations. It would be very recommendable if they establish a business association, register IGO and apply for the grant of the IGO authorised user status

[15] In that case pursuant ZOGP Art. 70(4), procedure the same as in the case or processing of application for the grant of status of authorised user of IGO (ZGOP, Art. 41 and 42).

as a business association. This way they may achieve time rate saving (only one legal procedure is launched instead of so procedures relating to the number of producers or services' renders) and saving in expenses as for the administrative procedure, grant and triennial extending of the status.

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SADRŽINA I PRESTANAK STATUSA OVLAŠĆENOG KORISNIKA OZNAKE GEOGRAFSKOG POREKLA ROBA I USLUGA

Božin Vlašković[16], Zoran Miladinović[17], Siniša Varga[18],

Rezime

Subjektivno pravo oznake geografskog porekla je specifično pravo intelektualne svojine. Sadržina ovog subjektivnog prava je s jedne strane šire u odnosu na druga subjektivna prava intelektualne svojine (patent, žig, pravo na industrijski dizajn, biljnu sortu, topografiju integrisanih kola, autorsko i srodna prava), jer registrovana oznaka geografskog porekla kao predmet zaštite sadrži i određeni javnopravni element, a s druge strane je znatno uže, jer može postojati više lica sa statusom ovlašćenog korisnika iste registrovane oznake geografskog porekla. Ovlašćeni korisnik nema pravo iz prijave niti stečenim pravom može raspolagati, tj. ovo pravo nije podložno prometu, što je jedno od najbitnijih ovlašćenja sadržanog u svim drugim subjektivnim pravima intelektualne svojine, osim kolektivnog žiga i žiga garancije.

Autori se u ovom radu bave upravo tim pitanjima, tj. pravnim aspektima statusa ovlašćenog korisnika oznake geografskog porekla, fokusirajući se na konkretna ovlašćenja, obim prava, razloge iz kojih jednom stečeno pravo, tj. status može prestati i posledicama prestanka registrovane oznake geografskog porekla i pravnog statusa ovlašćenog korisnika oznake geografskog porekla.

Ključne reči: *oznaka geografskog porekla, ovlašćeni korisnik, sadržina prava, prestanak prava.*

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THE COMPETITIVENESS OF FUNCTIONAL FOOD PRODUCTION

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Summary

Raising people's awareness about taking care of their health and development of the food industry, medicine, and those branches of science that deal with the relationship between nutrition and health has led to the popularization of the foods for which special health effects are proven. Functional foods are foods whose longer consumption can have preventive or therapeutic effects on different aspects of human health. It can be conventional with bioactive components, or "strengthened" so the risk of certain illness can be reduced. Despite increasing number of researches about functional food, there is a lack of information about psychosocial factors which influence on consumers' attitudes regarding functional food. Most research related to functional food is concentrated on its possible health effects, while relatively little is known about consumers' reaction to it. The aim of this work is to assess interest of consumers for buying functional food, according to obtained consumers' attitudes.

The survey has been conducted in area of Vojvodina, in cities such as Novi Sad, Subotica, Zrenjanin, Vršac, Ruma and Inđija, in the period from August 15th till September 10th, 2012. The example included 400 respondents, who were questioned with previously prepared questionnaires, mainly in supermarkets, where consumers can buy functional foods. Obtained results were analyzed in program package software SPSS 19 with use of descriptive statistics. According to the obtain results, it can be concluded that is necessary to further inform consumers about functional food and its benefits in regard to conventional food. Also, it is necessary to define market of functional food in Serbia, adopt certain regulations which can be helpful for increasing of consumers' confidence about functional food and make larger consumption of this kind of food, which can result in better health condition of the nation.

Key words: *functional food, consumers' attitudes, Vojvodina.*

JEL: *Q120, Q180*

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Introduction

Food, as a result of numerous and various activities within long and complex food chain, mainly is associated with three major requirements: to be safe, qualitative and to ensure safety regarding of supplying. Noted aspects present a common right of each individual, since the food is one of three conditions for life (Radovanović, 2007). Common nutritional and necessarily needed materials for the proper functioning of the human body are following: proteins, carbohydrates, fats, vitamins and minerals.

