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INTRODUCTION OF THE GRAIN FUTURES MARKET IN THE BLACK SEA REGION

Vlado Kovačević[1]

Abstract

In this paper are analysed possibilities and mechanisms for developing grain futures in the Black Sea Region. The transition to the market economy in the agricultural sector of Romania, Bulgaria and Serbia reinforces the need for the development of market mechanisms that would allow agricultural producers, production planning, marketing, and hedging.

In the early 21st century an attempt was made with the support of USAID to establish a wheat futures market for the countries of the Black Sea Region. The project was unsuccessful. The reasons lie primarily in the attempt to simultaneously involve a large number of countries that had: (1) different standards of wheat quality, (2) different and incompatible payment systems between countries, (3) customs barriers between countries, and so on. The proposal now is to precede with the establishment of futures markets in Serbia, Romania and Bulgaria, which have liberalized markets between themselves, and established a common legal EU' framework related to the commodity derivatives market. After a successful introduction of the futures market for these three countries, other countries in the Black Sea Region can individually join the already formed system.

A large volume of wheat futures trading is expected on the Black Sea futures market, littoral for two reasons. Firstly, a significant part of global trade in wheat is contracted for delivery to Black Sea ports. Secondly, the volatility of wheat prices has been notable in recent years, strengthening the need for the use of futures to insure wheat prices in the future.

Romanian and Bulgarian membership in the World Trade Organization and the European Union, together with Serbian candidate status in both organisations guarantees that the market between those countries will remain liberalized. EU directives on investment protection schemes and a common derivatives market enforced for all EU countries will positively influence the grain futures market for the Black Sea Region.

Key words: *commodity exchanges, futures contracts, hedging, warehouse receipts.*

JEL: *E61, Q13*

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Introduction

Futures (futures) contracts are liquid contracts that have many similarities with forwards, so that some authors consider them a variant of forward contracts. A futures contract means the agreement to sale/buy a certain quantity of agricultural products at a predetermined price, quality and place and date of delivery. The main agricultural products with the highest volume of futures trading are in wheat, corn, soybeans, rice, coffee, cocoa and cotton.

There are many fundamental differences between futures and forward contracts, such as:

Futures contracts can be traded on secondary markets (they are liquid) as opposed to a forward contract (Belozertsov et al., 2011).

In futures, delivery is flexible so that the delivery of agricultural products can be made during the month. In a forward contract, the delivery of agricultural products is linked to a particular day or a maximum of a few days.

The forward contract is not managed by a clearing house and does not require a margin, so that a forward trade carries a greater risk of default than futures.

The closing of forward contracts is done with actual delivery of the agricultural products, while with futures, delivery of goods is the exception (only two percent of futures contracts actually implement the delivery of goods), and the closing of the contract is usually by payment of the difference in price.

Futures contracts are characterized by high standardization in terms of asset types, quantity, quality, delivery place, delivery time (Aimin, 2010). At the entering into the future contract, knowledge of the buyer/seller is not required because the clearing house appears in both the buyer's and seller's roles. Neither is creditworthiness analysis of the seller by the buyer and vice versa required.

Wheat traded on the CBOT (Chicago Board of Trade) implies that a contract is concluded in 5,000 bushels. Resolving the issue of the size of the contract is a sensitive for any commodity derivatives, if the contract is too large it will exclude small players, on the other hand, small contracts increase costs, It can be concluded that the standardization of the quantities of assets per futures contract is something the commodity exchange should determine on the basis of the situation on the market in question (not to be accepted without an analysis of the experience of other markets).

Standardization of quality implies that agricultural products have certain physical and chemical characteristics. For some products several levels of quality may be determined, as is the case where the CBOT corn contract is at the standard quality referred to as "No. 2 yellow", but replacement is allowed with other qualities within established relationships.

Standardization of delivery times means that the maturity of the futures contract is predetermined and related to events in a particular month. So, for example, CBOT corn may be traded on March, May, July, September and December contracts.

Established roles to achieve the effect of economies of scale in transactions and thus reduced transaction costs make trade easier and more attractive.

The existence of competition in supply and demand is a necessary condition for the efficient trading of futures on agricultural products. There must be a sufficient number of subjects in the futures markets for agricultural products who want to protect themselves from risk, and in taking on risk subjects expect to make a profit (Zakić et al., 2012).

A futures contract buyer (taking a long position) expects the price of agricultural products in the spot market to grow. By selling futures (taking a short position) on an agricultural product, the seller expects the opposite - the price of agricultural products in the spot market will fall (Allgood et al., 2010).

EXAMPLE: Serbian agricultural company is planning in May to sale 3000 tons of wheat, futures price is 252 dollars/t for delivery in October FOB Black Sea port Costanza-Romania. As the Company still has no wheat in May they are worrying that the price can go up until October. To ménage the price risk Serbian company is selling futures contract (3000t) for September delivery on Black Sea Regional future market. There are two possible scenarios:

Scenario 1: the price on spot market in October is 232 US dollars/t. The Serbian company will received profit of 20 US dollars/t on futures market, but as the wheat is actually sold for 232 US dollars/t, final result is:

232 $/t (price received at spot market) + 20 $ (gain on future market) = 252 (planned price in May)

Scenario 2: the price on spot market is 272 US dollars/t. The Serbian company will have loss of 20 US dollars/t on futures market, but as the wheat is actually sold for 272 US dollars/t, final result is:

272 $/t (price received at spot market) - 20 $ (gain on future market) = 252 (planned price in May)

In both cases Serbian company will receive planned amount of 252$/t, in the case if the spot price is lower than planned price will be compensated with profit on future market and if the spot price is higher than planned, actual price will be lowered to planned price by loss on futures market. In both scenarios basis (difference in spot prices at which grain is sold and future price) remain unchanged and it is so called perfect hedging. In practice basis is not remain at zero and it can disturbed planned hedging strategies.

It may be concluded that the sum of all the gains in the futures market for agricultural products is equal to the sum of all the losses, so that it can be said that this is a zero sum game. All these characteristics are achieved through the specific futures trading mechanism, based on a system of margins and daily adjustments (market to market). The existence of these mechanisms means that the parties have deposited a certain amount (the margin) in securing payment. There are two types of margin: initial and daily maintenance margin.

Methodology and data sources

Based on the nature of the research, the paper used different scientific methods applied in the social sciences: case study approach (using examples); method of interview with relevant experts in the field of establishing commodity exchanges model and risk management of agricultural enterprises in the commodity markets; survey method with potential participants in the commodity-exchange market; statistical methods in analysing the collected data, as the possible tool in use of quantitative and qualitative analysis and synthesis (correlation and regression analysis), where all parameters are presented by tables and graphs.

Importance of introduction of Black Sea Futures market is that market will allow risk management regarding to grain price changes in futures for Serbian, Romanian and Bulgarian agricultural companies (USAID, 2002). For export companies which are selling grain (FOB Black Sea ports) it will be *ideal hedging* (Wisner, 2010), because of close correlations between spot and futures grain prices.

Current commodity exchange trading in Romania, Bulgaria and Serbia

One of the biggest constraints for development of an efficient futures market is the potential volume of trade. A joint market of the three countries will enhance the possibility of establishing this kind of market. Wheat prices in Romania, Bulgaria and Serbia reflect similar trends and are becoming increasingly positively correlated.

For a joint futures market, EU directives on markets in financial instruments 2004/39, is important for establishment of futures market for Black sea Region, as it establishes a mutual legislative basis for a commodity derivatives market. This regulation is obligatory for all of three countries. The most advanced commodity exchanges in three countries are: Commodity Exchange Novi Sad (CENS), Romanian commodity exchange (BRM) and Sofia Commodity Exchange (SCE), can be participants in the futures market.

Commodity Exchange Novi Sad, Serbia (CENS). There are two types of market at the CENS: spot and forward. At the spot commodity markets Commodity Exchange Novi Sad trades: (1) wheat, (2) corn (3) barley, (4) oats, (5) rye, (6) components of animal feed, (7) soybean meal (8) sunflower meal, (9) wheat meal, (10) feed barley, (11) fish meal, (12) alfalfa meal (13) seeds, (14) mineral fertilizers, (14) industrial plants. On the forward market grain is traded on a small scale. The Commodity exchange Novi Sad has no electronic trading platform.

Table 1. Serbian wheat quality standard

Name	Wheat
1. Mass in hectolitres, kg/hl min.	78.0
2. Humidity, % max.	15.0
3. Impurities, % max., consisting of:	8.0
- organic white, % max.	5.0
- spoiled grains, % max.	2.0
- grains damaged by pests, % max.	2.0
- germinated grains, % max.	1.0
- other cereals, % max.	1.0
- foreign bodies, % max., out of which:	0.5
- inorganic, % max.	0.25
4. Damaging and/or toxic seeds, grains containing, % max.	0.25
Contract size	**20 tonnes**

Source: Commodity exchange Novi Sad, Available from: www.proberza.com/index.php?page=standardi (Accessed at 22 Jan 2009).

Romanian commodity exchange (RCE/BRM) - Romania. BRM began work on the principle of auction on the floor and trading without restriction - all types of goods for which there was a supply / demand were traded. In 1994 the exchange successfully introduced trading with currencies in the spot market. In 1995 forwards on foreign currencies were introduced, and in 1998 futures on foreign currencies. Success in currency trading has enabled the stock market to invest in the development of futures markets for agricultural products. In 2000 electronic trading platforms were introduced. Progress in the development of trading in the futures of grains has been slow, primarily because the lack of an appropriate legal framework related to warehouse receipts, for which an indemnity fund has not been set up, so there are insufficient guarantees for safe delivery of products.

Table 2. Wheat quality standard at the BRM

Name	Wheat I	Wheat II	Wheat III
Wheat quality			
1. Mass in hectolitres, kg/hl min.	77.0	75.0	70.0
2. Humidity, % max.	14.0	14.0	14.0
3. Impurities, % max., consisting of:	3.0*	5.0*	7.0*
- cracked grains, % max.	2.0*	5.0*	8.0*
- weak grains, % max.	0.5*	1.0*	1.0*
- spoiled grains, % max.	0.5*	1.0*	2.0*
- grains damaged by pests, % max.	0.5	1.0	1.0
- germinated grains, % max.	1.0*	2.0*	3.0*
- other cereals, % max.	1.0	1.5	2.0
- foreign bodies, % max., out of which:	0.5	0.5	0.5
- inorganic, % max.	0.3	0.4	0.5
4. Damaging and/or toxic seeds, grains containing	0.05	0.05	0.05
smut and ergot, % max., out of which:	0.05	0.05	0.05
- each of the toxic seeds, % max.	min. 26	min. 24	min. 20
- ergot, % max.	4 – 12	4 – 15	4 – 15
5. Content of wet gluten ISO	Min. 250	min. 250	min. 220
6. Index of gluten deformation			
7. Falling index			
Contract size (standard size)	**100 metric tonnes**		

Source: Romanian commodity exchange, Available from: http://brm.ro/index.php?page=cash-market/cereals/specifications (Accessed at 11 Oct 2013).

* The maximum content of cracked, weak, spoiled, pest-damaged grains and other cereals shall not exceed 6% of the total for the 1st quality; 10% of the total for the 2nd quality and 15% of the total for the 3rd quality.

Sofia Commodity Exchange (SCE) was established in 1991. On the Commodity Exchange in Bulgaria only agricultural products are traded. Bulgaria has established a highly efficient system of warehouse receipts in paper form, used for the physical delivery of goods after pairing stock orders. On the Commodity Exchange in Sofia, spot and commodity derivative markets are established. Options and futures on several standardized contracts are traded: food wheat, barley, forage, bear barley, corn, sunflower, black and white beans. Trade takes place in the general auction at which the participants trade. The standard contract size is 15 tonnes, and the delivery time up to 17 months. Exchange commission for trading grains is 0.15% and for other agricultural products 0.2%.

Table 3. Wheat quality standard at the SCE

Name	Wheat
Wheat quality	
1. Mass in hectolitres, kg/hl min.	76.0
2. Humidity, % max	14.0
3. Protein contents	Min 11,5
4. Wet Gluten	min23-24%
5. Falling index	min 220-230
6. W - alviografic analysis (the strength of the flour)	min 120-130
7. Impurities	max 1%,
8. Including Noxious	max 0,1%
Contracts size	15 tonnes

Source: Sofia Commodity Exchange (data received upon request).

The selected countries share an interest in exploring opportunities to increase grain trade through the development of a grain futures contracts.

Several major international exchanges that are active in futures-market contracts outside the target countries have expressed strong interest in exploring efforts to develop a futures market in Southeast Europe and the Black Sea Region, including the Budapest Commodity Exchange - Hungary, the Warenterminborse Exchange – Hanover - Germany, the Chicago Board of Trade- USA and the Minneapolis Grain Exchange - USA.

Implementation of futures contracts, however, depends upon certain necessary infrastructure components being in place.

With proper infrastructure development, a futures contract on wheat appears feasible for Romania, Bulgaria and Serbia. For example, production volumes and price volatility are sufficient to support a joint futures exchange. Furthermore, key industry representatives have expressed strong interest in using a regional futures contract for wheat.

Results and discussion

In order to establish joint future market it is needed to have compatibility between all three markets. In that regard comparison is made in the Table 4.

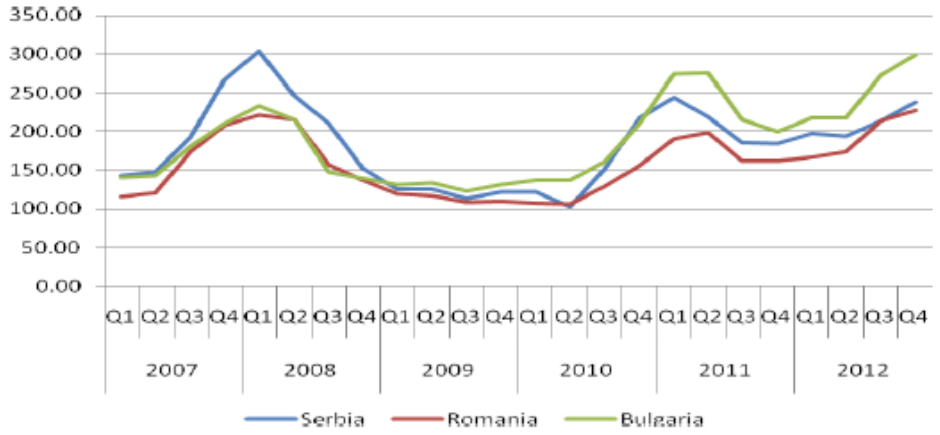
Table 4. Comparison of important elements for establishing a common grain futures market for Serbia, Romania and Bulgaria

Country	Wheat production in 2012 in '000 tonnes	Customs barriers	Wheat quality standards	Trading platform	Warehouse receipts	Clearing and settlements in house
Serbia	2,921	No	Different	Non electronic	Well developed	No
Bulgaria	4,458,5	No	Different	Electronic	Well developed	Yes
Romania	5,215	No	Different	Electronic	Moderate	Yes

Source: Serbian grain fund (data received upon request).

Essential for decision to establish common futures market is to evaluate if there is substantial price correlation on spot markets between countries (Wright, 2009.).

Graph 1. Monthly prices of wheat in Serbia, Romania and Bulgaria in 2007-2012, prices are in EUR



Source: According authors' calculation

Sufficient price volatility and price correlations among the markets could be observed from graphs 1, 2, 3 and 4, and Table 5. Price volatility is essential for the futures market to enhance the need for the use of futures contracts by hedgers and speculators.

The price correlation between the three countries is important for the implementation of the hedging strategies. Closer correlation is better and gives the possibility to hedgers who are not selling at the Black sea ports to use the common futures market as well.

Table 5. Correlations in wheat prices for Serbia, Romania and Bulgaria in 2007-2012

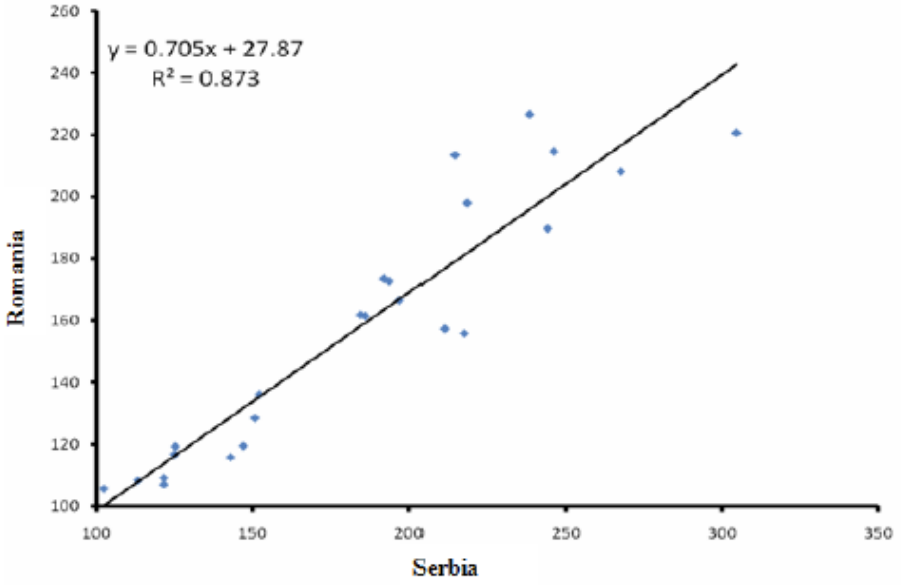
		Serbia	Romania	Bulgaria
Serbia	Pearson Correlation	1	.935	.793
	Sig. (2-tailed)		.000	.000
	N	24	24	24
Romania	Pearson Correlation	.935	1	.893
	Sig. (2-tailed)	.000		.000
	N	24	24	24
Bulgaria	Pearson Correlation	.793	.893	1
	Sig. (2-tailed)	.000	.0000	
	N	24	24	24

Source: According authors' calculation.

*Correlation is significant at the 0,01 level (2-tailed)

Statistical analyses in Table 5 show significant correlation between spot wheat prices in Serbia, Bulgaria and Romania. Price correlation is sufficient for creating joint wheat futures market among these three countries.

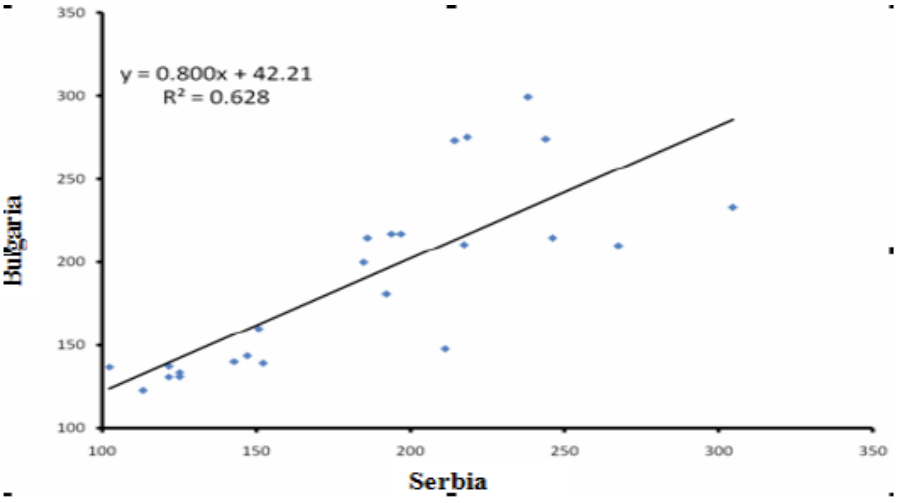
Graph 2. Graphical representation of wheat prices correlations (EUR/t) in Serbia and Romania, with determined linear regression and coefficient of determination, for period 2007 - 2012.



Source: According authors' calculation.

Conclusion may be drown from analyse in Graph 2, that sufficient price correlation exist between Romania and Serbia for creation of joint wheat futures market.

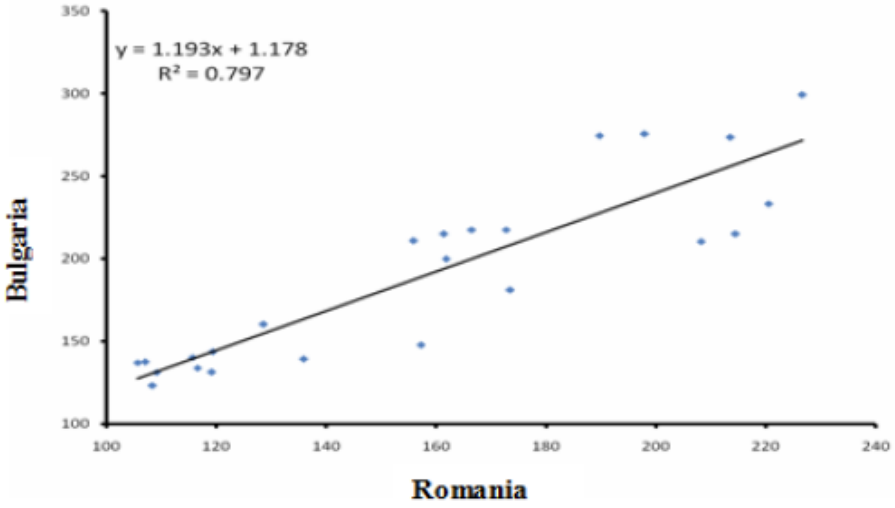
Graph 3. Graphical representation of wheat prices correlations (EUR/t) in Serbia and Bulgaria, with determined linear regression and coefficient of determination, for period 2007 - 2012.



Source: According authors' calculation.

Conclusion may be drown from analyse in Graph 3, that wheat prices are less correlated compared to graph 3, but correlation is still sufficient between Bulgaria and Serbia for creation of joint wheat futures market.

Graph 4. Graphical representation of wheat prices correlations (EUR/t) in Romania and Bulgaria, with determined linear regression and coefficient of determination, for period 2007-2012.



Source: According authors' calculation.

Conclusion may be drown from analyse in Graph 4, that sufficient price correlation exist between Romania and Bulgaria for creation of joint wheat futures market.

Current market information systems must be strengthened, standardized contract terms developed, assurance of contract performance established, joint clearing and settlement system, joint trading platform etc. implemented before a regional futures contract for wheat can be fully realized. An effective clearing system is most feasible in conjunction with an established exchange and with an established and functioning clearing house.