Raising an awareness of people about health care and development of food industry, medicine and natural sciences that study relationship between nutrition and health led to the popularization of groceries for which special health performance has been proved. Numerous scientific evidences support the fact that the nutrition enriched with certain groceries (for example, fruits and vegetables) is directly connected with decreased risk of chronic, non-infectious diseases. According to these acknowledgements, the concept of functional food is developed (Miletić et al., 2008).

There is no official, universally accepted definition of functional food. However, during 1998, EU in coordination with „International Life Science Institute Europe" adopted following definition: "Grocery can be declared as functional if it is proven that it has favorable effect on one or more organism functions in proper way, out of frames of common nutritive effects and in a way that is essential for overall health condition and reducing of risk of disease" (Diplock et al., 1999; Puvača et al., 2012a).

During the second half of 1980s, the concept of functional food firstly was developed in Japan. This concept includes the fact that food has three functions:

1) Nutritive, which is used to maintaining of life and growth of the body,
2) function of tastes as well as interaction with the sensory function of each component,
3) Defense of body or modifications which contribute to the preservation of health and prevention of disease (Goktepe, 2005).

Functional food differs from conventional food in several ways. Conventional "healthy food" is usually presented as a kind of food which contributes to healthy nutrition (products with reduced fat, products with high fiber content ...). Within functional food, special components are directly connected with well-defined physiological effects and health benefits associated with a certain product (Lähteenmäki, 2003). Known as a food for specific healthy consumption this food includes functional ingredients which influence on structure or function of the body (Arai et al., 2002).

Components of functional food, which are carriers of functions, mostly are grouped regarding their origin. Functional grocery can be made by adding biologically active ingredient to traditional grocery. In this way, traditional grocery expands its effect, or completely new product occurs, with specific content and physiological effect (probiotic fruit juice) (Miletić et al., 2008). Changing of food using biotechnology in order to improve its nutritional value and health properties can also create new functional products for the market, such as products with Omega 3 fat acids or oils without trans fats (www.

pewtrustsorg/Reports/Food_and_Biotechnology/PIFB_ Functional_Foods.pdf, 2009; Puvača et al., 2012b). Safety aspect becomes more important, especially with groceries which are intended for mostly sensitive groups of consumers, such as children, pregnant women and older people. No matter why functional component have positive impact on human health, toxicological observation needs to be conducted. In other words, the possibility of pathogenic, mutagenic or carcinogenic effect needs to be examined.

Most of researches about functional food are concentrated on its possible health consequences, while relatively little is known about the reaction of consumers on this food (Saher et al., 2004). Many indicators show that in era of conformism, the consumer is the main trigger of the economy or the main force of society. Nowadays, an individual approach to consumer is applied (Vlahović et al. 2011), because consumers in free markets are those who should dictate which and what kind of products and services are demanded. Even if food would fulfill its nutritive role, it does not mean that it will be accepted by consumers (Cesaretti et al., 2011), if they don't like its taste or any other feature. Therefore, research of consumers is a key process in development of functional groceries (Ares, Gámbaro, 2007). Previous studies concluded that consumers are skeptical regarding nutritive and health declarations (Vukelić et al., 2012), they do not make clear difference between nutritive and health declarations (although they think of them as potentially useful) and they more prefer shorter core statements rather than complex ones (Verbeke et al., 2009).