The basic essentials for introduction of a successful futures contract are:

1. Adequate crop size. According to information from Table 4 all counties have a sufficient quantity of wheat.
2. Sufficient price volatility. According to Graph 1, there is high price volatility that needs to be managed by hedging strategies.
3. Appropriate positive correlations among the markets. According to Table 4 and Graph 2, 3 and 4, there is a close correlation between the markets.
4. Supportive legislation, common EU regulation is in place.
5. Standardized contract terms. In all three countries different wheat quality standards are in use. There is a need to establish a common grain standard and a quality monitoring mechanism.

6. An effective clearing system. Serbia is only country without a legal base for establishing the house clearing system. A clearing system in Serbia and a system of clearing and settlement between the exchanges need to be established.
7. Market information systems at national levels. National governments need to further develop market information systems and disseminate information in English.
8. A mechanism for delivering goods. Warehouse receipts are important for delivery of goods. Romania needs to support the system of warehouse receipts by establishing an Indemnity fund. Bulgaria and Serbia have highly developed systems of warehouse receipts. It is recommended for all three countries to establish an electronic system of warehouse receipts as it is more secure than the paper form of warehouse receipts, carries less cost for traders etc.

For the successful development of a joint futures market requires the following:

1. Joint managerial and supervising body,
2. Liberalised market without custom barriers,
3. Common quality standards for wheat,
4. Established a system of quality control by certified laboratories,
5. A common trading platform,
6. Established clearing and settlement mechanisms,
7. Established a system of delivery.

The establishment of warehouse receipts system for delivery of goods when delivery is requested. Serbia and Bulgaria have successful warehouse receipt systems with a state indemnity funds. Romania has established a system of warehouse receipts that are not secured by state guarantees and the guarantees for delivery in Romania must be increased, otherwise the system will not offer the same guarantees in all countries, and trading participants would have to know in which country deliveries will be made, which violates the *automaticity* of trading and reduces market liquidity,

Establishment of a joint market information system that provides fair and timely reports for all participants. All three countries have to develop market information systems on agricultural products and should ensure that they can be accessed in English, which could include reports on prices, trading volume, and other relevant market information.

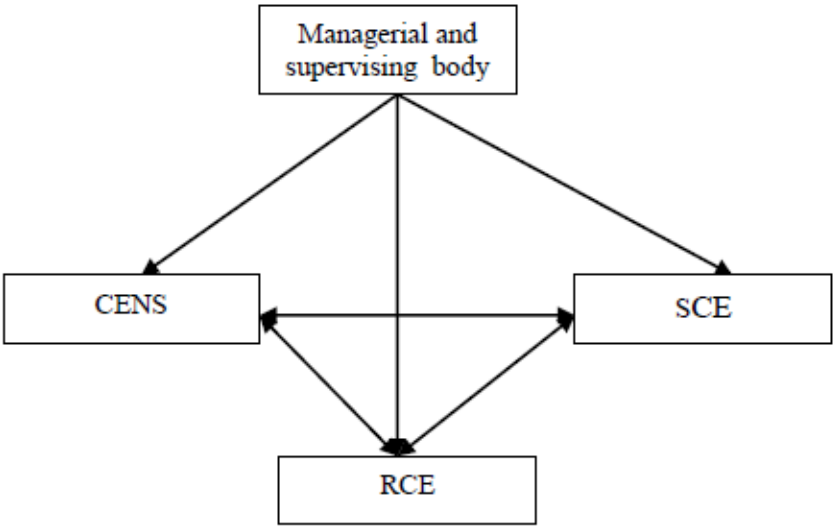
Table 6. Possible elements for wheat future contract in the Black Sea Region

Wheat quality standard	Impurities	max. 2 %
	Moisture	max. 14 %
	Density	Min 78 kg/HL
	Falling number	250 min.
	Protein content	11,5%
	W	160 min (ISO/ICC)
Contract size	3 000 T	
Margin	5,25%	
Delivery	FOB Constanta-Romania	
Price	US dollars	

Source: Authors' opinion.

For successful development of futures market it is essential to develop futures contract with elements common to the spot market at that region i.e. the size of contact needs to correspond to usual transportation capacity (for Black Sea spot market delivery is done by barge with capacity of 3.000 t).

Scheme 1. Black Sea wheat futures market - possible organisational scheme



Source: Authors' opinion.

Following the introduction of the futures contract for wheat, it would be possible to introduce futures for corn.

Grain spot market in the Black Sea region could be introduced as well. On the spot market it would be possible to trade exclusively with warehouse receipts.

Forwards on grain in the Black Sea region could be introduced as well. Seller's trading order needs to be followed with warehouse receipts and the buyer needs to deposit margins

similar to those of futures trading.

For development of a successful wheat futures market, all institutions and governments must complete their tasks.

Managing body of the Black Sea Region's futures market must be responsible for:

- Introduction of a new contracts and deciding on all elements of the contract.
- Issuing/revoking licenses to commodity exchanges.
- Suspending trade.
- Managing the system of guarantees under the EU investment protection scheme.
- Managing daily price change limit.
- Managing organizations in charge of controlling the quality and quantity of goods.
- Arbitration and penalty, all trading orders have to have the provision that international arbitration of the managing body is accepted.
- Informational function, to publish reports on: volume of trade, open/close prices, min/max prices etc.
- Calculation of referent price for daily margin settlement.
- Issues related to delivery of goods.

Tasks of commodity exchanges:

- All issues related to acceptance of trading orders and placing them in the system;
- Clearing and settlements for clients as well as clearing and settlements with other commodity exchanges on a daily basis;
- Dissemination of Information i.e. volume of trade, open/close prices, min/max prices etc.;

Government tasks:

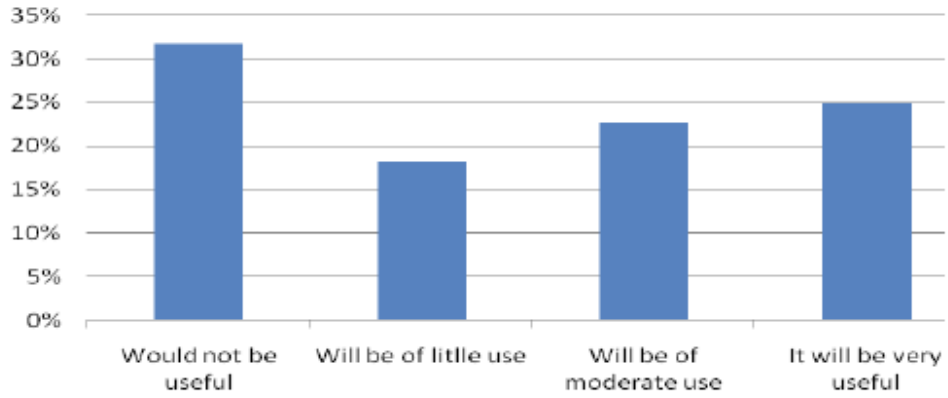
- To establish an Indemnity fund for the Romanian government, in order to improve the guarantee under warehouse receipts.
- All governments should introduce electronic warehouse receipts.
- To develop national market information systems for agricultural products, containing information on prices, predictions of crop yields, national economic indicators etc., disseminated in English.
- Maintained a liberalized market between the three countries, without export bans.
- Establish an efficient paying system between the countries, with low transaction fees.
- Establish tax policies with no taxes on investment security deposits and margin accounts etc.

For the purpose of estimating the needs for regional grain futures market, questionnaire is performed in Serbia, Romania and Bulgaria.

Survey is based on the question: Establishment of the international futures market for corn and wheat in the Black Sea Region: (1) would not be useful, (2) will be of little use, (3)

will be in moderate use and (4) would be very useful. The questionnaire is performed on 88 farms/companies in Serbia, 49 farms/companies in Romania and 51 farms/companies in Bulgaria classified according to the criteria that the value of crop production in the 2012 was more than 100,000 EUR. The questionnaire is conducted in period May-July 2013. For the selection of holdings/enterprises is used classification of Farms accountancy network data in Serbia, Romania and Bulgaria.

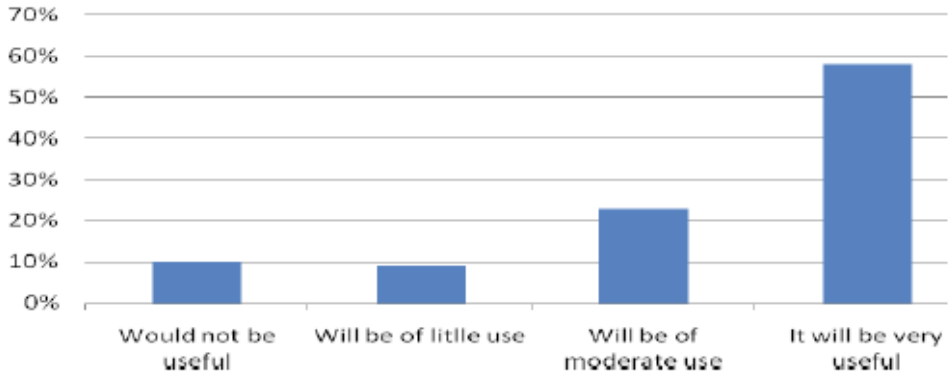
Graph 5. Analysis on the importance of introduction of wheat futures in Romania, Serbia and Bulgaria for Serbian agribusiness sector



Source: According authors' research.

From Graph 5 can be concluded that the majority of participants 32%, have opinion that would not benefit from the futures market, while 25% believe that the common futures market was important to their business. Given that it is a market in which the transport is done by barges and futures contracts is on a large amount of goods, it is understandable that small and medium-sized agricultural enterprises do not see the option to participate in these markets. Large producers and traders will definitely be able to use futures contracts in the common market and thus ensure the price of grain, which is expected to have indirect effects on other agricultural companies that have contracted production or are otherwise related to large enterprises.

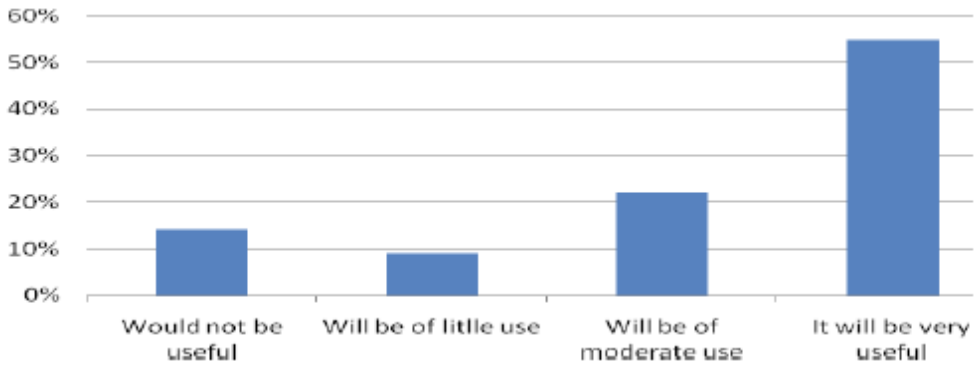
Graph 6. Analysis on the importance of introduction of wheat futures in Romania, Serbia and Bulgaria for Romanian agribusiness sector



Source: According authors' research.

Romanian agribusiness sector has been showing most interest in Black Sea Region futures market with 58% enterprises with opinion that this market will be very important, while Bulgaria enterprises are with 55%.

Graph 7. Analysis on the importance of introduction of wheat futures in Romania, Serbia and Bulgaria for Bulgarian agribusiness sector



Source: According authors' research.

Overall interest for joint futures market in all three countries is significant. Higher interest in Bulgaria and Romania is consequence that traders of agricultural products in these two countries are already using futures markets domestically and have more knowledge on benefits of this kind of markets.

Conclusion

At the begging of the 21st century, an attempt was made with the support of USAID to establish a joint futures market for the Black Sea region countries and the countries of Central Europe. Despite the expressed needs of the industry in these futures markets, the system

has not been established primarily because the future market was planned to include too many countries from the start. That was not realistically possible, given that most countries had different payment systems, different standards of wheat quality, trade barriers between countries, not all countries have a system of warehouse receipts, etc.

A joint grain futures market would allow Romanian, Bulgarian and Serbian grain traders, as well as participants from others countries to hedge the grain price, which is of great importance since the volatility in wheat prices is high.

The analysed volatility of grain prices and the fact that a large amount of grain is contracted for delivery to the ports of the Black Sea create the need for instruments that can allow traders to hedge prices in the future.

There was the assumption that the wheat futures market could be established between Serbia, Romania and Bulgaria, and other countries can be included later in the already established market, after fulfilling the necessary conditions for inclusion.

Analyses indicated that Serbia, Romania and Bulgaria have sufficient production for establishment of future market. Prices in all three markets are highly correlated, which is a basic condition for the application of hedging strategies.

In terms of quality standards for wheat, no country now applies the same standard, which requires the introduction of a common standard for the quality of the wheat traded in the futures market.

A common electronic trading platform is essential and an associated clearing system between the commodity exchanges that on a daily basis provide clearing and settlement to the clients and between the commodity exchanges.

The basic condition for the establishment of futures, spot and forward markets for wheat is to establish a system of safe delivery. In the case of all three markets safe delivery of goods can be achieved through establishing a full system of warehouse receipts, which should be in electronic form.

After fulfilling all the above conditions, the establishment of an organizational structure with a managerial and supervisory body to manage the common market is recommended. Instead of establishing the specified body it is possible to organize exchanges by large exchange systems as CME and EURONEXT.

A joint grain futures market would allow Romanian, Bulgarian and Serbian grain traders as well traders from others countries to hedge a grain price, which is of great importance since the high volatility in wheat prices.

Hopefully the results and conclusions presented in this work will support the idea to restart the initiative to establish a futures market for delivery to the ports of the Black Sea Region.

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USPOSTAVLJANJE FJUČERS TRŽIŠTA ZA ZEMLJE CRNOMORSKOG SLIVA

Vlado Kovačević[2]

Rezime

U okviru ovoga rada analizirane su mogućnosti i mehanizmi za uspostavljanje fjučers tržišta za žitarice u Crnomorskom regionu. Prelaskom sa plangske na tržišnu ekonomiju pojavila se potreba u poljoprivrednom sektoru Srbije, Rumunije i Bugarske za razvojem tržišnin mehanizama koji bi omogućili poljoprivrednim proizvođačima: planiranje proizodnje, prodaju proizvoda i osiguranje cene poljoprivrednog proizvoda u budućem periodu.

Početkom dvadesetog veka pokušalo se sa uvođenjem fjušers tržišta za pšenicu za zemlje Crnomorskog sliva uz podršku USAID, bez uspeha.Razlozi neuspeha projekta su pre svega u pokušaju da se u istom trenutku uključi veliki broj zemalja koje: (1) imaju različite standarde za kvalitet pšenice, (2) različite i često nekompatibiblne platne sisteme, (3)carinske barijere i sl. Predlog koji je iznet u okviru ovog rada je da se uspostavi fjučers tržište za pšenicu za Srbiju, Rumuniju i Bugarsku, koje imaju liberalizovano tržište i zajedničku EU regulativu vezanu za robne derivate. Nakon uspešnog uspostavljanja navedenog tržišta moguće je pojedinačno uključenje drugih zemalja Crnomorskog sliva na već funkcionalno tržište.

Očekuje se veliki obim trgovanja na regionalnom fjučers tržištu iz dva razloga: prvo velike količine svetskog prometa pšenice ugovaraju se za isporuku na lukama Crnog mora i drugo u poslednjih nekoliko godina je visoka fluktacija cene pšenice, što nameće potrebu trgovcima za korišćenje fjučersa u cilju osiguranja cene pšenice u budućem periodu.

Članstvo rumunije i Bugarske u Svetskoj tgrovinskoj organizaciji i Evropskoj uniji kao i status kandidata Srbije u dve navedene organizacije, daje garancije da će trgovanje između tri zemlje ostati liberalizovano. EU direktive vezane za zaštitu investitora i robna derivatna tržišta koje su u obavezi da primenjuju sve tri zemlje utiču pozitivno na mogućnost formiranja zajedničkogfjučers tržišta za žitarice.

Ključne reči: *robne berze, fjučers ugovori, hedžing, robni zapisi.*

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MARKET ANALYSIS OF CLUSTERS IN SERBIAN AGRIBUSINESS[1]

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Summary

In the national economy clusters have been recognized as an instrument for strengthening productivity and innovation in Small and Medium Enterprises, as well as an instrument for regional development starting from 2005, when the Ministry of Economy and Regional Development began with the implementation of development projects of the first clusters. The ministry along with other government and foreign institutions, which worked to build clusters based on the projects, has provided support for cluster development in the national economy. The subjects of this paper are clusters in Serbian agribusiness registered until June 05, 2013. The aim of this work is to identify main characteristics of clusters, problems in their functioning, and to propose measures for cluster promotion in the future. This is achieved by market analysis of clusters or survey in the form of interviews. The research results indicate that clusters in Serbia were unable to develop until middle of 2013. They still possess low operative, innovative and export capacities, and there is a lack of key contributions of clusters to creating a unique regional specialization of labor and knowledge, as well as increasing regional competitiveness. In the future cluster development in agribusiness will be directly related to the creation of a favourable business environment for SMEs, stimulative and predictable agricultural policy, as well as developed entrepreneurial initiatives aimed at joint activities and cooperation.

Key words*: clusters, agribusiness, competitiveness, productivity, innovation.*

JEL: *R11, O12*

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Introduction

Clusters are an integral part of the business environment in developed economies and show a significant contribution to the competitiveness of involved cluster members, regional and national competitiveness. In the field of agribusiness they are one of the methods of developing and improving the sector and producer competitiveness, too. Networking of agricultural producers, government institutions and agencies, scientific and educational institutions, as well as organization for support small and medium enterprises (abbreviation SMEs), provides preconditions for creating a sustainable competitive advantage for agricultural producers and higher export and recognition of products in international market.

Although cluster development in Serbian economy started in 2005, for the time being (middle of 2013) clusters in Serbia have not been developed. According to the survey of business infrastructure in Serbia (Mijačić, 2011): (1) clusters in Serbia lack the lowest common denominator in terms of defining the interests around which the cluster members are gathered, (2) cluster capacities are not developed enough, with low intensity of activities, given that companies are usually not active in cluster functioning and are rarely willing to invest their time in cluster activities, (3) the vast majority of clusters have failed to build trust and close relationships with their members, and participation of connected institutions is mainly symbolic, with no significant results in improving the competitiveness and developing new products for cluster members.

The subject of this paper is market analysis of the existing clusters in Serbian agribusiness, with the aim to identify all cluster characteristics, their specificities and problems in functioning. Based on the results of market analysis of the clusters and on the study of world literature on clusters and best practices for cluster development in developing and transition countries, the aim of this paper is to propose measures necessary for the promotion of clusters as an important instrument for creating the competitiveness of agriculture and food sector as well as an instrument for rural and balanced regional development.

Although the subject of this paper has been defined as cluster research in Serbian agribusiness, it is important to point out that in the economies of transition and developing countries (such as Serbia), which have recently started to use the concepts of clusters, in most cases there are no "real" clusters or clusters as empirical/market phenomenon of grouping the companies and institutions in a particular region and economic segment, based on the tradition of production, entrepreneurial spirit, cooperation among companies and market strengths. When we speak of clusters in these countries we speak of ***cluster initiatives and cluster organizations***, which are often identified as clusters. According to (Sölvell, Ketels and Lindqvist, 2003, EC, 2008):

- Cluster initiatives are public and private initiatives defined as organized efforts to increase development and competitiveness of clusters within a region, through joint activities of companies, government (state institutions) and/or scientific research institutions.

- Cluster organization is often part of a cluster initiative defined as a legal entity or public and private organization of cluster management, which usually participates and takes part in the premises, facilities and activities of the cluster.

Although the authors in this paper discuss about clusters in Serbian agribusiness (and use the term "clusters") in fact it is all about cluster initiatives. Furthermore Serbian agribusiness is seen as process of producing food, feed, fiber and other goods by the systematic raising of plants and animals, and as sector of food manufacturing industry.

Research methodology

Market analysis of clusters in Serbian agribusiness was conducted through a questionnaire or through interviews with cluster managers or representatives of institutions involved in development and implementation of cluster initiatives. The market survey was carried out from June 15 to July 15, 2013, and the interview was conducted by phone lasting approximately 30 minutes. The survey was based on prepared questionnaire, which contained all the issues relevant for cluster evaluation, or issues related to: (1) the organization, operation and financing of clusters; (2) the number of members and their way of networking; (3) problems and limitations in functioning; (4) proposed measures to improve clustering.

In order to achieve data on the number of clusters in Serbian agribusiness, the authors have used the database of registered legal entities and entrepreneurs at the Serbian Business Registers Agency (Serbian Business Registers Agency, 2013). Search for agri-food clusters at Serbian Business Registers Agency (abbreviation SBRA) database was made on June 5, 2013 in two rounds. In the first round, searching for legal entities and entrepreneurs using the keyword "cluster", it has been found that in their name the word "cluster" have: (1) 10 companies; (2) 2 entrepreneurs; (3) 101 associations and (4) 4 foundations. In the second round, searching for legal entities and entrepreneurs that have the word "cluster" in their name was carried out using keywords, such as "agriculture", "agro", "agroindustry", "rural", "food", "plants", "beef", "wine", "grains", "vegetables", "fruit", "bio" and others words related to agriculture. In this way a list of 39 registered clusters at SBRA database has been obtained. These clusters operate in Serbian agribusiness, of which only 4 exist in the legal form of a nonprofit joint stock company, and the remaining clusters are registered as associations. Interesting fact is that the cluster "Somborski salaši" has been registered at SBRA both as an association and as a nonprofit shareholding company.

Large number of clusters identified in such way is already contained in cluster database available to the Serbian Chamber of Commerce, Cluster Council (List of mapped clusters in Serbia, September 07, 2012), as well as the umbrella organization of clusters "Cluster house", Niš (Cluster house, 2013). Since in cluster database of these institutions and organizations additional agricultural and food clusters have not been identified, it can be concluded that until middle of 2013 (actually up to June 15, 2013) in Serbia, at SBRA database, ***39 clusters in the field of agribusiness have been registered***. All these clusters have been involved in market analysis and questionnarie, through the interview method.

Of the total number of clusters, the authors were unable to make contact with only 6 cluster managers, so that 84.6% of the total number of identified clusters in Serbian agribusiness was the subject of market analysis.

In order to complete market analysis of clusters in Serbian agribusiness, using the interview method, a number of institutions in Serbia involved in cluster development have been questioned, such as: the National Agency for Regional Development (abbreviation NARD), Regional Development Agencies (abbreviation RDAs) to support SMEs sector, the program LEDIB "Cluster house", Niš (Paraušić, 2013).

The concept of clusters and cluster contribution to creating a sustainable competitive advantage of enterprises in agribusiness

In numerous studies and scientific works which have clusters as topic, researchers start from Porter's definition of ***clusters***. According to this author (Porter, 1998) "clusters are geographic concentrations of interconnected companies and institutions in a particular field" or "critical masses in one place, of unusual competitive success in particular fields". In addition, Porter (2008) also defines clusters as "geographic concentration of interconnected companies, specialized suppliers, service providers, companies in related industries and associated institutions (universities, agencies, chambers of commerce) in a particular field of activity that compete but also cooperate". Basic terms associated with cluster are (Porter, 2008; Enright, 2003; EC, 2008):

- Successful clusters are concentrated in one or more economic sectors within the region/city (***cluster density*** refers to the number of companies included in cluster or geographical vicinity of companies and institutions in specific geographic area and economic sector), they have ***width*** (established horizontal connections with cluster participants or developed relationships with companies that produce/provide complementary products/services and that have similar market position) and ***depth*** (vertical connections of members in the cluster or links of the companies in value chain from input purchase, to sale).
- ***Established public-private partnerships*** (especially in the field of university-industry collaboration in R&D; cooperation private companies with government bodies);
- Cooperation between the cluster members realizes through intensive ***cooperation,*** but also through ***competitive relation***;
- Successful clusters are characterized by the existence of, so called "***social glue"*** (developed confidence, cooperation and partnership among the companies, government bodies and scientific-educational institutions);
- Externalities (effects of transferring benefits, knowledge and innovation between the companies in cluster, but also outside cluster).

Porter emphasizes that clusters affect competition in three broad ways (Porter, 1998): (1) by increasing the productivity of companies based in the area; (2) by driving the direction and pace of innovation, which underpins future productivity growth; (3) by stimulating the formation of new businesses, which expands and strengthens the cluster itself. At the same time, numerous studies state a positive link between the degree of grouping of firms in rural areas and income growth in rural regions: rural clusters have higher earnings, compared to earnings of workers who work outside cluster, as a result of higher productivity and strong cluster effects of rapid flow of information, high accumulation of knowledge, skills, etc. (Porter, Ketels, Miller and Bryden, 2004).

A very important factor for improving agricultural production in all countries, especially in the transition ones, is ***productivity growth*** and this is more important factor than production growth (Liefert, Swinnen, 2002). Production growth can only lead to income growth in the agricultural sector, while productivity involves not only change in the production technology, but what is more important, change in the nature and behavior of companies, creation of commercial and public infrastructure and institutions to support production (credit system, provision of market information, legislative basis, etc.) Having in mind all that, it is important to point out that in the processes of increasing the productivity of domestic agriculture, significant, but unused instruments are clusters. By joining into a cluster, participants have the opportunity to increase productivity and "to compensate" everything that each individual is lacking of or to have the option of a common, efficient and cheaper approach to: capital/finances, specialized suppliers and labor, the market for their products, knowledge, information and research knowledge, etc. In addition, cluster members have the option of using government programs to develop physical infrastructure, public institutions, laboratories, technology transfer, training programs and the like.

The most important contribution of clusters to domestic agriculture is the ability, by using clusters, to move the focus of competitiveness of farmers from low prices and the exploitation of labor and natural resources to competition which is based on a high productivity, knowledge, economy of scale, innovations, high quality, modern technologies, networking. Even though the EU market offers great opportunities for Serbian agriculture exports, the results will depend on the success in improving two key determinants of competitiveness: productivity and quality (Antevski, Petrović, Vesić, 2012). In both cases, the clusters are recognized as a form of association that can contribute to the productivity growth of agricultural production, high quality and innovation, all of which leads to the acquisition of sustainable sources of competitiveness of producers in domestic and international markets. Also, it is important to point out that clusters can be seen as a way for improving of efficiency and effectivity of company organization (Nikolić, Cvijanović, Grujičić, 2008).

The analysis of characteristics of clusters registered in the field of Serbian agribusiness until middle of 2013

Based on the identification of clusters registered in the field of agribusiness at SBRA database and their market analysis (Paraušić, 2013), it can be noted that, by regions,

the list of agricultural and food clusters (according to the place of their registration) is the following:

- there are 10 clusters in the region of Belgrade;
- 15 clusters are in Vojvodina;
- 8 clusters belong to the region of Šumadija and Western Serbia, and
- 6 clusters have been registered in the region of South and East Serbia.

The largest number of clusters is registered in Vojvodina, and in most cases the clusters are registered in the major urban centers (Belgrade, Novi Sad, Nis, Kragujevac), where is also the largest concentration of institutions and regional agencies that support cluster development. The basic characteristics of surveyed clusters in Serbian agribusiness are given below (Paraušić, 2013):

- **Legal form.** The largest number of clusters is registered in the legal form of an association. Only 4 cluster initiatives (Rakovica agro cluster, Belgrade; Plants United, Belgrade; Somborski salaši, Sombor and Agro cluster Obrenovac) are registered as a nonprofit joint-stock company;
- **Year of cluster establishing.** The largest number of clusters was registered after the Law on Associations (Official Gazette of the Republic of Serbia, No 51/2009) has been adopted, that is since 2009;
- **Method of cluster establishing.** In most cases clusters were established or initiated by RDAs, that secured the funds for cluster development through the EU projects (IPA fond 2007-2013[5]; South East Europe - SEE 2007-2013), local projects to encourage employment and innovation clusters and SMEs (funded by the state, provincial or city/municipal budget) or by applying for programs of foreign governments and agencies (LEDIB/ Danish programme for local economic development in the Balkans; cluster support of the Kingdom of Norway; Agribusiness project of the U.S. Agency for International Development/USAID; Swiss Agency for Development and Cooperation, the European Partnership with Municipalities Programme- EU Progres funded by the EU and the Government of Switzerland).
- **Number of cluster members and critical mass of participants.** Cluster members are usually: registered family farms, SMEs and entrepreneurs in the area of production and trade in agricultural and food products, agricultural cooperatives, farmers' associations, as well as supporting institutions, such as: schools and universities, scientific research institutes, certification bodies, agricultural extension services, RDAs, experts of various profiles and the like. The number and structure of cluster members usually meet or exceed the minimum number of members that NARD requires for cluster support (NARD, 2013). However, despite the vast membership, clusters do not have critical mass of participants, since there is no membership of big and strong market

5 SECEP Programme for Competitiveness and Export Promotion; Programme RDEPR 2; Exchange 3 programme, Cross Border Cooperation Projects and the like.

companies/producers, and very often the membership of some companies and institutions is only formal.

- **Organizational cluster network.** In the field of agribusiness there are no real clusters, because most of them are similar to associations, cooperatives or NGOs. Networks of cluster participants with suppliers, companies in related industries, and supporting institutions are insufficiently developed. The following cluster characteristics make them significantly similar to associations: (1) there are some clusters which as members have only companies that deal with the same kind of activities or the same processes in the value chain; (2) small number of clusters has developed the necessary depth (vertical connection of the companies in the product value chain)[6];(3) participation of some companies, especially scientific and education and research institutions is often formal (required by tender conditions); (4) cooperation among cluster members is very small (especially in terms of meetings, exchange of knowledge, ideas, information, as well as in terms of addressing common infrastructure problems or joint placement of the products);
- **Sources of funding.** Almost all clusters are characterized by the lack of sustainable and stable sources of funding for professional management and cluster activities, and great reliance on project-based funding (along with budget or donor support). In particular, NARD, provincial funds, EU funds, city/municipality funds and various donor funds are expected to support the work of cluster offices (funding for professional management), as well as almost all cluster activities: exploring foreign markets, promotion and participation in international fairs, export contracts, activities on transfering new technologies, education and introducting quality standards, commercialization of innovations and the like.
- **Entrepeneurial capacity (operation).** The surveyed clusters are usually not operative or have very low operative and entrepreneurial capacity. In most cases they are just cluster initiatives "on paper". Entreprises as cluster members are inactive and unwilling to invest their time and activities in joint projects and small number of cluster has employed a manager. Cluster activities are mostly related to organization of seminars, training, conferences, visiting fairs, creating websites, publications, etc.
- **Production and export capacities and market share.** Production and export capacities of cluster members are low, and the same situation is with market share of clusters in the sector of activity they belong to;
- **Innovation.** Clusters have low innovative potential because they lack economic or entrepreneurial strength for commercialization of innovations. In addition, there is lack of cooperation with scientific research institutions in R&D sector.
- **Market recognition.** Since they do not have critical mass of participants and capacity, clusters have no economic significance nor recognition at the local level, much less at the level of regional or national and global economy. Recognition in intrenational

6 In some cases, large dependence on imported components in almost all clusters prevents vertical expansion of the cluster, especially antagonistic relationship of producers with importers, who charge considerably high costs of imported components.

market shows only raspberry cluster in Arilje, which is not registered as a cluster, bit is in practice the concept of association that is most similar to the empirical concept of clusters.

- **Achievement of goals.** Although the goals of almost all cluster aim at increasing production, export and innovation, technology improvement, competitiveness of industry and members involved, opening of new plants and new jobs, in practice, cluster activities are mainly carried out in the areas of: (1) promotion and internationalization (participation in national and international fairs, study tours, creation of the cluster visual identity/cluster logo and website, creation of joint publications), (2) education (organization of seminars, training, conferences); (3) joint procurement of inputs and cost reduction based on that; (4) establishing formal cooperation/network between cluster members, by forming database about cluster members, through the organization of meetings and the like. Although these benefits do not contribute to the competitiveness of clusters and their members, in the first stage of cluster development it is realistic to expect those kinds of benefits (savings through consolidation of business functions, joint participation in international fairs or joint promotion activitites), and only with time and cluster strengthening joint product development and competitiveness improvement of the involved members can be expected (Horvat, Kovačević, 2004).
- **Problems in cluster functioning.** The functioning of clusters is facing numerous internal limitations of development, of which the most important are the following: (1) purpose or need to unite is not recognized; (2) there is lack of mutual trust; (3) conflicts between different groups are expressed; (4) there is lack of developed inner communication and mutual cooperation between cluster members; (5) lack of critical mass of clusters; (6) low financial capacity/resources of clusters; (7) low production, export and innovation capacity of clusters. In addition, cluster development is also limited by numerous external obstacles: (1) disincentive measures in agricultural policy; (2) underdeveloped business environment for companies and family farms in the agribusiness sector; (3) failed privatization of companies in the agribusiness sector and unresolved property and legal issues related to agricultural land; (4) ineffective legislative and judicial framework, etc.

Using the survey of key institutions involved in the production of agricultural products in which Serbia achieves great export results, the authors were able to identify geographic concentration of producers, which has certain characteristics of cluster networking, or the potential to develop in the future in a successful cluster (Paraušić, 2011). These are **the raspberry producers in the area of Zlatibor**, who are not legally registered as a cluster, but in practice have lots of elements that make them similar to cluster concept (Paraušić, 2011):

- High concentration of raspberry producers and cold storages in the Zlatibor region (the municipalities of Arilje, Bajina Bašta, Kosjerić, Požega);
- Producers are known in domestic and international markets;
- Producers achieve high production and export of raspberries;

- All participants in raspberry production cooperate closely: raspberry producers cooperate with numerous cold storages, that provide contracts for the production and necessary raw materials, and the producers are also supported by the Arilje Agricultural Innovation Center, Local Economic Development Office in Arilje, Association of Raspberry producers "Vilamet", Cold Storage Association "Ariljska malina" and the like.
- Long tradition in the production of raspberries;
- Raspberry has a distinctive and high quality.

However, the following factors make raspberry producers in the Zlatibor area distant from the essential function of clusters: (1) permanent conflict of interest between the producers, cold storages and exporters, (2) the absence of government programs to support producers (educational programs, infrastructure), (3) the absence of government actions in order to protect competition and lack of inspections in the field of combating the informal economy, (4) the producers and exporters are poorly supported from the agricultural budget, (5) small role of science and educational institutions in the field of production innovation and commercialization of innovations.

From the presented characteristics of clusters in Serbian agribusiness it can be concluded that the clusters are still new (in the initial period of functioning), they are not operative enough, and without sustainable or stable sources of funding. The largest number of clusters functions only at the local level, created with the support from RDAs (there is a lack of bottom-up approach in cluster development). Clusters do not have critical mass of participants, economic or market strength and they have very small production, export and innovation capacity.

Due to these characteristics, the clusters do not show their positive effects or contribution to the growth of productivity, innovation and competitiveness of the participating cluster members and the regions in which they operate. Furthermore, their positive influence on the entrepreneurship development, employment and the creation of new SMEs within cluster activities is often neglected. From the point of national economy/regional economy, clusters in Serbian agribusiness do not show contribution to the Gross Domestic Product of the country or region, regarding the following parametres: (1) the number of employess in the cluster in relation to the total number of employess in the sector/country/region; (2) the number of companies included in the cluster and an annual turnover of cluster members in relation to the number of enterprises and turnover of the agricultural sector/total or regional economy, (3) the share of cluster export in the export of a sector/country/region.

Regardless of all flaws, disadvantages and limitations of cluster functioning, it is still too early to evaluate the market sustainability of registered clusters in the future, especially having in mind the fact that many clusters are in their initial phase of functioning, and that the clusters will need ten years or even more to develop their depth and show their positive effects on the competitiveness of the participating cluster members and region in which they operate (Porter, 2008). However, what is certain is that the clusters are not successfully developed if these obstacles (problems in functioning), especially in the field of external limitations of development, are not eliminated or at least reduced.

Although the market analysis has showed that in Serbian agribusiness there is almost no real or substantial use of the cluster concept in practise, "Flower Producers Cluster", Kragujevac is one of a few successful clusters. Through some form of cooperative organization, this cluster has managed to survive on the market, provide some financial sustainability (through the collection of membership fees, mediation in the procurement of inputs and product sale) and achieve some results in terms of increased production, sales, technology improvement in flower production etc. (Paraušić, 2013). In a recent study of business infrastructure in Serbia (Mijačić, 2011), the author distinguishes "Flower Producers Cluster", Kragujevac as a positive example of clusters in the Serbian economy, with the following explanation: this cluster is financially self-sustaining based on income from membership fees, it was able to develop an effective financing mechanism of raw material supply for its members, improve the quality of flower production and in the best possible way gather small flower producers and producers of planting material from places near Kragujevac.

Proposed measures to build capacity and strengthen the competitive advantages of clusters in Serbian agribusiness

In the forthcoming period there is no doubt that an adequate support has to be provided for cluster development so that clusters can contribute to creating and strengthening the competitive power of domestic producers in domestic and international market. In order to support clusters, financial support from the government institutions will not be crucial, but rather actions that the state has been taken to remove limitations of SMEs development, which are located in macroeconomic policy and microeconomic business environment (eliminating external limitations of cluster development which has been discussed in the previous section). In this respect, it is necessary to create a ***favorable micoeconomic environment*** for SMEs, which is understood in accordance with Porter's National Diamond framework (Porter, 1990).

In Serbia, favourable micoeconomic environment implies: implementation of law, sanctioning of illegal business, create favorable conditions for investments and new employments, etc. Thus "natural" conditions for establishing and functioning of clusters will be created, as well as the conditions in which entrepreneurs/farmers will realize the purpose and need to unite. In creating a ***stimulative business environment*** role of the state will be crucial in the following:

- Provide stimulative and predictable agricultural policy, with bigger support for farmers from the agricultural budget;
- Develop an institutional framework for SMEs sector (effective legislative and judicial framework, effective law implementation, protection of ownership rights and intellectual property);
- Develop incentives for investment and innovative tax policies for companies working in the field of agribusiness, artisan food production according to traditional recipes, organic production, etc.;
- Develop financial market, with favorable funding sources and secure loans for investments in the innovation of technology, primary agriculture, export

business and so on;
- An effective policy to protect competition on the market (monopoly regulation, a company with a dominant position on the market, sanctioning the informal economy, etc.);
- Develop all the elements of the business infrastructure (business incubators, science and technology parks, etc.). Analysis of domestic authors (Vojnović, Cvijanović, Lazic, 2011), just indicate the need of potential entrepreneurs for the existence of entrepreneurial incubator to facilitate the first steps in bussines operations;
- Develop of organizations for providing consulting services in Serbia. According to the research of domestic authors (Mihailović, Tepavac, Kovačević, 2012), market of consulting services in Serbia has not developed significantly in last period and owners and managers of enterprises still do not feel a need for this services. Consulting services market in Serbia is very atypical, with massive number of small consultative organizations and extremely small number of big companies (Mihailović, Cvijanović, 2011).

In addition, the success of clusters in Serbian agribusiness will depend on eliminating ***internal limitations*** of cluster development, as well as on entrepreneurial initiatives of business entities in order to increase association, networking, implementation of joint projects and activities. Below are given the most important requirements in the field of internal cluster capacities:

- Provide stable sources of funding for cluster activities and projects;
- Increase the critical mass of clusters and their development in the regions and sectors where there is a regional recognition, specificity and tradition of agricultural production and processing, high concentration of producers/processors and a high level of knowledge and experience of all market participants;
- Active cooperation of cluster members (with the companies in the product value chain and with related companies) based on trust, long-term relationships, business ethics, and reached consensus on common objectives and cluster development strategy;
- Developed entrepreneurial and competitive spirit of cluster members;
- Increase the production, export and innovation cluster capacities.

However, the ***two most important elements in development of clusters with sustainable competitive advantages*** are:

- Support the cluster initiatives receive from the support institutions (Business Support Organisations or Business Service Providers), which help SMEs and companies in the cluster to increase their competitiveness in the national and international market (through technical, consulting, financial and other support). In Serbia these institutions are recognized as RDAs or the centres for SMEs development, as well as the local economic development offices established by the cities or municipalities. These institutions/departments have market recognition, the capacity to attract funding from the Serbian budget and the EU, as well as the capacity to assemble

participants from the public and private sector;
- Solving the issue of cluster financing. Through membership fees or by charging services that clusters provide, it is impossible to finance the cluster. Thus survival and functioning of the existing clusters in Serbian agribusiness will depend on the possibility of project financing of clusters. In this context, the clusters will directly depend on larger cluster support from the national, provincial or city/ municipal budget, as well as on the capacity of clusters to apply for EU funds or other donor funds.

All requirements necessary for cluster development in Serbian agribusiness are also requirements to create a sustainable competitive advantage of SMEs sector, requirements to increase export, employment and development of scientific research infrastructure and in general to achieve sustainable economic growth in Serbia. It is important to emphasize that none of these requirements alone can influence cluster development and sustainability, but all together, creating synergy, they make a favorable and stimulating environment for development of clusters and cluster initiatives.

Requirements for cluster development are based on the analysis of the world literature about the things that prevent cluster development in the less developed regions (Rosenfeld, 2002), factors that contribute to the cluster success (ERDA, 2003), based on the survey of clusters in Serbian agribusiness (Paraušić, 2013), and based on the analysis of adopted national documents that address the problem of cluster development and SMEs sector in Serbia (Paraušić, 2012).

Conclusion and recommendations

This paper analyzes the clusters in Serbian agribusiness (clusters registered until June 05, 2013 at SBRA database), using a survey, in the form of interviews with cluster managers or representatives of institutions involved in cluster development. The basic cluster characteristics and functioning problems have been emphasized, and a series of measures and actions are given for clusters to create their competitive advantage, survive on the market and become an instrument for rural and regional development in Serbia.

Although clusters in Serbia had, since 2005, budget support from the Ministry of Economy and Regional Development (now NARD support) and RDAs, that have worked to create clusters in the national economy based on the projects (through applying for funds from the national budget, EU funds, donor funds of foreign programs and governments), clusters in Serbian agribusiness have not been developed. They are still without visible results and effects on the growth of production, employment, export, productivity, innovation and competitiveness, or at the level of enterprises of cluster members, or at community level (at regional level). The market analysis showed that clusters in agribusiness are still new, unrecognized, underdeveloped, not operative, and they are very much similar to associations or cooperatives. There is lack of "bottom up" approach in cluster development, given that entrepreneurs lack knowledge about the cluster concept as well as the fact that the use of cluster networking in the current economic environment in Serbia is very faint.

The main reasons for underdeveloped clusters are external ones (unfavorable mascroeconomic and microeconomic business environment), but the reasons also lie in the very same clusters, or in their small financial strength, low production capacity, unbuilt trust and cooperation among cluster members.

Regardless of all flaws, disadvantages and limitations of cluster functioning, it is still too early to evaluate their sustainability or the potential of their development in the future, especially having in mind the fact that many cluster are new, and that the clusters will need ten years to show their positive effects on members and the region in which they operate. However, what is certain is that the clusters will be successfully developed if obstacles to their development, expecially in the field of external limitations of cluster development, are eliminated or at least reduced.

In this paper measures needed to create and improve the capacities and competitive strength of clusters are also presented. Financial support of government institutions will not be crucial in cluster supporting, but rather activities of the state in order to eliminate limitations of SMEs development and growth, which are located in the macroeconomic policy and microeconomic/ business environment (eliminating external limitations of cluster development). It is necessary to create a favorable institutional and stimulating business environment for companies and family farms, including agricultural policy incentives, stimulative fiscal measures, measures to support employment and investment, efficient legislative and judicial framework etc. In addition, the success of clusters will also depend on the elimination of internal limitations of cluster development (building trust, reconciliation of interests of different participants and forces, cooperation development between cluster members, increase the critical mass of clusters, increase production, innovation and export capacities), as well as on the entrepreneurial initiatives of business entities (farmers) in order to increase association and implementation of joint projects and activities. However, the most important requirement for cluster development and sustainability in the future, which is in the field of internal cluster capacities, will be solving the issue of cluster financing.