Despite increasing number of researches about functional food, it is little known which psychosocial factors contribute to consumers' attitudes about functional food (Devcich et al., 2007). One study discovered that uses of functional food and confidence in its properties are key factors regarding consumers' willingness to use such kind of products (Urala, Lahtemaki, 2004). Another study about accepting the functional food showed that confidence in health values of functional food presents main factor of acceptance (Verbeke, 2006). Previous researches noted that people, who do not use functional food, justify that with lack of knowledge, decreased interest in functional food and its price (Niva, 2006). Main argument contributing higher sale of functional food is that this food has a preventive influence on health condition, which has especially great influence on younger consumers, who seek for better quality of life (Cross, Frost, 2009). Many authors studied functional food in Serbia (Perić et al., 2011; Stojanović and Dragutinović-Mitrović, 2012; Radovanović, 2007; Miletić et al., 2008; Košutić, 2012), but, as far as it is known, none of them explored attitudes of consumers regarding functional food. According to previously noted, the aim of this work is to check consumers' attitudes regarding functional food, define their knowledge and interest to buy and consume this kind of food.

Materials and Methods

In order to determine consumers' attitudes respecting their interest for buying of functional food in Vojvodina, the research on this territory, in cities such as Novi Sad, Subotica, Zrenjanin, Vršac, Ruma and Indjija has been conducted. It was conducted during the period from August 15th to September 10th in 2012. Example included 400 consumers who were questioned, using previously prepared questionnaires, mainly in

supermarkets, where consumers can buy and functional food. The questionnaire included 3 groups of questions. First group was regarded to socio-demographic characteristics of respondents; second group was defined about their health condition, type of their health care, and kind of nutrition, while the third group included questions about functional food, their attitudes about it, knowledge, reasons for buying of this kind of food, etc. Survey results were analyzed by program package software SPSS 19 using descriptive statistics.

Results and Discussion

Socio-demographic characteristics of respondents are presented in table 1. Analyzed example includes larger presence of female respondents (61%) which can be explained by the fact that women spend more time in shopping and they are more ready for cooperation rather than men. Also, this example includes larger number of consumers of age between 26 and 35 years, with higher level of education (Table 1).

Table 1. Socio-demographic characteristics of sample (N=400)

Gender	male female	39% 61%
Region	urban rural	60% 40%
Age, years	18 – 25 26 – 35 36 – 45 46 – 55 more than 55	8% 35% 22% 17% 18%
Education	Primary school Secondary school University degree	4% 39% 57%
Net monthly income of the household in RSD	up to 15,000 15,000 – 30,000 30,000 – 75,000 75,000 – 150,000 more than 150,000	1% 14% 45% 36% 4%
Number of members in the household	one two three four five or more	12% 19% 24% 33% 12%

Source: Research results

During the research on consumers' attitude toward functional food, respondents answered on questions: a) Have you heard about the term known as functional food? b) Have you ever consumed some products which belong to functional food? Table 2 presents answers of respondents, regarding their socio-demographic characteristics.

Table 2. Answers to questions regarding to socio-demographic characteristics of respondents N=400

Socio-demographic characteristics of respondents	Have you heard about the term known as functional food?		Have you ever consumed some products which belong to functional food?	
	YES (%)	NO (%)	YES (%)	NO (%)
Gender				
- male	8	31	22	17
- female	11	50	36	25
Region				
- urban	11	49	32	28
- rural	8	32	26	14
Age, years				
- **18 – 25 years**	0	8	5	3
- **26 – 35 years**	13	22	18	17
- **36 – 45 years**	4	18	16	6
- **46 – 55 years**	2	15	10	7
- **More than 55 years**	4	14	9	9
Education				
- Primary school	0	4	0	4
- Secondary school	4	35	25	14
- University degree	15	42	33	24
Net monthly income of the household in RSD				
- up to 15000 RSD	0	1	1	0
- 15000 – 30000 RSD	2	12	5	9
- 30000 – 75000 RSD	9	36	26	19
- 75000 – 150000 RSD	6	30	22	14
- More than 150000 RSD	2	2	4	0
Total	19	81	58	42

Source: Research results

Only 19% of respondents answered that they have heard about the term – functional food. Most of them were women from the city, in the age 26-35, with higher and high education and monthly income of 30000 – 75000 RSD. Similar results were obtained by Menrad 2006, who implies that 20, 7% of respondents in Germany heard about this term. The percentage for other countries is following: 19, 1% in Poland, 33% in Spain, 10, 7% in UK.