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TRŽIŠNA ANALIZA KLASTERA U AGROPRIVREDI REPUBLIKE SRBIJE

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Abstrakt

U nacionalnoj ekonomiji klasteri su prepoznati kao instrument jačanja produktivnosti i inovativnosti u sektoru malih i srednjih preduzeća, kao i instrument regionalnog razvoja tek 2005. godine, kada je Ministarstvo ekonomije i regionalnog razvoja počelo sa implementacijom projekata razvoja prvih klastera. Podršku razvoju klastera u domaćoj privredi tokom proteklih godina pružalo je kako resorno ministarstvo, tako i druge vladine i strane institucije, koje su na projektnom principu radile na izgradnji klastera. Predmet rada jesu registrovani klasteri u agroprivredi R. Srbije do 05.06.2013. godine, a cilj rada jeste da se kroz tržišnu analizu klastera, odnosno anketno istraživanje u formi intervjua, identifikuju osnovne karakteristike klastera, njihovi problemi u radu i predlože mere za afirmaciju klastera u budućnosti. Rezultati istraživanja ukazuju da klasteri u R. Srbiji do polovine 2013. godine nisu uspeli da se razviju. Oni su još uvek niskih operativnih, inovativnih i izvoznih kapaciteta, a izostaju ključni doprinosi klastera na stvaranje jedinstvenih regionalnih specijalizacija rada i znanja, odnosno na rast regionalne konkurentnosti. Razvoj klastera u agroprivredi u budućnosti biće u direktnoj vezi za stvaranjem povoljnog poslovnog ambijenta za rad malih i srednjih preduzeća, zatim sa stimulativnom i predvidivom agrarnom politikom, kao i sa razvijenim preduzetničkim inicijativama usmerenim ka zajedničkim aktivnostima i saradnji.

Ključne reči: *klasteri, agroprivreda, konkurentnost, produktivnost, inovativnost.*

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CHARACTERISTICS OF AGRICULTURAL INSURANCE: THE CASE OF COUNTRIES OF FORMER YUGOSLAVIA REGION

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Summary

Agricultural production is of great importance in the economies of region of former Yugoslavia, in relative terms significantly more than the global average. This production is carried out in the open air conditions and also is exposed to the effects of a large number of risks in relation to other activities. The research presented in this paper is the provision of agricultural insurance as a mechanism of risk management in the agricultural industry. The aim of the research is to show the key importance of this type of insurance and the determination of comparative differences in the effectiveness of its implementation in Serbia and other countries of the former common state in order to identify problems and propose potential solutions. The paper points out the importance and general characteristics of agriculture insurance and then to the common features of these types of insurance in all countries of the former Yugoslavia and then we analyze the effectiveness of this type of insurance in these countries. The results of the study are important for insurance companies in the region and may be useful to farmers and the state authorities concerned for a successful and sustainable agricultural production.

***Key words**: agriculture, risk, insurance, region of former Yugoslavia.*

JEL: *G22, Q01, Q14*

Introduction

Agricultural production is very important business in the world and especially in the countries of former Yugoslavia. The share of gross domestic product (GDP) in developed countries is less than 3%, but in developing countries, on average, about 9% (Baez, Wong, 2007). However, a smaller share of agricultural production in GDP in developed countries is more a result of good management and high yields with a large development and other sectors on the other. For example, the average U.S. farm household has five times the net

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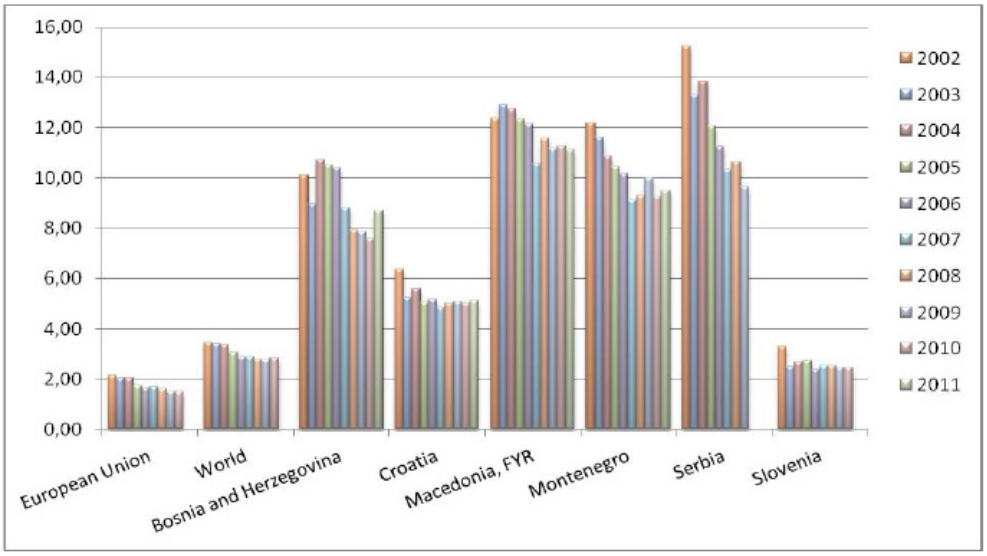
worth of the average household (Time Magazine, 2007). Figure 1 shows the relatively greater importance of agriculture in all countries of the former Yugoslavia, except Slovenia, compared to the European Union in relation to the average in the world.

Figure 1. Agriculture value added as a percent of GDP in countries of former Yugoslavia, European Union and World during the period 2002-2011.



Source: World Bank (2013).

Climate change, trade liberalization, genetically engineered and organic food production, which is an essential element of agro analysis (Pejanović et al., 2009), result in the appearance of new risks that threaten not only individual farmers, but all participants in the value chain of agribusiness, including input suppliers, processors and consumers. The importance of understanding the risks the farming exposed and form of risk management that are available to farmers is crucial given the importance of agriculture and the fact that a healthy agricultural sector can mitigate the adverse economic consequences of the crisis (FAO, 2009). Starting from the premise that the risk in agriculture is a function of the variability of input prices and output, grain yields and size of land and/or the number of cattle, the most acceptable distribution of risk in agriculture division to consider: the regulatory and institutional (resulting from possible changes in agricultural policies and regulations), market or price (derived from fluctuations in pricing of inputs and outputs of agricultural production) and production risk (due to the fact carrying out the production and management of outdoor living organisms, plants and animals, as this production makes it dependent on weather conditions, pests and diseases), (Pejanović, Njegomir, 2011).

Insurance of agricultural production suffer low penetration and frequent underwriting losses due to factors ranging from high administration costs to adverse selection in emerging economies (Baez, Wong, 2007). This type of insurance is insufficient in both scope and types of insurance protection (Žarković, 2000) although it is one of the most common mechanisms

of risk management in agricultural production in the region of former Yugoslavia. Based on the fact of underdevelopment of agriculture insurance in Serbia (Njegomir, Pejanović, 2011) the aim of study is determined by reference to the key importance of this type of insurance and the determination of comparative differences in the effectiveness of its implementation in Serbia and other countries of the former common state in order to identify problems and propose potential solutions. The paper points out the importance of insurance and general characteristics of agriculture and then to the common features of these types of insurance in all the countries of the former Yugoslavia, then to analyze the effectiveness of implementing this type of insurance in these countries.

The importance and general characteristics of agricultural insurance

Modern insurance as a form of risk management of growth and development appeared with the development of private property and the development of mathematics and statistics, although the basic characteristics of insurance, risk pooling and still, meets the original human community when people are joining together in groups, tribal communities, sought to share risk with each other. From the perspective of a farmer, in return for a small amount of fixed cost in the form of premiums, insurance as a form of risk management provides significantly greater protection against damages from the occurrence of prescribed uncertain conditions of the insurance contract. Insurance enabled combination of agricultural production risks such as damage to crops due to the city or fire, theft of farm property, death or animal disease and death or health of agricultural producers.

The key role of insurance in agriculture and society is the indirect economic protection of life and property from the effects of natural forces and accidents. Insurance promotes agricultural production by farmer's entrepreneurial activity which seems more stable and more certain. Insurance reduces the uncertainty of farmers and the need to create individual savings accounts or funds, given that the need for cash reserves reduced (Raulston et al., 2010). By releasing the need for accumulation of surplus funds due to which insurance can profitably engage, securing further promote development of agriculture. In addition, except as provided indirect economic protection for the destructive action of natural forces and human activities, and insurance is a form of collateral (collateral) that allows farmers more easily obtain capital through loans at lower costs. The World Bank suggests that lack of access to agricultural insurance, which is one of the ten key factors in solving the crisis of food insurance, is a serious barrier to productivity, investment and efficiency in agriculture marketing system (World Bank, 2008).

Insurance is one of the key forms the risk management, but in order to the risks to agricultural production could be transferred to the insurance companies, certain conditions must be met. Insurability conditions that must be met are: 1) the risk must be random ,in other words, its implementation must be beyond the control of the insured, 2) the risk must be determinable and measurable in the sense that there must be a possibility of determining the probability of occurrence and intensity of adverse effects and the possibility of determining the measurements of actual damages, 3) there must be a large number of insured objects or people exposed to the same kind of danger that could apply the law of large numbers, 4) risk by its realization

must cause economic damage.Also, in the literature, economic availability of insurance premiums (eg, Skees, Barnett, 1999; Reidy, 2005) cited as an additional condition. However, it implies that the economic availability of premium is already contained in these conditions since it would not be economically affordable premiums impossible to attract a sufficient number of contributors to be able to apply the law of large numbers. Finally, it is necessary to strive for the creation of risk portfolio which will have little potential for the realization of the catastrophic damage that is possible to achieve the aspiration that the risks involved in the portfolio are as little as possible correlated with each other.

Agricultural insurance represents a special insurance that falls in property insurance. We separate agricultural insurance because of the specific features. Main feature of agriculture insurance is reduced diversification due to the high possibility of correlation between the risks. Under the correlated risks is understood risk as a negative influence exercised simultaneously in a large number of farmers.

In the risk management insurers apply model that by quantification of exposure to certain risks allows the determination of insurance premiums. For example, the ERA model by Guy Carpenter Insurance Companies provides hail risk management in Italy. This model enables comparison of exposures of the insurance portfolio for many years, simulation of possible future damage, assess the level of risk in different geographical areas and limit the exposure assessment (Guy Carpenter, 2006). Despite the existence of modeling, owing to informational asymmetry that occurs in relations insured - the insurance company, there are adverse selection in the insurance of agriculture, moral hazard and fraud, the conduct of the insured which causes an additional increase in transaction costs.

Common characteristics of agricultural insurance in the region of former Yugoslavia

At agricultural insurance market in the region of former Yugoslavia traditionally are offered products of indemnifying character that finds its application mainly in the form of crop insurance, livestock insurance and lately index-based flood and drought insurance. Although bound to agricultural production and mechanization, statutory civil liability of owners, farm families, belongings and buildings insurance, agricultural insurance, the term we focus in our paper are the above three types of insurance specific solely for agricultural production.

Characteristics of crop insurance and animal insurance are virtually identical for all insurance companies. Crop insurance protects the crop production and yield losses that may arise as a result of achieving the insured risk. The insurance provides cover for crops, industrial crops, vegetables, crops and fruits in greenhouses, herbs, ornamental plants, orchards, vineyards, orchards and vineyards before ripening period, fruit, vine and forest seedlings, young forests by the age of six years, plaiting willows and reeds. The insurance covers the parts of plants that determine the purpose of breeding, such as grain (seeds), roots, tubers, fruit, coils, stems, seedlings, cuttings and forage mass. Risks typically covered include basic risks (hail, lightning and fire) and if additional premium is paid it is possible

to insure additional risks such as floods, storms, spring frost, autumn frost, loss of seed quality and loss of quality of the fruit and table grapes). The insurance premium depends on: 1) the characteristics of insurance cases or classes of sensitivity crops which ensures, 2) the number and types of insured risk covered, 3) hazard classes territorial areas where the culture process, 4) deduction (determined by the percentage amount damages or the sum insured), 5) technical result (loss ratio can be determined for the whole of the insurance or the insured), 6) contractual discounts (for the collective, for many years, and for crop insurance on the same surface) and 7) the sum insurance. The sum insured is determined on the basis of the expected yield per acre and the expected market price per kilogram or contracted or guaranteed prices for a specific culture. The sum insured as well is affected by the premium rate that is calculated by multiplying the specified sum insured per unit area and the total area. When an insured event occurs insurance benefits are usually determined on the sum insured, the actual values of crop and the amount of damage and if there is a deduction then it affects the size of the claims.

When livestock is object of insurance it can be applied on domestic, some wild and exotic livestock in zoos (e.g., equine, cattle, buffalo, sheep, goats, pigs, bees, trout, poultry, etc.). Insurance may cover only healthy livestock for less than one year, a period of one year or longer than one year. Risks covered are divided into primary (death, emergency slaughter or killing because of illness or accident) and supplemental (medical costs and other contractual risks such as insurance animal exhibitions on, loss of calves at birth, loss of breeding ability of heifers, cows or male breeding throat, etc.). The insurance premium depends on the type of animal, group risk, scope of coverage, the insured value of the livestock, the economic purpose and age of the livestock, discounts (e.g. for insurance on a certain number of years, to ensure all livestock, the premium payment terms, etc.). And technical results (determined by the types and categories of livestock for individual policyholders or individual fields). The sum insured is expressed per animal based on its weight and price per pound or per head value and may be the most equal to the actual value of the livestock at the time of conclusion of the contract and for the young and fattening livestock the value that will be achieved by the end of fattening, or life insurance. Finally, the basic obligation of the insured to ensure all areas under crops and fruits of the same kind, or in securing livestock all livestock of the same species, to take all measures to prevent the occurrence of the insured event, the insured event occurs when you take all measures in order to limit its adverse effects in a timely manner and on the terms of insurance, notify the insurer.

New products are continuously developing and world trends of the development of new insurance products in cooperation with farmers are followed. One of the key innovations is the appearance of index-based insurance for flood and drought in Serbia. For now the insurance coverage is provided only for 1) corn, 2) soya and 3) sugar beet. Flood and drought are based on data provided by Republic Hidrometeorological Service of Serbia. Drought is a reduction of crop yield caused by smaller amount of rainfall in the reference period in relation to a multi-year average.

Government subsidies for agricultural insurance in countries of ex-Yugoslavia region

It is well known that agricultural insurance is constrained with risks that are highly correlated. Quoted specific agricultural insurance comes from the specific agricultural activities related to the production and management of outdoor living organisms, plants and animals, which makes it dependent on weather conditions, pests and diseases (Pejanović, Njegomir, 2011). Spatially correlated weather events tend to induce correlation in production losses thus violating the standard insurability conditions that can be a reason for agricultural insurance market failure, as insurance companies could restrict the supply of insurance or stop offering insurance at all (e.g. Froot, 2001; Cummins, 2006). This leads to disproportionally large losses in relation to other types of insurance, some ten times larger than in auto hull or fire insurance (Miranda, Glauber, 1997). Considering importance of agricultural prduction in general and particularly in the countries of the region (Figure 1) governments is trying to influence the reduction of the negative impact of risk on farmers. These measures may vary from direct *ad hoc* payments from the budget, the role of government as a direct insurer or reinsurer quasi, as is the case in China, the *ex ante* measures of support to the implementation of preventive measures, such as the construction of irrigation systems and support for the conclusion of private insurance (Pejanović and Njegomir, 2011). In some countries such as India and Brazil ‚state has an extremely important role and its influence is present, but to a much lesser extent in all the countries of Eastern Europe as there are examples of countries such as Argentina and South Africa, where government intervention is not present (Baez, Wong , 2007). In principle, as governments tend to be ineffective as direct providers of insurance (e.g. Cummins, 2006; Michel-Kerjan, Kousky, 2010) and more importantly their direct involvement in loss indemnifications without prior premium payments leads to low participation rates (e.g. Kriesel, Landry, 2004).

The most frequent form of government intervention occurs in the form of insurance premium subsidies. Since the research shows that in most countries the private insurance of agricultural production can hardly survive without government subsidies (Skees, Hazell, Miranda, 1999) they are still continuously increasing.

In the period to 2007, the globally subsidies for agricultural insurance premiums reached nearly $ 12 billion (Mahul, Stutley, 2010) in 2011 and in the U.S. they reached U.S. $7.4 billion, or 62% of total agricultural insurance premiums (GAO, 2012).

In all countries of the region there are subsidies for crop insurance and insurance of animals. There's a specific case In Bosnia and Herzegovina emphasizing that regulation differs in the two of the entities, the Federation of Bosnia and Herzegovina and Republika Srpska. The Federation law (Zakon o novčanim podrškama u poljoprivredi i ruralnom razvoju,''Službene novine FBiH'', br. 42/10) provided co-funding insurance premiums from possible damage in agricultural production and regulation (Pravilnik o uvjetima i načinu ostvarenja novčanih potpora po modelu ostalih vrsta novčanih potpora u poljoprivredi, ‘'Službene novine FBiH'', br. 56/12) provides that the amount of incentives paid in the amount of 50% of the amount of insurance for the current year except that in one year per

farmer can be 30000KM paid maximum (15.339 EUR on 12.29.2012). In the Republic of Serbian ordinance (Pravilnik o uslovima i načinu ostvarivanja novčanih podsticaja za razvoj poljoprivrede i sela, „Službeni glasnik Republike Srpske", br. 18/12) provides that the amount of incentive pay of up to 50% of premiums, with upper limit of 25000KM (12.782 EUR on 29.12.2012) per agricultural producer.

In Serbia, the reimbursement is provided by law (Zakon o poljoprivredi i ruralnom razvoju, „Službeni glasnik Republike Srbije", br. 41/09) while the funding specified in Regulation (Uredba o uslovima i načinu korišćenja sredstava za regresiranje osiguranja životinja, useva, plodova, rasadnika i mladih višegodišnjih zasada u 2012. godini, „Službeni glasnik Republike Srbije", br. 38/12) where the state subsidizes certain that 40% of insurance premiums with the possibility that some local government further subsidized, which resulted in the majority of cases the funding an additional 10% premium. In the period from 2006 to 2011 increasing number of requests (from 2.594 to 9.020) and the number of paid premiums for reimbursement of funds has increased from 12.085.524 to 171.270.834 (Petrovic, 2012).

In Croatia, the law (Zakon o potpori poljoprivredi i ruralnom razvoju, „Narodne novine", br. 120/12) has given the opportunity to subsidize and regulations each year determine a specific amount. Regulations for 2012 (Pravilnik o ostvarivanju prava na potporu osiguranja od mogućih šteta proizvodnji u poljoprivredi, „Narodne novine", br. 33/12) provides that the Ministry of Agriculture, Fisheries and Rural Development subsidies paid at 25% of the insurance premium, the maximum amount 500.000HRK (66.264 EUR at 29/12/2012). In addition to state subsidizing the same exists at the level of districts (counties) that varies at best, as for example in Zagreb, reaching an additional 25% premium and the maximum 10.000HRK (1.325 EUR at 29/12/2012) per farmer.

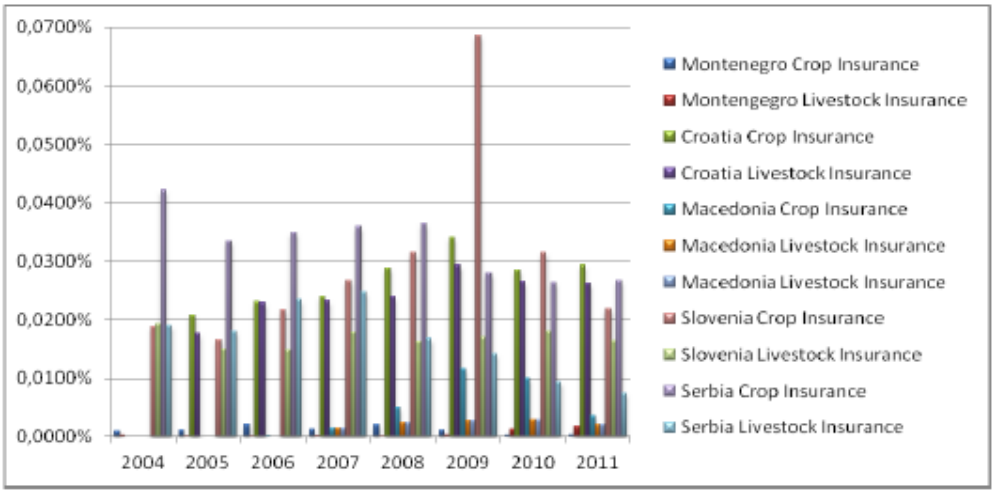
In Montenegro, the budget for agriculture in 2012 year includes funding provided to the state co-insurance premium for agricultural production and 50% of the value.

In Macedonia, the law (Zakon za zemjodelstvo i ruralen razvoj, „Službeni Vesnik na R. Makedonija", br. 49/10) provided the highest amount of the premium subsidy amount in the region of 60%. However, the situation is different when is taken into account in closed ranks; maximum amount of funding is determined by the level of 200.000MKD (3252 EUR at 29/12/2012) per farm. In Slovenia, the law (Zakon o kmetijstvu, „Uradni list Republike Slovenije, br. 45/2008) gives the opportunity to subsidize insurance premiums and is regulated by specific regulations on an annual basis. Based on the Decree of 2008 (Uredba o sofinanciranju zavarovalnih premij za zavarovanje kmetijske proizvodnje in ribištva za leto 2008, „Uradni list Republike Slovenije", br. 110/07) stipulates that the state subsidizes up to 40% of insurance for crops and fruits and to 30% of animals in which the municipalities is given the possibility for additional subsidies while the total sum of co-financing may not exceed 50% of the insurance premium.

The analysis of the relative importance in national economies and profitability of agricultural insurance in the region of former Yugoslavia

Insurance has many benefits for individual insureds and for the entire national economies (see for e.g. Marović, 2001; Njegomir, 2011). The measures of its relative importance within national economies that are usually used are insurance penetration and insurance density. Insurance penetration is the ratio of annual premiums written within national economy to gross domestic product (GDP) of that national economy. This ratio roughly presents the importance of insurance in terms of certain percentage of GDP. Although it has limitations such as negligence of differences in insurance price levels and GDP structure among countries, because it is unaffected by currency fluctuations among countries it is a useful tool usually used for cross country comparisons of insurance market development. Using analogy for the whole insurance market, Figure 2 presents agricultural insurance penetration in countries of the region of former Yugoslavia during the period 2004-2011.