After this question, the term for functional food is explained to respondents and then they answered if they used some of products which belong to functional food. Total of 58% confirmed and most of them (89%) claimed that they used yogurt with probiotic as a grocery which belongs to functional food. Also, those who have heard about this kind of food (58%) were asked to explain why they continued to buy it regarding their health condition, the way how they treat their health and their nutrition regime.

Table 3. Reasons why respondents decide to buy functional food regarding their health condition, way of nutrition and treatment to health

Questions regarded to health condition and nutrition of respondents	Why did you decided to buy functional food?			
	I think it has favourable influence on health (%)	I buy out of curiosity (%)	It was recommended by doctor or nutritionist (%)	It is more tasteful (%)
How would you describe your health condition?				
- Healthy and satisfied	23	5	0	6
- I have minor health problems	29	1	2	10
- I have serious health problems	12	0	4	8
What is your kind of nutrition?				
- Healthy	38	3	1	11
- Common	20	3	0	13
- Vegetarian	3	0	0	0
- Dietary	3	0	5	0
Do you take care of your health and in which way?				
- I don't care about my health	14	2	0	4
- I am trying to have healthy nutrition	22	1	4	16
- I exercise regularly	8	1	0	4
- I eat a healthy nutrition and regularly exercise	20	2	2	0
Total	**64**	**6**	**6**	**24**

Source: Research results

According to presented results (table 3), it can be observed that most of respondents (64%) believes that functional food can have a positive influence on human health. They are people with minor health problems, who believe to make positive influence on their health condition using healthy food. 24% of respondents buy functional food because they find it more tasteful, 6% of respondents buy functional food out of curiosity, while 6% of respondents, of which 2% have minor health problems and 4% have serious health problems, buy this kind of food by the recommendation of doctor or nutritionist. Menedar (2006) obtained similar results. He noted that consumers in Poland, Germany, Spain and UK stated that "very important" and "important" factor for buying of functional food is "to stay healthy" and "to do myself good". Factors for buying of functional food, "recommended by medical doctor or nutritional consultant" are noted as "less important" in Germany, while they are noted as "neutral" in Poland, UK and Spain.

Conclusion

The production of functional food in world and Europe increases its importance. Consumers are getting more aware of the importance of healthy nutrition and its influence on their health. The aim of this work was to observe attitudes of consumers, their interest in consuming the functional food and to define competitiveness of the production of functional food. The analysis of research results showed that very small number of respondents (19%) has heard for the term – functional food. However, when characteristics of functional food are explained to them, including its products on the market, 58% of them answered that they have used these products. Main reason of this use is that "they think it has a positive effect on health". According to previously mentioned, it can be concluded that is necessary to further inform consumers about functional food and its benefits in regard to conventional food. Also, it is necessary to define market of functional food in Serbia, adopt certain regulations which can be helpful for increasing of consumers' confidence about functional food and make larger consumption of this kind of food, which can result in better health condition of the nation.

Acknowledgment

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KONKURENTNOST PROIZVODNJE FUNKCIONALNE HRANE

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Rezime

Podizanje svesti ljudi o brizi za zdravlje, kao i razvoj prehrambene industrije, medicine i onih grana prirodnih nauka koje proučavaju odnos između ishrane i zdravlja doveo je do popularizacije namirnica za koje su dokazani posebni zdravstveni učinci. Funkcionalna hrana je ona hrana čijom se dužom konzumacijom može uticati preventivno ili terapeutski na različite aspekte zdravlja ljudi. Ona može biti konvencionalna sa bioaktivnim komponentama ili "ojačana" tako da smanjuje rizik pojave neke bolesti. Uprkos sve većem broju istraživanja o funkcionalnoj hrani, u ovom trenutku se malo zna koji psihosocijalni faktori imaju uticaj na stavove potrošača prema funkcionalnoj hrani. Većina istraživanja u vezi sa funkcionalnom hranom je koncetrisana na njene moguće zdravstvene posledice, a relativno malo je poznato o reagovanju potrošača na nju. Cilj rada jeste da se na bazi dobijenih stavovi potrošača oceni zainteresovanost potošača za kupovinu funkcionalne hrane.