Figure 2. Agricultural insurance penetration in ex-Yugoslavia countries during the period 2004-2011.



Source: authors' calculations. Data on premiums are obtained from individual countries' regulatory bodies – insurance agencies and National bank of Serbia and insurance associations. GDP data are obtained from World Bank. Exchange rate data at the end of each year are used. Data for Bosnia and Herzegovina are not available.

Figure 2 indicates very low participation of agricultural insurance premium in GDP in the region. That is in line with other emerging countries. Agricultural industries are generally under-serviced from an insurance standpoint, particularly in developing economies where agricultural insurance penetrations are lower despite their greater reliance on agricultural production than industrialized economies (Baez, Wong, 2007). According to FAO (2005) the total global agricultural insurance premiums is concentrated in developed farming and forestry regions, i.e. in North America (55%) and Western Europe (29%) while the rest stems from Australia and New Zealand (3%), Latin America (4%), Asia (4%), Central/Eastern Europe (3%) and Africa (2%).

Such indicators for agricultural insurance are somewhat understandable if we know that penetration of total insurance premium is very low in regional countries with average of 2.67% participation in GDP but vary from 1.53% of GDP in Macedonia to 5.88% in Slovenia.

From Figure 2 is also obvious that the dominant type of agricultural insurance in the region is crop insurance. The fact that crop insurance is the predominant type of agricultural insurance in the region is also in accordance with worldwide trends. On a global level, the crop insurance makes around 90% of overall agricultural insurance premium (Iturrioz, 2009).

Insurance density refers to average annual per capita premium within a national economy. It is a good indication of the average annual spending on insurance per capita in a national economy. Although it could have limitations regarding currency fluctuations impact on cross country comparisons, especially if is used over time, it is still a useful measure for the approximation of average annual insurance purchases within an economy. Figure 3 shows cross country comparison of agricultural insurance density in the region of former Yugoslavia in 2011. Despite the fact that the calculation of agricultural insurance density is based on analogy for the whole insurance market, instead of the number of citizens in a country, which is used for the calculation of total insurance premium density, we use the number of agricultural holdings in each country.

Figure 3. Agricultural insurance density in ex-Yugoslavia countries in 2011

Country	Agricultural insurance premium/ Total insurance premium (in %)	Agricultural insurance premium/ Number of agricultural holdings (in EUR)
Montenegro	0,11%	1,42
Croatia	2,25%	117,83
Macedonia	0,40%	2,30
Slovenia	10,25%	195,87
Serbia	2,16%	15,19
		26,14

Source: authors' calculations. Data on premiums and number of policies are obtained from individual countries' regulatory bodies – insurance agencies and National Bank of Serbia and insurance associations. Data on number of agricultural holding are obtained from individual countries 'statistical offices' agricultural censuses. All monetary values have been denominated to the 30th Dec 2011 Euro value. Data for Bosnia and Herzegovina are not available.

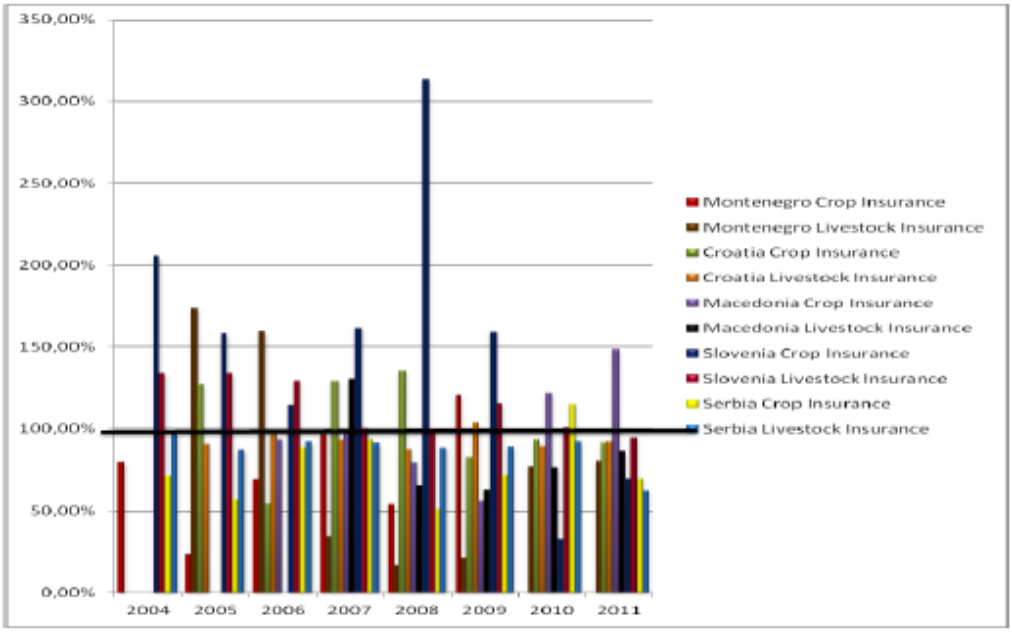
As we can see from the Figure 3 the agricultural insurance uptake is low in the region. This low agricultural insurance density is especially emphasized in Montenegro, Macedonia and Serbia where only a small fraction of agricultural holdings is insured. The data for Serbia differs because of the number of agricultural holdings taken into account. In the first case we use the total number of agricultural holdings determined by agricultural census in 2002 (778.891) and in the other we use number of registered agricultural holdings in 2011 (452.606).

Insurance density for the total insurance premium, despite some cross country differences, shows that all countries of former Yugoslavia are lagging behind European peers as average insurance per capita in the region in 2010 was in a range between 1808.27 EUR in Slovenia and 92.47 EUR in Macedonia. Thus, it would be unusually to expect agricultural insurance density to be greater. Even in the case that total insurance premium is larger the small share of agricultural insurance premium in total insurance premium is a useful indicator of agricultural insurance importance. When agricultural insurance density is compared with total insurance density we can conclude that agricultural insurance is relatively neglected in comparison to other types of insurance.

The basic aim of business activities of insurance companies is to achieve profit. Profitability of insurance companies can be determined similarly to how it is determined for companies in other industries, as the difference between revenues and expenditures. However, insurance companies' profitability is usually determined separately for insurance underwriting and investments. The main revenue from underwriting activities is insurance premiums that have to be sufficient to cover costs of loss payments, operating expenses, reserves and profit. Sometimes investment earnings can be used to offset insufficient premium for claims payments but such practice should be rather extraordinary than normal as lower available investment returns, such as in current investment environment, could cause net losses in both activities.

The most important factor that affects insurance profitability is the underlying risk. This risk essentially depends on insurer's experience regarding loss payments. The most important indicator of insurance company profitability is loss ratio, which measures the proportion of incurred losses to earned premiums. Essentially, loss ratio shows the amount of the insurance premium that is used for coverage of loss payments to insureds. If this ratio is less than 1 (or 100%) the insurance premiums cover the costs of claims and related expenses, if it is equal to 1, insurance premiums are equal to costs of claims and if it is greater than 1 premiums are not sufficient to cover the costs of losses. In business practice of insurance companies in countries of the region loss ratio is usually referred to as technical result of insurance companies. Figure 4 shows the development of loss ratios in crop and livestock insurance in countries of former Yugoslavia during the period 2004-2011.

Figure 4. The development of loss ratios in crop and livestock insurance in ex-Yugoslavia countries during the period 2004-2011



Source: authors' calculations. Data on premiums and losses are obtained from individual countries' regulatory bodies – insurance agencies and National bank of Serbia and insurance associations. Data for Bosnia and Herzegovina are not available.

Figure 4 clearly indicates that agricultural insurance, including both crop and livestock insurance, are generally very problematic for insurance companies as loss ratios are very often above 100% and almost always above 50%. In each year when loss ratio is above 100% insurance companies in regional countries has suffered underwriting loss. Sometimes it is so extreme, as it was with Slovenian crop insurance in 2008, that losses are two or three times larger than premiums. It must be emphasized that European average loss ratios in agricultural insurance ranges from 60% to 70% and are still considered unprofitable. Thus, even loss ratios below 100%, such as those in Serbia, does not guarantee underwriting profit because insurance companies should cover operating expenses and achieve profit.

Conclusion

Insurance markets work function best when risks are uncorrelated; occur with high frequency and when there are a large number of insureds. The agricultural insurance is characterized with risks that are highly correlated, which violates the standard insurability conditions. This coupled with the need to determine risk exposures of each individual farm, which are often geographically dispersed, causes relatively high costs for insurers when compared with other types of insurance. As we indicated in the paper, loss ratios in the agricultural insurance are very poor, especially for livestock insurance in some markets of ex-Yugoslavia region such as Serbia. In addition to above mentioned features of risk

of agricultural production, specific problem in local agricultural insurance markets is insufficient number of insureds.

The logical reaction of insurers is to restrict the supply of capacity of insurance with risks where loss ratios are high. When private markets fail, as the macroeconomic practice after the Great Depression of 1930s thought us, governments will to intervene. The direct intervention of the state in financing the damage is not justified, as indicated, but the indirect role of the state as the instigator of the application of risk management measures, including insurance, is needed. In all the countries in the region in recent years, there are subsidies that vary in the range from 30% to 60% depending on the country but still are underutilized opportunities for the development of agricultural insurance which clearly indicates the movement of the insurance premium. To exploit the potential development opportunities subsidy is necessary to ensure continuous policy with incentives for the sustainable management of risks in the agricultural shift from manufacturing regulatory requirements must be continuous and transparent and farmers are fully aware of the responsibility of carrying the entire risk of their work activities.

At the supply side, insurance companies should decrease possible negative consequences of loss accumulations with more efficient use of reinsurance involving international reinsurers. In order to encourage the demand for agricultural insurance, governments together with insurance companies should model forms of public-private partnerships in risk financing, such as the development of government backed reinsurance for catastrophic losses that could provide more affordable premiums for agricultural producers. Because of insufficient demand, in addition to government subsidies and other forms of public private partnerships in risk financing, in countries of the region of ex-Yugoslavia the broader education of all stakeholders about the benefits of agricultural insurance, especially individual farmers with relatively small farms, is needed to be provided in cooperation between governments and insurance companies.

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KARAKTERISTIKE OSIGURANJA POLJOPRIVREDNE PROIZVODNJE: SLUČAJ ZEMALJA REGIONA BIVŠE JUGOSLAVIJE

Zdravko Petrović[4], Vladimir Njegomir[5], Sara Počuča[6]

Rezime

Poljoprivredna proizvodnja ima izuzetan značaj u ekonomijama svih zemalja bivše Jugoslavije, relativno posmatrano znatno više od svetskog proseka. Ova proizvodnja ostvaruje se na otvorenom i izložena je dejstvu znatno većeg broja rizika u odnosu na druge delatnosti. Predmet istraživanja u radu jeste osiguranje poljoprivredne proizvodnje kao jedan od mehanizama upravljanja rizicima u ovoj delatnosti. Cilj istraživanja u radu jeste ukazivanje na ključni značaj ove vrste osiguranja i determinisanje komparativnih razlika u efikasnosti njegovog sprovođenja u Srbiji sa drugim zemljama bivše zajedničke države kako bi se identifikovali problemi i predložile potencijalne solucije. U radu prvo ukazujemo na značaj i opšte karakteristike osiguranja poljoprivrede a potom na zajedničke karakteristike ove vrste osiguranja u svim zemljama bivše Jugoslavije a potom analiziramo uspešnost sprovođenja ove vrste osiguranja u navedenim zemljama. Rezultati sprovedenih istraživanja značajni su za osiguravajuća društva u zemljama regiona a mogu biti korisni i poljoprivrednim proizvođačima kao i državnim organima zainteresovanim za uspešnu i održivu poljoprivrednu proizvodnju.

***Ključne reči**: poljoprivreda, rizik, osiguranje, region bivše Jugoslavije.*

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ECONOMIC EFFECTS OF THE THERMAL WATER USE IN VEGETABLE PRODUCTION ON THE TERRITORY OF CENTRAL DANUBE REGION[1]

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Summary

Investments in agricultural production due to modernization of production process, is one of the basic factors for agriculture and rural areas development generally, as well as the entire economy. In the existing business conditions, when domestic agriculture meets alarming problems in primary production sphere (as: work productivity, insufficient number of work places, low efficiency of instruments of labour etc.), increase of investments size can significantly affect competitiveness improvement, as on domestic, as well as on foreign market.

The investment in building the exploitation wells, out of which will get thermal water, which will serve for irrigation and heating of a glasshouse for production of early and late vegetables out of a season, represents the significant modernization of agricultural production. Such form of investment can be a good example, aiming to improve the production process and increase of income on a family agricultural husbandry.

Key words: *Investment, vegetable production, building well, thermal water, glass house.*

JEL: *Q12*

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Introduction

The middle Danube area encircles two biggest towns in the area of the Republic of Serbia, Belgrade and Novi Sad, besides this area comprises also the towns Pancevo and Smederevo and the municipalities along the river Danube: Beocin, Irig, Sremski Karlovci, Indjija, Ruma, Pecinci and Stara Pazova.

The agricultural land area, of around 540 thousand hectares, as this area is large, favourable land and climatic conditions for agriculture al development, and besides also large population, as well as the market vicinity, represent a great starting point for development of intensive agricultural production.

As it was noted by some authors, family agricultural husbandries are usually dealing with vegetable production on small surfaces, by application of intensive way of production (Subić, Jeločnik, 2013).

In regard to the market vicinity and a number of populations, the middle Danube area is especially favourable for development of vegetable production (with special focus to vegetable production in protected space). As one of the conditions for development of such form of production, states sufficient amount of water for irrigation. For this reason, but also owing to a fact that this investment will provide, on one hand, heating of a glass house with thermal water, and on the other hand, out-of-a-season production of early and late vegetables, in the paper was made an evaluation of effects for building the exploitation wells in the middle Danube area in the Republic of Serbia (i.e. on the area of the city of Belgrade in the suburb named Vinca).

According to Massé (1959) the investment represents abandoning the existing and sure satisfaction of needs, which can be provided by available incomes and savings, in exchange for future expectations, which base exactly on the investment object, i.e. fixed capital.

Some domestic authors' cites (Andrić et al., 2005) that investments represent resources investment, primarily financial sources in purchasing necessary means of production with long-term use, aiming to use them in the production process, i.e. in a company's business.

According to Subić et al. (2006) in most of cases, the investments provide raising a technical level of agricultural production, through investments in new fixed assets, meant for development or modernization, with better technical-production characteristics. This represents one of the ways for introduction of scientific-technical progress in agriculture, through which ensures economic growth and higher work productivity.

With the investments in building the well will provide increase of the current enterprise yield and better utilization of already existing labour, as well as the production modernization.

Since the water management projects are capital intensive, they should ensure efficient use of land and waters, in order to make these projects justified. Economic analysis and evaluation of these projects should identify and involve all interests and costs in the project (Jovanović, 2000).

Opposite to instruments of labour in other business fields, the basic characteristic of land origins from a fact that it cannot spend, but, on the contrary, its structure permanently improves through the investments materialized in reclamation works (the most efficient are surely the investments in building an irrigation system). On this basis, there is a possibility for almost constant growth of agricultural production, year in and year out, without any enlargement of arable land (Subić, 2003).

Validity of the planned investment in fixed and working assets was perceived from technical-technological point of view, commercial point of view and, finally, financial-economic point of view. Accordingly, a final evaluation of the investment validity in fixed and working assets was proven through calculated eliminatory criteria of the project.

Material and working method

Introduction of new technologies and modernization of production, as in agriculture, as well as in the economy as a whole, are of great significance for further development of the existing production, its enlargement and increase of incomes which realize. A reason more for taking as a goal of the paper the evaluation of economic validity for building the exploitation wells, as a form of the production modernization, is also a cite of domestic authors that, without adequate size and thought-out structure of investments cannot be provided a growth of fixed and working assets, increase of work places' number, increase of instruments of labour's efficiency, better work productivity, diversity of production, etc. (Subić, 2007).

In terms of highly variable environment, which carries a high risk of uncertainty and risk, the changes are more dynamic and, as such, require from producers to change the previous method of work, in order to make the production more competitive (Bošnjak, Rodić, 2010). Accordingly, in the paper were used dynamic methods for evaluation of economic effects, in order to determine the validity of the investment in building the exploitation wells on the family farm. As it was already stated, water from newly-constructed wells will serve for grown cultures irrigation and for heating already existing glasshouse in which will produce vegetables out of a season. During this paper's preparation were surveyed development-oriented family agricultural husbandries, not only in the suburb Vinca on the city of Belgrade area, but also on wider region of the middle Danube area, aimed to collect as many necessary data and a comparative analysis of their validity.

Research results and discussion

The investment refers to building the exploitation wells in the family agricultural husbandry (deepness 287 m and 165 m), as well as providing necessary working assets for undisturbed realization of the planned size of production and the vegetable products assortment. By its character, the investment is reconstruction and modernization of the existing facility. The husbandry already uses well water from two private wells, which quality is satisfying, from chemical, mechanical and micro-biological point of view. This investments should provide, besides water for irrigation, also heating of the existing facility (with thermal water), and in

that way to provide the production of vegetable cultures out-of-a-season. The production has been based on growing the most profitable thermophilic vegetables which implies, first of all, growing cucumbers and tomato. With out-of-a-season vegetable production, the husbandry will make significantly higher incomes, in regard that prices of vegetables, especially cucumbers and tomato, are significantly higher in regard to the prices of seasonal vegetables. The vicinity of the biggest towns' markets in the middle Danube area (more concrete, Belgrade and Novi Sad) represents a pre-condition for safe placement and favourable prices of vegetable produced in the glasshouse.

In accordance to the intended investment, it has been followed by next elements:

- High accumulation,
- Safe placement,
- Opening perspectives for future investments.

The total investments are 231,000 EUR, of which investments in fixed assets are 207,000 EUR and 24,000 EUR of investments in working assets (Table 1). In the structure of the total investments, new investments realize a share of 20.8%, while entered assets participate with 79.2%.

Table 1. Total investments (000 EUR)

No.	Description	Entered assets	New investments	Total investments	% of share	
					Entered in the total investments	New in the total investments
I	**Fixed assets**	**798.48**	**207.0**	**1,005.48**	**79.41**	**20.59**
1.	Land	47.13	-	47.13	-	-
2.	Building facility	645.76	207.0	852.76	-	-
3.	Equipment	100.74	-	100.74	-	-
4.	Orchards	4.85	-	4.85	-	-
II	**Working assets**	**83.15**	**24.0**	**107.15**	**77.60**	**22.40**
TOTAL		**881.63**	**231.0**	**1,112.63**	**79.24**	**20.76**

Source: Family agricultural husbandry (Tomislav Simonovic – Vinca).

Investments in fixed assets comprise building two exploitation wells, with deepness of 287 m and 165 m and of total value of 207.000 euro (Table 2*)*.

Table 2. Investments in fixed assets (000 EUR)

No.	Name of fixed assets (equipment/herd/plantation)	Pcs.	Price per pcs. without VAT	Value with VAT
1.	**Well 165 m**	1	72.8	87.36
2.	**Well 287 m**	1	99.7	119.64
TOTAL			**172.5**	**207.00**

Source: Family agricultural husbandry (Tomislav Simonovic – Vinca).

Due to lack of equity for purchase of fixed assets, their ***financing*** is done by borrowed funds, while providing necessary working assets for undisturbed realization of the planned production size and the vegetable products assortment, fund with the equity (Table 3*)*.

Table 3. Funding resources (000 EUR)

No.	Description	Entered assets	New investments	Value	%
1.	**Equity**	**881.63**	**24.0**	**905.63**	**81.4%**
1.1.	Fixed assets	798.48		798.48	
1.2.	Working assets	83.15	24,0	107.15	
2.	**Borrowed funds**	**0**	**207.0**	**207.0**	**18.6%**
2.1.	Fixed assets		207.0	207.0	
TOTAL		**881.63**	**231.0**	**1,112.63**	**100%**

Source: Family agricultural husbandry (Tomislav Simonovic – Vinca).

In the total structure of a new investment, funding with borrowed funds participates with 89.6%, while the equity participates with 10.4%.

In the glasshouse was planned the production of early cucumber and late tomato. Planting cucumbers was planned in the first half of February, and first picking of cucumbers was expected in the beginning of April and was planned to last for three months. The average cucumber production per m^2 was projected to 20 kg, which was implying the total production of 190,000 kg of cucumbers. Planned average price of early cucumbers would amount one euro (Table 4*)*.

The production of late tomato in the total area of the glasshouse (9,500 m^2), due to production of 18 kg/m^2, was planned on the level of 171,000 kg of tomato. Planting was planned from the 1st September, and first tomato picking was expected for the 1st October and was expected to last for three months. The planned average price of tomato would be 0.85 EUR.

Except cucumber and tomato production in the glasshouse in husbandry also produces potato. Besides, the husbandry deals with fruit production (i.e. it has plantations of cherry, peach and apricot), which also participate in the total income forming in the husbandry.

Table 4. Forming total income (EUR)

No.	Description of products/services		PROJECT DURATION													
			1			2			3			4			5	
		U.M.	Price per u.m.	Annual quantity in u.m.	Total income (3x4) 000 EUR	Price per u.m.	Annual quantity in u.m.	Total income (3x4) 000 EUR	Price per u.m.	Annual quantity in u.m.	Total income (3x4) 000 EUR	Price per u.m.	Annual quantity in u.m.	Total income (3x4) 000 EUR	Price per u.m.	Annual quantity in u.m.	Total income (3x4) 000 EUR
0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
1	Cucumber	kg	1.00	190.000	190.0	1.00	190.000	190.0	1.00	190.000	190.0	1.00	190.000	190.0	1.00	190.000	190.0
2	Tomato	kg	0.85	171.000	145.3	0.85	171.000	145.3	0.85	171.000	145.3	0.85	171.000	145.3	0.85	171.000	145.3
3	Potato	kg	0.23	600.000	138.0	0.23	600.000	138.0	0.23	600.000	138.0	0.23	600.000	138.0	0.23	600.000	138.0
4	Cherries	kg	1.41	10.000	14.1	1.41	10.000	14.1	1.41	10.000	14.1	1.41	10.000	14.1	1.41	10.000	14.1
5	Peaches	kg	0.50	6.000	3.0	0.50	6.000	3.0	0.50	6.000	3.0	0.50	6.000	3.0	0.50	6.000	3.0
6	Apricots	kg	0.50	9.000	4.5	0.50	9.000	4.5	0.50	9.000	4.5	0.50	9.000	4.5	0.50	9.000	4.5
7	**TOTAL**				**494.9**			**494.9**			**494.9**			**494.9**			**494.9**

Source: Family agricultural husbandry (Tomislav Simonovic – Vinca).

The depreciation period for wells, which are built by the investment, is 20 years, i.e. annual depreciation rate for new investments in fixed assets is 5%, in a way that annual depreciation amount in all years of investment use and the project duration is equal and amounts 10.35 thousand EUR (Table 5).

Table 5. Depreciation (000 EUR)

Description	Purchase value	Depreciation rate	Years of the project					Non-depreciation value
			1	2	3	4	5	
Well, new	207.0	5.0%	10.35	10.35	10.35	10.35	10.35	155.3
Depreciation for new investments	**207.0**	**5.0%**	**10.35**	**10.35**	**10.35**	**10.35**	**10.35**	**155.3**

Source: Family agricultural husbandry (Tomislav Simonovic – Vinca).

In ***material costs*** structure, the most important item is raw material and materials, which share is 47.2%, then follow other material costs, fuel and lubricants. While participation of other costs is under 5% and is not of greater significance while forming material costs (Table 6).

As the most significant items in ***non-material costs*** appear costs of salaries (which share is 32.5%) and depreciation costs (with share of 28.8%).

Table 6. Total costs (000 EUR)

Ordinal number	Elements	Project duration				
		1	2	3	4	5
I	**Material costs**					
1	-raw material and materials	58.9	58.9	58.9	58.9	58.9
2	-fuel	16.8	16.8	16.8	16.8	16.8
3	-electrical energy	4.0	4.0	4.0	4.0	4.0
4	-lubricants	0.4	0.4	0.4	0.4	0.4
5	-other material costs	44.6	44.6	44.6	44.6	44.6
TOTAL I		**124.8**	**124.8**	**124.8**	**124.8**	**124.8**
II	Non-material costs					
1	Costs of salaries	93.1	93.1	93.1	93.1	93.1
2	Costs of daily wages, business trips and specialized trainings	2.1	2.1	2.1	2.1	2.1
3	Costs of production services	29.8	29.8	29.8	29.8	29.8
4	Costs of depreciation	82.6	82.6	82.6	82.6	82.6
5	Costs of non-production services	56.7	56.7	56.7	56.7	56.7
6	Financial expenditures (interest on loan)	**22.0**	**20.3**	**15.4**	**10.1**	**4.1**
TOTAL II		**286.4**	**284.6**	**279.8**	**274.4**	**268.4**
TOTAL		**411.1**	**409.4**	**404.6**	**399.2**	**393.2**

Source: Family agricultural husbandry (Tomislav Simonovic – Vinca).

In the ***total costs*** structure is dominant a share of non-material costs (cca. 70%), while the material costs are less represented (cca. 30%).

The profit and loss account of the husbandry's business without the project and with the project, during the project implementation, is shown in the Table 7. On the other hand, the project's income statement, i.e. the new investments, is shown in the Table 8.

Table 7. Income statement (000 EUR)

No.	Elements	Project duration					
		Profit and loss account without the project	1	2	3	4	5
I	TOTAL INCOME:	373.0	494.9	494.9	494.9	494.9	494.9
II	TOTAL EXPENDITURES (1+4)	322.0	411.1	409.4	404.6	399.2	393.2
1	OPERATING EXPENDITURES (2+3)	322.0	389.1	389.1	389.1	389.1	389.1
2	-material costs	145.9	124.8	124.8	124.8	124.8	124.8
3	-non-material costs (without interest)	176.1	264.3	264.3	264.3	264.3	264.3
4	-financial expenditures	0	22	20.3	15.4	10.0	4.0
5	GROSS PROFIT (I - II)	51.0	83.8	85.5	90.3	95.7	101.7
6	TAX	5.1	8.38	8.55	9.03	9.57	10.17
7	NET PROFIT (5 - 6)	**45.9**	75.42	76.95	81.27	86.13	91.53

Source: Family agricultural husbandry (Tomislav Simonovic – Vinca).

Table 8. Income statement of the project (000 EUR)

No.	Elements	Years of the project				
		1	2	3	4	5
I	TOTAL INCOME:	121.9	121.9	121.9	121.9	121.9
II	TOTAL EXPENDITURES: (1+4)	89.1	87.4	82.5	77.1	71.1
1	OPERATING EXPENDITURES (2+3)	67.1	67.1	67.1	67.1	67.1
2	-material costs	-21.1	-21.1	-21.1	-21.1	-21.1
3	-non-material costs (without interest)	88.2	88.2	88.2	88.2	88.2
4	-financial expenditures (interest on loan)	22.0	20.3	15.4	10.0	4.0
5	GROSS PROFIT (I - II)	32.8	34.5	39.4	44.8	50.8
6	TAX	3.28	3.45	3.94	4.48	5.08
7	**Difference in net profit**	**29.52**	**31.05**	**35.46**	**40.32**	**45.72**

Source: Family agricultural husbandry (Tomislav Simonovic – Vinca).

The breakeven point, according to Subic (2010), shows critical and minimal values of production size and income from sale, under which the investment project is no longer justified.

Table 9. Breakeven point (000 EUR)

No.	Description	Years of the project				
		1	2	3	4	5
1	Total income from sold products	121.9	121.9	121.9	121.9	121.9
2	Variable costs	10.7	10.7	10.7	10.7	10.7
3	Fixed costs total	78.5	76.8	71.9	66.5	60.5
4	Contribution margin (incomes-variable costs)	111.2	111.2	111.2	111.2	111.2
5	Breakeven point (fixed costs/ contribution) x100	70.59	69.06	64.66	59.80	54.41

Source: Family agricultural husbandry (Tomislav Simonovic – Vinca).

According to the breakeven point can see that, the highest risk of the investments in building the wells, is in the first year of the project and then the production size must not fall under 70.59% (Table 9).

The cash flow of the project for building the exploitation wells in the husbandry and provision of necessary working assets for undisturbed realization of the planned production size and the assortment of vegetable products, result with a positive amount of net cash revenues (Table 10).

Table 10. Cash flow of the project (000 EUR)

No.	Elements	0 year	Years of the project				
			1	2	3	4	5
I	**TOTAL CASH REVENUES**	**231.0**	**121.9**	121.9	121.9	121.9	**301.2**
1.	Total income		121.9	121.9	121.9	121.9	121.9
2.	Funding sources	**231.0**					
	-equity	24.0					
	-borrowed	207.0					
3.	**Salvage value**						**179.3**
	-fixed assets						155.3
	-working assets						24.0
II	**TOTAL EXPENDITURES**		**82.1**	**104.1**	**109.5**	**115.5**	**122.1**
1.	Investments	**231.0**					
	-in fixed assets	207.0					
	-in working assets	24.0					
2.	Operating expenditures (without interest and depreciation)		56.8	56.8	56.8	56.8	56.8
3.	Profit tax		3.28	3.45	3.94	4.48	5.08
4.	Interest		22.0	43.9	48.8	54.2	60.2
III	**NET CASH REVENUES**	**-**	**39.8**	**17.8**	**12.4**	**6.4**	**179.1**

Source: Family agricultural husbandry (Tomislav Simonovic – Vinca).

Net cash revenues of the project's economic flow for building the wells realize positive values, except in the beginning of the investment when makes investment of the entire needed amount (Table 11).

Table 11. Economic flow of the project (000 EUR)

No.	Elements	0 years	Years of the project				
			1	2	3	4	5
I	**TOTAL CASH REVENUES**	**0**	**121.9**	**121.9**	**121.9**	**121.9**	**301.2**
1.	Total income		121.9	121.9	121.9	121.9	121.9
2.	**Salvage value**						**179.3**
	-fixed assets						155.3
	-working assets						24.0
II	**TOTAL EXPENDITURES**	**231.0**	**82.1**	**80.5**	**76.1**	**71.3**	**65.9**
1.	**Investments**	**231.0**					
	-in fixed assets	207.0					
	-in working assets	24.0					
2.	Operating expenditures (without depreciation)		78.8	77.1	72.2	66.8	60.8
3.	Profit tax		3.28	3.45	3.94	4.48	5.08
III	NET CASH REVENUES (I-II)	**-231.0**	**39.8**	**41.4**	**45.8**	**50.6**	**235.3**

Source: Family agricultural husbandry (Tomislav Simonovic – Vinca).

In accordance to the net cash revenues got from net economic flow and their discounting, i.e. further analyses which make according to their values, was determined that the investment was economically justified.

The net present value of the project is higher than zero (i.e. it amounts 54.46), which means that the investment in building the wells for irrigation and heating of a glasshouse is economically justified (Table 12).

Table 12. Net present value of the investment project (000 EUR)

No.	Elements	"O"	Years of the project					Cumulative
			1	2	3	4	5	
0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**9**
1.	Net cash revenues from economic flow	**-231.0**	**39.8**	**41.4**	**45.8**	**50.6**	**235.3**	**412.9**
2.	Discount rate (%)		**10**	**10**	**10**	**10**	**10**	
3.	Discount factor		0.909091	0.826446	0.751315	0.683013	0.620921	
4.	Present value of net cash revenues		**36.18**	**34.21**	**34.41**	**34.56**	**146.1**	**285.46**
5.	Net present value of the project	285.46- | -231.0 | = **54.46**						
6.	Relative net present value							

Source: Economic flow of the project

In accordance to an indicator value of relative net present value can be seen that, during the project's duration, was covered a price of funding sources and that was realized a specific value through this value.

Internal rate of return was calculated according to trial rates. As domestic authors cite (Ivanović, 2013), the internal rate of return shows a real rate on return on investment, i.e. the internal rate of return is the one discount rate where the net present value of investment is equal to zero.

The internal rate of return, for building the exploitation wells on the husbandry, is 20.06%. The investment is profitable regarding that the discount rate (10.00%) is lower than the stated investment's internal rate of return (20.06%).

Pay-back period of investments, is between four and five years. We have the following investment's recovery term T = 4.63 years = 4 years and 7.56 months. The investment is economically justified, while the return term is shorter than 5 years, i.e. than the project duration.

Conclusion

Evaluation of the investment in building the exploitation wells in an individual producer's husbandry, who already owns the glasshouse, was made by dynamic methods for investments evaluation. For funding the fixed assets were used borrowed funds, and as a source of working assets were used the equity. Duration of the project is five years, as well as the borrowed funds from commercial banks.

By the investments evaluation were got the following results:

- Net present value of the investment is 54.46 and the investment is economically justified regarding that the net current value is higher than zero,
- Internal rate of return, i.e. the internal rate of interest in the husbandry is 20.06%. In regard to the discount rate (10.00%) is lower than the internal rate of return of the stated investment, the investment is profitable and economically justified,
- Funds invested in building the exploitation wells in the husbandry and providing necessary working assets for undisturbed realization of the planned production size and the assortment of vegetable products will return in four years and two months. As duration of the project is 5 years, the investment is economically justified according to this indicator, too.

With dynamic methods for investments evaluation were determined that investment, which perform in building the examining – exploitation wells in the husbandry and providing necessary working assets for undisturbed realization of the planned production size and the assortment of vegetable products, is economically justified.

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EKONOMSKI EFEKTI UPOTREBE TERMALNE VODE U PROIZVODNJI POVRĆA NA PODRUČJU SREDNJEG PODUNAVLJA[5]

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Apstrakt

Investiciona ulaganja u poljoprivrednu proizvodnju radi modernizacije procesa proizvodnje, jedan je od osnovnih faktora razvoja poljoprivrede i ruralnih područja, kao i privrede u celini. U trenutnim uslovima poslovanja, kada se domaći agrar susreće sa alarmantnim problemima u sferi primarne proizvodnje (kao što su: produktivnost rada; nedovoljan broj radnih mesta; nizak učinak sredstava za rad i sl.), povećanje obima investicija u značajnoj meri može uticati na jačanje konkurentnosti, kako na domaćem, tako i inostranom tržištu. Investiranje u izradu istražno-eksploatacionih bunara, iz kojih će se dobijati termalna voda koja će služiti za navodnjavanje i zagrevanje staklenika za proizvodnju ranog i kasnog povrća van sezone, predstavlja značajnu modernizaciju poljoprivredne proizvodnje. Takav vid ulaganja, može biti dobar primer u cilju unapređenja procesa proizvodnje i povećanje prihoda na porodičnom poljoprivrednom gazdinstvu gazdinstvu.

Ključne reči: *investicije, povrtarska proizvodnja, izgradnja bunara, termalna voda, staklenik*

5 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. Projektni period 2011-2014.

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SECONDARY VOCATIONAL EDUCATION IN SERVICE OF ECONOMIC GROWTH AND SOCIETY DEVELOPMENT

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Summary

Fast social–political and economic changes European societies have been faced with in the last few decades have had a significant influence on educational changes, highlighting the needs for the reform of educational systems and their adapting to the new needs of economy and society. For this reason, more attention is paid to the issues of reform processes regarding the area of secondary vocational education in professional literature. Such practice is being conditioned by the fact that modernization of this important segment of educational system, having in mind its direct connection to economy and business world, presents a crucial assumption of an overall social and economic development of every country.

For the reasons mentioned above, this paper deals with problems in the reform of vocational education in Serbia, and vocational education is being discussed from the context of economic growth and society development. The aim of this paper is to point out the importance of economic value of education as well as importance of investments in human resources. Theoretical elaboration and set tasks have forced the use of descriptive, comparative-historic and analytical-synthetic method, as well as the use of content analysis. Analysis results, however, indicate that even though today's education economic value of education is undisputed, educational system in our country still faces a multitude of problems and challenges posed by modern society.

Key words: *secondary vocational education, investments in knowledge, economic development, development of human resources, economic value of education.*

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Introductory considerations

Since the education of people became a very significant factor for economic development and an important characteristic of a population, it is now necessary to consider education as a form of capital that has a huge impact on the economy and the overall socio-economic development of a country. Success, progress and the competitive position of countries in the contemporary world largely depend on the intellectual potential of a company they own. Development based on knowledge and innovation is at the centre of development strategies of most countries.

One of the most important features of education is the growing knowledge of the mutual interdependence of education and economic development. Under conditions of rapid scientific and technological development, education is increasingly becoming an immediate force and a decisive factor for economic development of any society. For these reasons, the problem of the need for appropriate staff today is equally present in both developed and developing countries, and is closely associated with the state and the economic situation in each country.

In knowledge based economies the importance and the need for development of intellectual potential of the employees and the population as a whole are being insisted on in particular. This potential is a vital prerequisite and basis of all further development of high-tech organizations.

Investments in staff training are considered as the most comprehensive and most profitable investment, which have significant meaning. Therefore, it is necessary to work on the recognition of the importance and the need to invest in people and education. Investment in education which provides the skills and that enriches knowledge of future workers we consider the key elemental development process of modern society and modern economy. For example, human resources in tourism are one of the most important segments of the quality of the services provided. If a travel agency wants to function optimally and gain profit, it should have educated, motivated, and therefore satisfied staff, because the success of the company lies in their human resources. This also means that behaviour within the organization depends on the educational and cultural values of their employees (Kovačević et al., 2012).

Investing in people is increasing human capacity and more efficient decision-making and, therefore, investment in education must be treated in the same way as investment in capital equipment. Investment in education and the provision of adequate human capital gains the character of the investments and becomes a primary requirement for Serbia. More specifically, education policy is not only a policy of creating human capital, but is part of the overall development of social policies. In this sense, in addition to the observation of quantitative characteristics of the population as a relevant developmental factor, it is important to shed light on the qualitative aspects of the population, expressed in the level of qualification and training structures.

Taking into account all these, multi-functionality and an ever increasing social-economic importance of education and the quantum of change that is necessary to reach this area, we

decided to process the following questions using comparative and analytical-synthetic view:

- education as a factor of economic development of society;
- socio-economic context and the importance of vocational education;
- the concept of competence and qualifications in vocational education ;
- reform of vocational education courses in contemporary social development.

For the purposes of the processing, we decided to use a descriptive, comparative and analytical-synthetic method, and (theoretical) content analysis.

Education of society as a factor of the economic development of the population in Serbia

Education and human capital today are an important prerequisite for economic growth and social development. Investments in the education of human resources become primary in many countries of the modern world, not only because of the need to contribute to economic growth, but also because education has always been associated with certain values in society and it initiated the overall social development.

Because of the connections with the socio-economic, cultural and other aspects of development, educational and qualification structure of the population indicators are of great importance for any society. Therefore it is very important to achieve compliance of the needs of the economy and society and with the availability of work force in terms of its scope and level of education.

Inadequate level of education of the population is one of the serious problems which our country faces and in this sense is a limiting factor for the creation of a knowledge-based society. Although the average level of education in Serbia is growing, analysis, however, suggest that this growth is slower than the one in the EU countries.

Broadest segment of education is primary education –a mandatory form of education. The educational structure of the population aged 15 and above in Serbia, according to the Survey done in 2010 is: 3.2% no schooling, 34.5% lower, 48.4% medium and 13.9% high (MF RS, 2011). Serbia also has a relatively low average level of education among the adult population, and the situation is especially bad in rural areas of southeast Serbia and Roma settlements. Around 20% of village children and half of children from the Roma settlements never start school, in other words there is a high percentage of uneducated population, unemployed and individuals older than 65, which produces poverty and social divisions within the population.

The rate of highly educated population is very low 5,5% of total population in Serbia. Also, there are huge differences on a regional level: Belgrade has by far the biggest amount of population with a faculty degree (11,8%), and above average is just only The South Bačka district (6,7%). One of the problems is the concentration of staff with faculty degrees in big cities, the young who come to university centres (Belgrade, Novi Sad, Niš) to get a faculty diploma, do not come back to the areas they came from. This is because bigger cities offer

better socio-economic conditions and better chances for employment, and also there is a big "brain drain" out of country.

The comparative analysis indicates a bad qualification structure of employed in Serbia. The basic characteristic of European trends in educational structure of employed is the growth of higher qualification levels- above secondary school and at the same time a decrease of all blue collar occupations – highly skilled, skilled, semi-skilled and unskilled workers.

Also, the unemployment rate in Serbia of around 30% is one of the highest in Europe. Also, what are worrying in particular are the facts that out of the official 900 thousand unemployed, around 48% are young people, most of whom have high school degree. Of these almost 90% of the young unemployed ones are waiting for employment for more than 5 years (Đurić, 2012). The high unemployment rate can hardly be justified only by problems that come with the transition process which is affecting our society. Therefore, the problem of unemployment, and the issue of employability and employment, must be viewed in the context of the competencies that the education system provides to young professionals. In that sense, it is especially important to point out the need to reconsider the values of knowledge, skills and abilities acquired during their studies.

The present crisis in the process of transition and accession to the EU has caused the decrease of consumers' purchasing power, as well as of the influx of direct foreign investments, which requires the creation and application of a new development strategy, especially in the sphere of investments (Miletić et al., 2012).Among other things, the aforementioned problems are caused by the non-existence of vocational education schooling with the labour market demands, and lack of strategy in terms of projections of the need for specific profiles of professionals to match the demands of the modern economy based on the market economy. This is confirmed by the fact of high unemployment among the youth, which at the same time, lack professional qualifications and work skills. Therefore, the content of educational vocational schooling must be oriented to the labour market needs and focus directly on business, profession, or a combination thereof.

Among the mentioned problems, the reform of educational system according to the needs of the economy must become a priority for our country's future political agenda for social-economic and technological development. Modern technological processes demand an educated population which can use all of the available technology, and in that sense, qualification of human resources for development and application of new technologies gains in importance. Due to the direct connection between vocational education, economic growth and development of society, full attention should be paid to the reform of this important segment of the educational system.

Development based on knowledge and innovation is at the core of developmental strategies in a majority of developed countries. Developed societies seek to become "knowledge societies". Having in mind that the effects of education do not only influence individuals, but also society, it can be said that in the modern world knowledge becomes a basic developmental factor. Therefore, the establishment of educational system, which is in tune with needs of the

economy, means making of solid links between employers, educational institutions, scientific institutions in appropriate areas and job market. These links must be institutionalized on local, national or regional level. These links are necessary for so as to guarantee that education will follow the demands of the economy for staff which will have the relevant expertise, in tune with levels of modern technological growth.

In economies based on knowledge the economic growth and development are identified with the scientific-technological progress and continuous "intellectualization of the basic factors of production, with the development of human resources and human capital as the most important factor of economic growth and social development. The human capital is now increasingly referred to as a new factor of production which is the most reliable evidence of the newly emerged reality: while earlier material resources and capital assets (tangible resources) accounted for about 80% in the execution of business plans and in creating and implementing the goals of the organization, a human factor "intangible resources" (less tangible resources) (intangible resources) accounted for 20%, today the situation is qualitatively different. Rather, the intangible resources in 1999 reached 80% of total assets in the largest number of companies and organizations in the U.S., while the share of capital resources and tangible assets reduced to 20%, a trend also present in other knowledge-based economies. The share of new knowledge, contained in technologies, equipment and production organization in the developed countries amounts for 70% to 85% of gross national production (Kulić, 2012).

Securing of high-quality work force, which is ready and able to respond to the demands of modern technologies on one side and to conditions of market economy on the other demands a continuation of the educational reform on all levels. It is also necessary to work on strengthening of the realization that a reform is a constant process in all participants in the educational process and society as a whole and that the responses of the educational system to the demands of economy must be swift and efficient. In that sense, one of the primary tasks for the Republic of Serbia is the continuation of the started processes of modernization and education system reform and their coordination with the needs of the market economy. As this process is complex, long-term and gradual, it cannot be accomplished by the Ministry of Education alone, nor by educational institutions (vocational schools, vocational faculties and universities), but all parties of interests who show their needs in the educational system must be involved – employers, companies, unions, employment bureaus, chambers, employer unions and state management on all levels.