Istraživanje je izvršeno na teritoriji Vojvodine, u gradovima Novi Sad, Subotica, Zrenjanin, Vršac, Ruma i Indjija u period od 15. Avgusta do 10. Septembra 2012. godine. Uzorkom je obuhvaćeno 400 potrošača koji su anketirani, uz pomoć već pripremljenih upitnika, licem u lice, najvećim delom u supermarketima gde potrošači mogu i da kupe funkcionalnu hranu. Dobijeni rezultati su analizirani u programskom paketu SPSS 19 uz pomoć deskriptivne statistike. Na osnovu dobijenih rezultata može se zaključiti da je neophodno više informisati potoršače o prednostima funkcionalne hrane u odnosu na hranu proizvedenu na konvencionalan način. Takođe, nužno je definisati tržište funkcionalne hrane u Srbiji, usvojiti određene regulative koje će doprineti većem poverenju potrošača prema istoj, što će za posledicu imati veću potrošnju fukcionalne hrane, a samim tim i uticati na poboljšanje zdravstvenog stanja nacije.

Ključne reči: *funkcionalna hrana, stavovi potrošača, Vojvodina*

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[6] Dr Đorđe Okanović, Univerzitet u Novom Sadu.

CORRECTIONS

Jasmina Ćetković, Aleksandra Despotović, Miroslav Cimbaljević - *Analyses of organization and milk production economics on farms in Montenegro* (vol. 59, pg. 9, 2012).

Summary: From the list of references of the above mentioned paper are deleted (by Correction) all quotes entered by mistake during the paper writing.

Correction: From the above mentioned paper next incorrectly entered quotas are deleted from the list of references:

1. Bulatović, B., Despotović, A., Jovanović, M. (2000): Izbor optimalne strukture poljoprivredne proizvodnje sjevernog područja Crne Gore, Ekonomika poljoprivrede, br. 3-4, str. 19-30, Beograd.

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Milutin Đorović, Simo Stevanović, Verica Lazić - *The world and domestic markets for tobacco and tobacco products* (vol. 59, pg. 21, 2012).

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Branislav Vlahović, Velibor Potrebić, Marko Jeločnik - *Preferences of wine consumers on Serbian market* (vol. 59, pg. 37, 2012).

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Ivan Milojević, Milan Mihajlović, Marko Cvijanović - *Impact of organizational failure of relevance consolidated budget* (vol. 59, pg. 63, 2012).

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Slavica Arsić, Nataša Kljajić, Predrag Vuković - *Cattle stock and the analysis of total meat production in the Republic of Serbia* (vol. 59, pg. 99, 2012).

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Jasenka Bubić, Jasmina Hajnrih - *The analyses business performances of agricultural enterprises in Vojvodina during the current crisis* (vol. 59, pg. 183, 2012).

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Bojana Kovačević, Tamara Gajić, Mirjana Penić - *Job satisfaction among the employees in Novi Sad's tourist agencies* (vol. 59, pg. 217, 2012).

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Vesna Miletić, Dušan Milosavljević, Boban Kostić - *Institutional investment policy frameworks for the agriculture of the Republic of Serbia* (vol. 59, pg. 363, 2012).

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Slobodan Nešković - *An agricultural production as a signficant area of a stategy of economy diplomacy of Serbia* (vol. 59, pg. 589, 2012).

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Simo Stevanović, Milutin Đorović, Milan Milanović - *The development of the market production of cereals in Serbia: example wheat and corn* (vol. 59, pg. 617, 2012).

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Snežana Krstić, Slavko Vukša, Slobodan Andžić - *The role of the National Bank in creation of public debt of Independent Kingdom of Serbia* (vol. 59, pg. 687, 2012).

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REFERENCES OF USED LITERATURE (EXAMPLES)

a) Journals and other periodical publications

Author, A., Author, B. and Author, C. (2012). *Title of article*. Title of the journal, Publisher, *Volume* (number), pages, location.

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