The task of the reform is to create an environment which will allow innovative thinking and solve problems of each individual located in the Republic of Serbia, with a goal of transforming their own ideas into innovation and contribute to the developmental components of our country. In this regard, special attention must be paid to the issues of establishing a system of social partnership between the world of education and the world of work, which is of particular importance to vocational education. Since this segment of the education system a significant number of teachers practice teaching without preparation, which implies a lack of minimum pedagogical-psychological and methodological knowledge and competencies, particular attention must be paid to issues of continuous professional development of teachers.

Socio-economic context and the importance of vocational education

Among other things, the process of transition which from the late 20th and early 21st century engulfed our society meant posing many important questions related to the problems of modernization and democratization, transition to a market economy, the creation of a "knowledge society", labour mobility, suppression of unemployment and many other questions. In the context of these changes, literature has particularly singled out the importance of reforming the existing and establishing a new and more effective educational system, which would successfully respond to the growing and complex demands of modern society.

In circumstances which insist on high qualification employees, which include mastery of a relatively wide array of knowledge on science, education development strategy must adapt to the new challenges that bring prosperity and seek adequately educated and trained individuals and the nation as a whole. For these reasons, the overall development of education should become a priority of the state which, among other things, means that significantly greater government investments should happen in the education system, as well as the establishment of strategic planning for the development of the education system to meet the needs of modern society and a market economy.

Since vocational education is becoming an important factor and one of the key figures of the economic development of society, particular attention must be given to the reform and modernization of this segment of the educational system. Today, it is rightly said that in terms of the built efficient system of social partnership and joint action of all stakeholders, the vocational education and training for creating experts will be able to engage in a heated domestic and international competition in all areas (MPS RS, 2005).Highly trained and competent staff, which might occur as a result of the existence of a modern and efficient system of education, would represent an important social resource and an essential precondition for any technological, socio-economic and individual development.

Secondary education for qualified personnel becomes an important link in the advancement of modern society and is confirmed by contemporary European practice which confirmed that the presence of a large number of staff in some of these countries provides a rapid economic progress of society as a whole. The already mentioned practice is typical for those educational systems through which students develop the necessary professional vocational education competence and acquire knowledge that can effectively be applied in their everyday work.

The vocational education in Germany is often referred to as an example of "good practice" in modern literature. The system in this country is designed in such a way that companies give a significant contribution to the financing of vocational education and it is therefore understandable that they have the right to co-decision in all segments –starting from policy matters, the decrees on vocations, to the ways of the examinations. This way, the state gives up some of its powers and thus shifts responsibility on those who perform professional education, as well as on those who "buy" labour. However, control mechanisms remain in the jurisdiction of the state, whose duty it is to control the behaviour of all participants in the entire process, according to agreed rules.

The vocational education in Germany, despite some criticism for its inability to keep pace with economic and social conditions which are rapidly changing, as well as with the problems of the labour market especially pronounced in the eastern part of the country after the reunification of the country, according to some authors (Deissinger, 2004) today, though, is a representative element of the German education system. It is generally assumed that the German dual system, which is "work-based", has given a lot of good results in that country. It is, in fact, a well-designed and well-organized system of vocational education which represents an important factor in the economic development of this country. It is not surprising that the German concept of education has been applied with some modifications in other countries which have German as a language throughout education (Austria, Belgium, the Netherlands, Switzerland, etc.).

Much attention has been paid to vocational education reform issues in the works of contemporary Russian authors. Based on the understanding of the authors we can conclude that although the scientific community in Russia shows some dissatisfaction concerning the progress and results of reform approach towards the problems of vocational education, these changes have certainly contributed to the establishment of a comprehensive and efficient system of education. "These changes show that the system of education in Russia, due to its flexibility, democracy, the state and the social character of management, as well as openness to educational innovation, transformed to a degree that enables it to monitor and respond to rapid changes in Russian society and economy" (Kulić, 2007).

Analysis, however, shows that in most transition countries vocational education system, however, does not sufficiently meet the requirements of modern market economy. Therefore, in almost all analyses, secondary education in the countries in transition, points out that the centralized and rigidly controlled system does not truly meet the needs of children and youth. Thus, the centralized form of organization of the vocational education system caused a lack of connection between the offers of vocational education and regional and local needs of the economy and society.

Today's practice shows that the obsolete (centralized) system of vocational education is characterized by a lack of flexibility to adapt to economic and social-politic changes and that it is not oriented to the dynamic labour market which is based on competition. Also, it can be noticed that school, especially on secondary level, does not pay the attention that is needed to be paid to further training and modernization of knowledge of their students so that education does not meet, in sufficient measure, the needs of a work place. Teaching plans and educational profiles are made without consulting the needs of the economy, while teachers, by rule, do not possess the adequate methodological-didactical knowledge and skills.

Pointing to the fact that students of vocational schools have certain knowledge, but that due to new technologies, new methods of work and new knowledge, their already existing knowledge is out of date, and some authors (Savićević, 2000) rightly point out that schools cannot remain passive in such circumstances, or they will be forced to work together with organizations in order to thoroughly examine the nature and content of work, as well as the emergence and disappearance of many professions.

On the other hands, the intensity of changes which characterize the modern economy, point out to the need that the students adopt, during their vocational education, apart from vocational, a whole spectre of general competencies which would enable them to successfully adapt themselves to new work and professional environments. Young generation which is educated today enters the world which passes through changes in all of its spheres – economic, cultural, political, scientific, and technological sphere and in social relations. In those changes education is given one of the key roles and becomes a factor of unity and integration within society.

In order to adequately respond to these new demands education should provide the following: required cognitive and theoretical knowledge in order to facilitate the acquisition of expert (professional) skills which are becoming more sophisticated, given the technological changes in the labour process, broad competencies needed in modern production and in the sphere of services, not only for the current production, but for continuous lifelong learning and training employees, and such vocational training that will support and strengthen self-productivity (Despotović et al., 2002).

From the eighties of the 20th century - in defining vocational education -much of the attention is increasingly focused on the individual and the vocational education's social consequences, and the acquisition of knowledge, skills and competences that provide employment, which is taken as the ultimate goal of vocational education and key criteria in its definition. For these reasons, the primary goal of education in developed countries is becoming employed and employment itself (Despotović, 2010). However, since the 90s employment, as a primary goal of vocational education, is relativized and, at the same time, as one of the basic goals, employability and career development often stand out.

But despite the constant pointing to the importance and significance of vocational education, practice shows that the system of education in our country faces many problems and challenges of modern society. In recent decades, the system of vocational education in the Republic of Serbia is subjected to constant criticism by experts because it does not provide the skills to students which they will need when they enter the labour market. After graduating from vocational school students are usually not able to think critically, nor are they able to solve any practical problems they might encounter during work. Therefore, the system should be adjusted in such a way that the contents of education is changed and focused more on practical skills, and the students should get the competencies which will suit the modern demands of the labour market.

On the other hand, the assumption is that the modernization of vocational education and training, which would make this segment of the education system more cost-effective and efficient, would contribute to the economic recovery of the country and provide support for future European integration in our society. In this regard, special attention must be paid to the problems of harmonization of vocational education with the changes and demands of the labour market, the establishment of mechanisms for the motivation of the teaching staff in further education and training, as well as issues of competence and qualifications in vocational education.

The concept of competence and qualifications in vocational education

Understanding what human potential one of the most important prerequisites for the overall development of society and an essential factor for advantage in the labour market, contributes to intensifying discussions on the acquisition of competencies in the educational process. Education focused on the development of competencies (competency based education) developed during the Industrial Revolution, when education was instrumental in value and becomes increasingly subject to the laws of economic growth, economic efficiency and increasing productivity of the employees.

Since the response to the challenges of modern society sees the ultimate goal of education in moving from knowledge to competency, current literature is pressing efforts to determine the competence concept and defining a new way. In this sense, the existence of a large number of different actors interested in the educational process and the definition of the problems of defining the concept of competence is evident, such as various professional associations, educational institutions, businesses, and so on.

In an attempt to define this term, Andrejev (2006) points out that competence usually involves some integrated ability to solve practical problems that arise in various spheres of life. This ability, of course, assumes the presence of knowledge, but as a reasonable point of view of this author, it is not necessary to have knowledge as such but to master certain individual characteristics and to be able to find and select required solutions at any moment.

The International Committee on Standards of Training and teaching (The International Board of Standards for Training, Performance and Instruction) defines competency, in turn, as an integrated set of skills, knowledge and attitudes that enable the individual to effectively perform activities of a given occupation or function in accordance with the expected standard (Spector et al., 2006).

Since particular attention is paid to the issues of qualifications and competence in the works of contemporary Russian authors, some authors (Zeer, 2003) rightly point out that the Russian pedagogical literature substantially enriched the term "key qualifications" which originated in western pedagogical literature. In Russian understanding of vocational education, for which a majority of Russian authors primarily use the term professional, the emphasis is on the preparation of specialists of wide profile, which assumes the integration of several professions. The idea of large-profile specialists is contained in need of modern society for professionals who are able to easily adapt to the modern requirements of production and, thereby, possess the knowledge and skills necessary for a wide range of professions, in order to ensure occupational mobility and international competitiveness.

Analysing the perceptions of Russian authors, Kulić, 2008, points out that authors consider "professional education that develops character "as a paradigm for the 21st century and cannot be fully understood outside the essentially complex concepts such as "key competencies", "qualified", "competence", "important professional characteristics", etc.

Key competences represent a cross-cultural and interdisciplinary knowledge, skills and abilities necessary for adaptation and productive activity in various professional communities, and they have multifunctional character. The famous Russian author Simonenko (Симоненко, ed., 2006) thinks that the core competencies involve intercultural and interdisciplinary knowledge, skills and habits necessary to adapt and productive work in various professional communities. The author points out that this type of competence assumes universality, social and professional mobility of professionals and enables successful adaptation to different social and professional communities.

Achieved key competencies can be used for reaching various professional tasks ad represent a possibility for personal fulfilment in life, work and learning of every individual. Key competencies, which an individual achieves at the end of vocational education, represent transferable, multifunctional package of knowledge, skills and abilities which would enable them to achieve personal fulfilment, development, professional mobility and employment (European Commission, 2003).

Pointing out that the key competencies define universality, social and professional mobility expertise and flexibility in adapting to different social and professional relationships, some Russian authors (Сластёнин, 2006) also talk about professional (vocational) competence, which is seen as one of the stages (steps) in the development of professionalism. Under vocational competencies these authors, apart from functional literacy, professional qualifications and personality culture, put attainment of certain level of employees' vocational education, their knowledge, abilities and skills, which are necessary for performing of certain jobs.

In contemporary psychology and adult pedagogy, in addition to the key issues and professional competence, great attention is paid to issues of key skills and occupational standards. Qualifications, in the broadest sense, can be defined as formal statements of competence or competency standards relevant to work and access to employment, professional development and advancement in the work. Therefore, between competence and competency standards, on the one hand and qualifications, on the other hand, can not equate, for each competency and qualification is not the same. Qualifications, in fact, are a socially recognized competence.

As for the concept of key qualifications, special attention is paid to the 80-ies of the last century in Germany. The initiative came from the pedagogical experts associated with the learning centres to prepare specialists in large industrial enterprises and companies (Dresden-Bank, Mercedes, Opel, Siemens, Volkswagen, etc.). In this regard, began the preparation of new projects oriented to the development of key skills, whose work involved German educators and psychologists (R. Bader, K. Beiderwiden, Borretty R., U. Klein, L. Reetz, A. Schelten, J. Zebeck, et al.). This researches formed the basis for the preparation of key qualifications catalogue, which includes: general education knowledge, skills and habits of a wide profile: the culture of speech, foreign languages, etc., standard professional knowledge and skills, cognitive skills - the ability to transfer knowledge and skills from one form of professional activity into other activities, prob-

lem-solving abilities and others, psychomotor skills, personal qualities: responsibility, self-reliance, optimism, motivation, etc., and social skills: cooperation, readiness for cooperation, communication, tolerance, fairness (Zeer, 2003).

Based on the analysis of these authors, it can be concluded that in the present series of works - the conceptual competency coordinate approach is indicated quite clearly and that its main intention is expressed, which is reflected in the effort to strengthen the practical orientation of education. It is, in fact, the construction of a new type of educational standards, in which the final requirements to graduate should be that students of vocational schools should express themselves in the form of a summary of competence, as well as the translation of basic educational standards with knowledge of language to language competence.

The reform of vocational education courses in contemporary social development

Socio-economic and political changes in contemporary European societies, especially in Southeast Europe, which are taking place in recent decades have substantially influence the changes in education, in the way that they are changing it radically. Proceeding from this, most countries strive to transform their educational systems, to make them more flexible and adaptable to the new demands of the economy and society. In those circumstances, educational reforms have a wide array and span from reforms of institutional structure and curriculum (program), all the way to education and teachers' status (Kulić, 2007).

Analyses show that in this period of the development of European education it is receiving new impetus and direction to concentrate specifically on professional development and training. The cornerstone of these changes set the document *White Paper on Education* (1996.), which marked the beginning of practical reforms in the system of vocational education and training in the European Union (Despotović et al., 2002). The emergence of this document is related to the results of the analysis of the economic situation in Europe, which showed that the continent lags behind compared to the others, which is, for the most part, caused by the lack of skilled labour and non-compliance between educational supply and the actual needs of its market economy.

Also, in November 2002 in Copenhagen, the Ministers responsible for vocational education of EU Member States, EFTA and EEA and candidate countries for EU membership, supported the *resolution on the promotion of cooperation in vocational education and training,* as well as a strategy for improving the performance, quality and attractiveness of vocational education (Copenhagen Declaration, 2002).

The need for the creation of new models of education, were caused by the intense social, economic and technological changes which have taken place in recent decades. Mentioned needs arise not only from a number of weaknesses in the present but also the knowledge of the relationship of this segment of the educational system with the labour market and economic growth and development of society. For these reasons, most countries point out Vocational Education as the greatest importance and seek to modernize it in

line with the current demands of society and market economy. Reform of this part of the education system is an important prerequisite to mitigate the socio-economic contradictions and integration in European and global economy's economical flows.

In accordance with the requirements above, the Ministry of Education and Sports of the Republic of Serbia in 2001, began the preparations for the reform of vocational education. In this context, an analysis of the existing system of vocational education, which served as the basis for the preparation of the strategic framework for the reform of vocational education adopted by the Ministry in 2002.

The reform processes that started in 2001 and 2002 were continued in 2003, by defining priorities and key areas of operation. These processes are accompanied by the adoption of a number of key documents governing the area of vocational education and training in this period. Also in this period numerous hands-on activities to modernize vocational education in our country were initiated. As part of the reform of vocational education which is implemented in Serbia since the specified period and which is up to date, a number of schools have introduced new - experimental profiles that incorporate practices, skills and the modern educational approach. The need for new profiles was produced through analyses of market economy's state which show that a significant number of existing profiles does not match the needs of the modern economy, which represents one of important reasons of unemployment in Serbian society.

In cooperation with the Ministry of Education and Sports of the Republic of Serbia and the German Organization for Technical Cooperation (GTZ), and with the help of subordinate institutions of secondary education in Serbia since 2003 the evolving concept of the politics of education tailored to changed demands of the labour market. In working directly with students considerable attention has been devoted to practical exercises, while for teachers, especially for experts without professional pedagogical education, the need for special pedagogical training.

Analyses related to monitoring the employability of students who have completed such programs, generally show good results. Educational programs are designed in a way to enable students to acquire functional and useful knowledge, and that they are effectively adapted to lifelong learning. The new educational profiles are designed taking into account the demands of the labour market and in line with the current needs of the Serbian economy, which allows students to get easy jobs.

Unfortunately, this practice is now restricted to a relatively small number of schools and profiles, while the majority remains unreformed. It is obvious that our society today lacks the capacity necessary for the consistent implementation of the reform of vocational education. Today many of the demands for reform but reformed educational segment suggest that the reform has not gone very far. Practice shows that even though we are in the education reform started from similar positions, the fact is that today, it is significantly behind compared to most countries in the region.

Concluding remarks

Therefore, the need for reform of vocational education arise not only from a number of weaknesses in the present but also the knowledge of the relationship of this segment of the educational system with the labour market and the economic prospects of different regions and countries. For this reason, in most countries, it is this part of the education system that is of greatest importance, and it is trying to revitalize and modernize in line with the current demands of society and market economy.

The reform of this part of education, especially in transition countries, represents an important pre-condition for damping of social-economic contradictions and inclusion in European and world economic flows. The analyses' result, however, show that despite general consensus on the importance of vocational education, as well as the fact that this segment is given the biggest priority, the educational system in the Republic of Serbia still faces many problems and challenges posed by modern society.

For this reason today it is necessary to continue work on revitalization and modernization of the established educational system in our country. In that sense it is necessary to stress the creation of new, more flexible and more open educational system in which vocational education will take a qualitatively different places and role. In order to enable the young to acquire functional knowledge and the development of professional competencies needed for work, in the system of vocational education apart from schools as inevitable institution place should be found for enterprises and other social actors which are interested in the outcome of vocational education.

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SREDNJE STRUČNO OBRAZOVANJE U FUNKCIJI EKONOMSKOG RASTA I RAZVOJA DRUŠTVA

Igor Đurić[4], Dejan Đurić[5], Predrag Živković[6]

Apstrakt

Ubrzane društveno-političke i ekonomske promene, sa kojima se evropska društva tokom poslednjih nekoliko decenija suočavaju, bitno utiču na promene u obrazovanju i ističu zahteve za reformom obrazovnih sistema i njihovim prilagođavanjem novim potrebama privrede i društva. Stoga se u savremenoj stručnoj literaturi sve više pažnje posvećuje pitanjima refomskih procesa koji se tiču područja srednjeg stručnog obrazovanja. Takva praksa je uslovljena činjenicom da modernizacija ovog važnog segmenta obrazovnog sistema, s obzirom na njegovu direktnu povezanost sa privredom i svetom rada, predstavlja bitnu pretpostavku ukupnog društvenog i ekonomskog razvoja svake zemlje.

Iz pomenutih razloga, u radu se bavimo problemima reforme sistema stručnog obrazovanja u Republici Srbiji, i pritom stručno obrazovanje posmatramo u kontekstu ekonomskog rasta i razvoja društva. Cilj rada je da ukaže na značaj ekonomske vrednosti obrazovanja kao i na značaj investicija u ljudski kapital. Teorijska elaboracija i postavljeni zadaci nametnuli su potrebu da u radu koristimo deskriptivnu, komparativno-istorijsku i analitičko-sintetička metodu, kao i analizu sadržaja. Rezultati analize, međutim, pokazuju da iako ekonomska vrednosti obrazovanja danas nije nimalo sporna, sistem stručnog obrazovanja u našoj zemlji se i dalje suočava sa brojnim problemima i izazovima savremenog društva.

Ključne reči: *srednje stručno obrazovanje, investiranje u znanje, obrazovanje, razvoj ljudskog kapitala,ekonomska vrednost obrazovanja.*

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WHERE THE EUROPEAN UNION SHOULD MULTIPLY ITS MONEY: STIMULATING MEASURES IN THE ECONOMIC MONETARY UNION

Anouschka Groeneveld[1], Wim Heijman[2]

Summary

The aim of this article is to investigate in which sectors and countries the European Union should invest to diminish the economic gap between different member states. It answers the question at which sectors and regions the European regional policy should be directed. In an attempt to indicate which regions and sectors have favourable investment opportunities, multipliers are calculated for all but three countries of the Economic Monetary Union. The multipliers are calculated using a technique described by Jensen et al. (1979) and Heijman and Schipper (2010). The highest multipliers are found within the Construction sector. To provide policy recommendations we focus on countries with high multiplier values and high unemployment rates. If we assume that multiplier values and unemployment rates are important, then the European Union should spend most in Slovakia, Estonia, Italy, Greece, and Spain. The spendings in Estonia, Slovakia, and Greece would fall under the Cohesion Funds.

***Key words**: Multipliers, Regional Policy, Investment, Regions, Stimulating measures*

JEL: *R10, R15*

Introduction

There are considerable economic disparities between the members of the European Union. The Regional policy of the European Union and especially the Cohesion Funds, aim to diminish the economic gaps between the different member states. We aim to provide insights in investment strategies for the European Union. In an attempt to indicate which regions and sectors have favourable investment opportunities, multipliers were calculated for all but three countries of the Economic Monetary Union. The countries that are not taken into account in this paper are Cyprus, Malta, and Luxembourg. Our paper includes seven sectors in which the European Union could invest. These sectors are: Agriculture

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and fishing, Industry, Construction, Services, Wholesale and retail trade including hotels plus restaurants and transport, Financial intermediation including real estate, and Public administration including community services. Before we start our multiplier analysis we will perform an evaluation of the determinants of a favourable investment climate to supplement our findings. A brief overview of the instruments and stimulating measures that are available is presented. To give an insight in the validity of our results we present our expectations for the multiplier values. These expectations are based on existing literature. Next, we turn to the task of calculating the multipliers. Finally our results are presented and coupled with policy recommendations.

Determinants of a favourable investment climate

In the short run governments can try to stimulate their national economy. However, it is almost impossible to keep stimulating the national economy forever. An economy should be self-sufficient in the long run. Private investments are an important factor in achieving self-sufficiency. We focus here on situations that will attract foreign direct investments (FDI) and which will be advantageous for the state of the national economy. An open economy, a large domestic market, a similar language, similar institutions, and a positive economic growth attract FDI (Sharma, Bandara, 2010). A high GDP is assumed to result in better infrastructure, higher labour productivity, and more high quality institutions. Therefore GDP can be considered a determinant for FDI (Bellak et al., 2010). Other attractors for FDI are a low tax rate, high Research and Development spendings, a low inflation rate, and a low risk factor associated with the country. The existence of economic clusters, network and agglomeration effects, exchange rate stability, and low labour costs will also result in higher FDI (Procher, 2011). External economies of scale are often a crucial factor in the location decision of FDI (Mullen, Williams, 2005). The three main benefits of external economies of scale are the availability of specialized suppliers, labour market pooling, and knowledge spill overs (Krugman, Obstfeld, 2009).

Government instruments and stimulating measures

A common distinction in government instruments is the division in regulation, voluntary action, government expenditure, and market based instruments. Regulatory instruments are also known as "command and control" (Carter, 2007). It *"involves any attempt by the government to influence the behaviour of business and citizens whereby the government defines standards"* (Carter, 2007). Voluntary action is an action that *"involves individuals or organizations doing things that are neither required by law nor encouraged by financial incentives"* (Carter, 2007). Government expenditures can be used by the government in an attempt to steer behaviour of individuals by strategically spending its own budget. Market based instruments work by enlarging the price of a certain product or activity.

If we again regard the determinants of FDI, we can derive a number of stimulating measures that would improve the national economy. An open economy attracts FDI, therefore opening up borders or lowering trade tariffs might be an effective strategy. To enlarge the market demand, one could take this a step further and become part of a

cluster of countries. To prevent a high risk profile a stable political climate should be created. The uncertainty associated with a highly fluctuating exchange rate should be lowered by stabilizing the exchange rate regime. Creating clusters of companies and establishing economies of scale will have a positive effect on FDI. Finally, a country should try to promote moderate wages and high skilled workers to be attractive for FDI (Bellak et al., 2010).

Expectations for the multiplier values

Multiplier effects capture the fact that growth in one sector can lead to growth in another sector. One could also state that a multiplier value shows the return on spending one euro on investment. Underlying our analysis is the input-output theory. The focus is on seven main sectors. We consider the link between sectors and the overall economy. A multiplier represents the impact on the national economy if an investment impulse is given to only one sector (Domanski, Gwosdz, 2010). In this paragraph we form expectations of multiplier values based on the existing literature.

Roberts (2009) stresses the importance of the agricultural food sector for the whole economy. This sector is very stable, due to the fact that food is a necessity. Demand for agricultural products is quite stable. Agricultural production is still a relatively labour intensive sector. If more people are employed in this sector the consumption spendings will go up. The agriculture sector has both backward and forward linkages, which will spread the economic growth in this sector towards other sectors. The backward linkages contain the products and services needed for modern agriculture. In turn, products from the agricultural sector are often used as raw materials in production processes in other sectors (Roberts, 2009). Therefore it would be reasonable to expect high multiplier values in this sector.

Rim et al. (2005) focused on backward multiplier effects for several sectors. We are interested in multipliers that capture both the effect of backward and forward multipliers. Still, the results found by Rim et al. (2005) can help us in forming our expectations. The findings of Rim et al. (2005) show that the highest backward multiplier can be found in the manufacturing industry. This would suggest that we will find a high multiplier value for the industry sector as well.

The construction sector is expected to exhibit high multiplier values. An important subsector of the construction sector is infrastructure development. Infrastructure is essential for other sectors to transport their inputs and outputs. Transport costs will be lower if a good infrastructure system is available. Benvenuti and Marangoni (1999) analysed the impact of infrastructure developments in Italy. Their work proved that a lack of infrastructure hindered economic growth in Italy in 1999. They stated that developments in the construction sector influence economic growth in all other sectors. Investment in infrastructure will have a direct effect, an induced effect, and an indirect effect. The direct effect of investment is the growth of the sector that the investment was aimed at. The induced effect is the higher consumption by workers in this sector. Finally, the indirect effect is the effect on growth in other sectors through backward and forward linkages (Benvenuti, Marangoni, 1999). In the long run improvements in infrastructure will enhance the image of the region, thereby

attracting new investments. This means it is likely that we will encounter high multiplier values for the construction sector.

Forming expectations on the multiplier values in the service sector is less straight forward. Domanski and Gwosdz (2010) expect higher multipliers in the service sector than in the construction sector. Francois and Woerz (2008) found proof that the importance of services as inputs in the post-industrial economies has grown. The, extent of intermediate linkages in the current service-based economies is larger than in the 1990s (Francois, Woerz, 2008). On the other hand, Mohnen and Ten Raa (2000) indicate that even though more and more resources are devoted to services, productivity gains are limited (Mohnen, Ten Raa, 2000).

The wholesale and retail trade, hotels, restaurants, and transport sector, is the most diverse sector, which makes it challenging to predict a multiplier value. According to O'Leary and Almond (2009) wholesale had a 4.5 % share in employment and a 4.9% share in GDP in the period 1990-2002. Retail had a much higher share in employment, 11.4%, but only a 5.6% share in GDP in the same period. Food and lodging accounted for 7.4% of the employment and 2.7% of the average GDP. The transport sector had the smallest share in employment and GDP, 3.2 and 3.3% respectively. If we put all these numbers together we arrive at a 26.5 % share in employment and a 16.5% share in the average GDP (O'Leary, Almond, 2009). Therefore it is reasonable to expect a high multiplier effect.

Financial intermediation and real estate should be less important according to the article by O'Leary and Almond (2009). It accounts for 5.8% of the employment and 15.9 % of the average GDP (O'Leary, Almond, 2009). Mohnen and Ten Raa (2000) are concerned with the sluggish growth in the financial and real estate sector. They relate this sluggish growth to low productivity gains after investment in (financial) services (Mohnen, Ten Raa, 2000). Our expectation is a low multiplier value for this sector.

Finally we consider the public sector. It is often stated that the public sector is less productive than the private sector. The reasoning behind this statement is captured by Baumol's law. The processes in the public sector are mainly labour intensive and do often not allow for substitution between labour and capital. Competition on the labour market guarantees that wages are the same for the public and the private sector. Capital for labour substitution is easier in the private sector. Technical advances lead to higher productivity levels in this sector. Higher labour productivity increases the marginal revenue and this in turn leads to higher wages. These higher wages increase the labour costs in the public sector without an increase in productivity (Hindriks, Miles, 2006). If this is the case we would expect low multipliers in this sector.

Methodology: Calculating the regional input output tables

We focused on multipliers for each country in the Economic Monetary Union (EMU). We deliberately made the choice not to include multipliers for the complete European Union. The countries within the EMU all have the same currency, and are therefore easier to compare. We divided each country into NUTS regions to capture regional differences. Multipliers were determined for NUTS 1 regions unless information on this scale level was

unavailable; in that case NUTS 2 regions were applied. Cyprus, Malta, and Luxembourg did not provide, or provided only very limited, input output tables. Therefore these countries were excluded from our dataset. We used data from 2000, unless another year is indicated.

Our data have been gathered from the Eurostat (2009) database. This database is freely accessible online. The Eurostat database contained too many sectors for our research. Therefore we compressed the input output tables provided by Eurostat into seven broad key sectors. These sectors were created by combining the information of the subsectors into larger sectors. The seven sectors for which multipliers were calculated are: Agriculture and fishing, Industry, Construction, Services, Wholesale and retail trade including hotels plus restaurants and transport, Financial intermediation including real estate, and lastly Public administration including community services. The sectors were grouped in this way, because this is conform the classification Eurostat uses for the data concerning employment. We needed these data to calculate the Location Quotients.

We needed regional input output tables to calculate regional and sectorial multipliers. Eurostat only provided national input output tables. Therefore we derived the regional input output tables based on the compressed national input output tables. The regional input output tables were formed using the procedure described by Heijman and Schipper (2010). First we calculated the location coefficient using the following formula by Heijman and Schipper (2010):

$$LQ = [X_i^r / \sum_{i=1}^{n} X_i^r] / [X_i^N / \sum_{i=1}^{n} X_i^N]$$

Whereby X^r_i denotes the output of sector i in region r, $\sum^n_{i=1} X^r_i$ denotes the total output in region r, X^N_i is the national output of sector i and $\sum^n_{i=1} X^N_i$ is the national output. In all cases i=1…n. This formula states that the location quotient is the result of dividing the relative share of a certain sector in the regional economy by the relative share of the same sector in the national economy (Heijman, Schipper, 2010; Jensen et al., 1979).

The regional sectorial input output data were not readily available, so we used a proxy in calculating the location quotient. The proxy we used was the employment rate at regional and national level. A comparison between the sectorial employment in a region and the sectorial employment on national level resulted in a good estimation of the extent of localization of a sector in the region. The employment rates for each sector and each region were extracted from the Eurostat (2011) database (European commission, 2011). This enabled us to determine the relative share of each sector in each region. Dividing the employment share of the sector in the region by the employment share of the sector on national level resulted in a location quotient. A sector is localized when the location quotient is equal to or larger than one.

To derive the regional input output table there is one more piece of information that we required. This was the national technical coefficient. The national technical coefficients could be derived by dividing the inter-sector and intra-sector deliverances for each sector by the total supply at basic prices for this sector.

Using the location quotients and the national technical coefficients we filled in the regional

input output table. If the location quotient is larger than one the sector is localized in the region and the production in the own region will be large enough to satisfy the regional demand. In this case the regional input output coefficient is supposed to be equal to the national input output coefficient. If the location quotient is smaller than one, the sector is not localized and supply form outside the region is necessary to cover the regional demand. The regional technical coefficient could be computed by multiplying the national technical coefficient with the location quotient.

In this way the regional technical coefficient table was constructed. The regional inter-sector deliverances were determined by the multiplication of the regional technical coefficient with the output per sector in the regions. Since the output per sector for each region was not readily available, we deducted the data using the relative shares of each sector. Finally we calculated the intermediate output, imports plus value added, and final demand plus exports. The intermediate output is the sum of all the rows of the regional inter-sectorial deliverances. The imports plus value added are then equal to the total output minus the intermediate output. We aggregated the columns and subtracted the imports plus value added from the total output to calculate the final demand plus exports (Heijman, Schipper, 2010).

Methodology: Calculating multipliers

From the regional input output tables derived in the previous paragraph we deducted the multipliers for each sector and region. The method we applied is the Leontief equation as presented in Heijman and Schipper (2010) and Jensen et al. (1979). The Leontief equation could be inferred in the following way:

$$AX + F = X$$

$$X = (I - A)^{-1}F$$

$$\Delta X = (I - A)^{-1}\Delta F$$

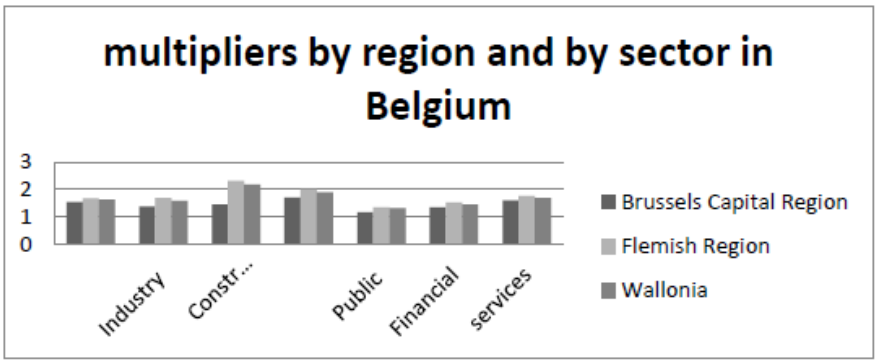
In this equation A represents the matrix of technical coefficients, X denotes the vector of regional production (output), F is the vector of final demand and exports, and I represent the matrix of unity. The term $(I-A)^{-1}$ is referred to as the Leontief inverse (Jensen et al., 1979). All matrixes required for the multiplier calculations were available, so we changed the final demand as a way of simulating an investment impulse. Finally the multiplier was found by dividing the effect of the impulse by the initial impulse.

Results and Discussion

Using the methodology described in the previous paragraph we calculated the multipliers for seven broad key sectors in the regions of the EMU countries. This results in a total of 448 multipliers. Due to the limited length of this article we are not able to discuss all of these multipliers in detail. However, we will provide an example region and stress the main trends that are visible in our results. We choose to show the results for Belgium as an example since they give a reasonable idea of the more general results.

The figure (Figure 1) illustrates the multiplier values for the seven sectors and three regions in Belgium.

Figure 1. Regional and sectorial multiplier values Belgium



Source: Multipliers calculated based on data from European Commission (2009) and European Commission (2011)

The figure *(Figure 1)* shows that the construction multiplier has the highest value for the Flemish and the Walloon region. The highest multiplier in the Brussels Capital Region can be found in the Wholesale sector. The lowest multipliers are encountered in the Public sector for all three Belgian regions. We expected high multipliers for the agricultural, industry, construction and the wholesale sector. This is correct for the Construction and Wholesale sector. The multipliers for the agricultural and the industry sector are still considerable, but not as high as for the other two sectors. We expected low multiplier values for the public and the financial sector, this is reflected in the graph.

To determine how the multiplier values for the different sectors are related in a more general sense we compare the average multipliers for the different sectors. The table (Table 1) demonstrates the average multipliers for the seven sectors.

Table 1. Average multipliers for each sector

Sector	Average multiplier
Construction	1.897
Agriculture	1.660
Industry	1.654
Wholesale	1.652
Services	1.498
Financial	1.438
Public	1.406

Source: Multipliers calculated based on data from European Commission (2009) and European Commission (2011)

The sectors in the table (Table 1) are sorted from the highest to the lowest average multiplier value. The construction sector exhibits the highest average multiplier. This is in accordance with our expectations. The Agricultural, Industry, and Wholesale multipliers are of the same order of magnitude. These multipliers are quite large, but notably lower than the construction multiplier. The lower multipliers are found in the services, financial, and public sector. All multipliers are larger than one, indicating that a one euro investment in all sectors will always result in benefits larger than one euro. Investing in all sectors is profitable, but the highest returns are found in the construction sector.

The first figure (Figure 1) presented us with an insight in the differences between the regions in one country. The first table (Table 1) showed the relationship between the multipliers encountered for the different sectors. Comparing the individual member states will enhance our insight in the differences between the countries. The next tables (Table 2) and (Table 3) demonstrate the average multiplier value for each sector in each country.

Table 2. Average multipliers by country and by sector

Country Sector	Austria	Belgium	Estonia	Finland	France	Germany	Greece
Agriculture	1.613	1.606	1.889	1.691	1.767	1.624	1.513
Industry	1.535	1.545	1.637	1.680	1.769	1.649	1.386
Construction	1.650	1.984	2.138	1.813	1.885	1.776	1.632
Wholesale	1.545	1.861	2.002	1.547	1.667	1.593	1.441
Public	1.427	1.275	1.670	1.493	1.415	1.361	1.452
Financial	1.767	1.435	1.372	1.478	1.370	1.488	1.434
Services	1.466	1.682	1.658	1.442	1.517	1.430	1.333

Source: Multipliers calculated based on data from European Commission (2009) and European Commission (2011)

Table 3. Average multipliers by country and by sectors

Country Sector	Ireland	Italy	Netherlands	Portugal	Slovakia	Slovenia	Spain
Agriculture	1.869	1.684	1.597	1.720	1.561	1.669	1.691
Industry	1.593	1.838	1.533	1.534	1.786	1.635	1.717
Construction	2.045	1.949	2.069	1.958	2.050	2.223	2.009
Wholesale	1.449	1.808	1.617	1.649	1.921	1.814	1.597
Public	1.517	1.385	1.523	1.212	1.567	1.596	1.315
Financial	1.406	1.269	1.435	1.365	1.456	1.344	1.422
Services	1.372	1.533	1.607	1.506	1.639	1.735	1.487

Source: Multipliers calculated based on data from European Commission (2009) and European Commission (2011)

The highest average multiplier value we come across applies to the construction sector in Slovenia. This multiplier value is larger than two, indicating that an investment in the construction sector will on average result in more than a doubling of the initial investment. The lowest average multiplier value emerges in the public sector in Portugal. Still this multiplier is larger than one. Therefore an investment in this sector will result in a higher return than

the initial investment. For all countries except Austria the average multiplier value is highest for the construction sector. The highest average multiplier value in Austria is realized in the financial sector. The lowest average multiplier in the different member states shows more variation. In Austria, Belgium, Germany, Portugal, and Spain the lowest multiplier values are exhibited by the public sector. The Financial sector displays the lowest multiplier values for Estonia, France, Italy, The Netherlands, Slovakia, and Slovenia. Finland, Greece, and Ireland realized the lowest multiplier values in the services sector. The 50 highest multipliers in the total database are shown in the next table (Table 4).

Table 4. The fifty highest multipliers

Ranking	Sector, region, country	Multiplier value
1	Construction, Flemish region, Belgium	2.32
2	Construction, Vzodna Slovenija, Slovenia	2.28
3	Construction, Noroeste, Spain	2.21
4	Construction, Continente, Portugal	2.21
5	Construction, Stredne Slovensko, Slovakia	2.20
6	Construction, Zapadne Slovensko, Slovakia	2.20
7	Construction, Wallonia, Belgium	2.18
8	Construction, Este, Spain	2.17
9	Construction, Zahodna Slovenija, Slovenia	2.16
10	Construction, NorthEast, Italy	2.16
11	Construction, Vychodne Slovensko, Slovakia	2.15
12	Construction, Centro, Spain	2.15
13	Construction, Oost-Nederland, the Netherlands	2.14
14	Construction, Estonia	2.14
15	Construction, Zuid-Nederland, the Netherlands	2.13
16	Construction, Noord-Nederland, the Netherlands	2.12
17	Construction, Nord-Ovest, Italy	2.11
18	Construction, Noreste, Spain	2.10
19	Industry, Nord-Est, Italy	2.08
20	Construction, Border Midland and Western, Ireland	2.05
21	Construction, Southern and Eastern, Ireland	2.04
22	Wholesale, Vychodne Slovensko, Slovakia	2.01
23	Wholesale, Estonia	2.00
24	Wholesale, Zapadne Slovensko, Slovakia	2.00
25	Wholesale, Stredne Slovensko, Slovakia	2.00
26	Industry, Nord-Ovest, Italy	2.00
27	Wholesale, Flemish region, Belgium	1.99
28	Construction, Centre-est, France	1.99
29	Construction, Centro, Italy	1.98

Ranking	Sector, region, country	Multiplier value
30	Agriculture, Border Midland and Western, Ireland	1.97
31	Construction, Ouest, France	1.97
32	Construction, Bassin Parisien, France	1.97
33	Construction, Manner Suomi, Finland	1.95
34	Construction, Nord-pas-de-Calais, France	1.95
35	Construction, Bayern, Germany	1.95
36	Construction, Est, France	1.94
37	Agriculture, Centre-Est, France	1.94
38	Wholesale, North-East, Italy	1.94
39	Construction, Rheinland-Pfalz, Germany	1.94
40	Construction, Nordrhein-Westfalen, Germany	1.93
41	Agriculture, Ouest, France	1.92
42	Construction, Sur, Spain	1.92
43	Agriculture, Bassin Parisien, France	1.92
44	Construction, Saarland, Germany	1.92
45	Agricuture, Noroeste, Spain	1.92
46	Industry, Stredne Slovensko, Slovakia	1.91
47	Industry, Zapadne Slovensko, Slovakia	1.91
48	Industry, Vychodne Slovensko, Slovakia	1.91
49	Construction, Baden Wurtemmberg, Germany	1.91
50	Industry, Noroeste, Spain	1.90

Source: Multipliers calculated based on data from European Commission (2009) and European Commission (2011)

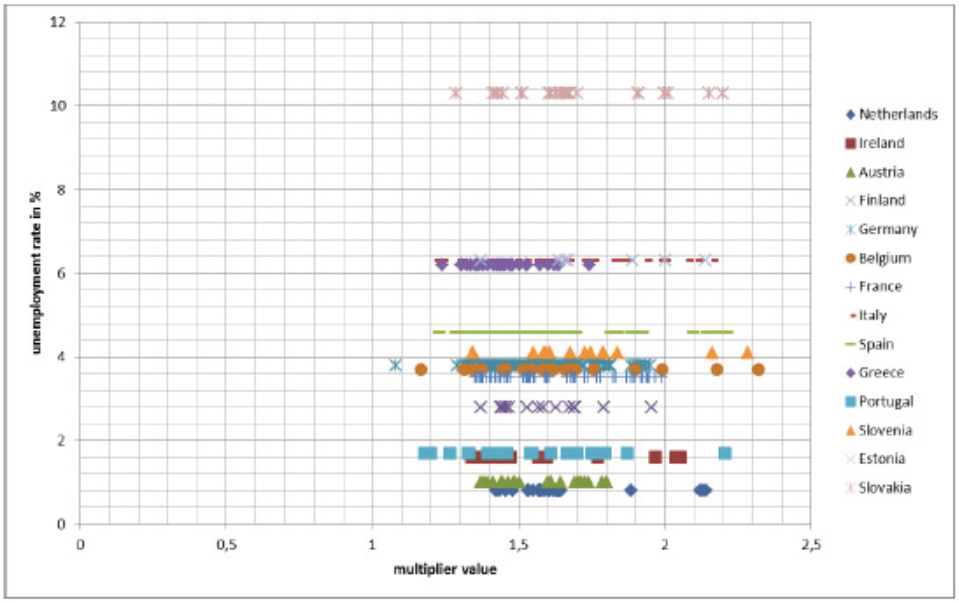
The first eighteen highest multipliers are all formed in the construction sector in different countries and different regions. The highest multiplier for the industry sector is the multiplier ranking nineteenth place. The first multiplier for the wholesale sector takes up the 22nd place. For the agriculture sector the highest multiplier can be found on the 30th place. There are no multipliers concerning the services, financial, or public sector within the fifty highest multipliers.

Our results give a clear indication as to where the European Union should invest. We like to point out a few issues that should be threated carefully. Sometimes no data were available for the NUTS 1 regions in a country. In this case we use information on the NUTS 2 regions. This inevitably creates a slight bias in scale. On one occasion we had to use the 2001 data in calculating the location quotients, for the data on the year 2000 was absent. Finally, in following up our policy recommendations a careful analysis of the actual situation should be performed.

Policy Recommendations

The multiplier values derived in the previous paragraph can be used to form policy recommendations. These recommendations might provide the answer to the question in which sectors and regions the European Union should invest to diminish the economic gap between its member's states. If one assumes that a high multiplier effect indicates favourable possibilities for stimulating the economy, then one could look at which regions and sectors have high multiplier values. However, we should keep in mind that other factors are likely to play a role in determining the effect of an investment as well. One of these factors might be the unemployment rate in a region. One could doubt the wisdom of stimulating the economy in a region where a labour shortage will be a limiting factor to economic growth. To take the employment rates into account we plotted the unemployment rate against the multiplier values that resulted from our work. The next figure (Figure 2) represents this plot.

Figure 2. Scatterplot unemployment rate and multiplier value



Source: Figure based on data from European Commission (2009) and European Commission (2011)

If one assumes that high multiplier values and high unemployment rates are important in the investment decision, then one should invest in the countries in the upper right quadrant. The countries that can be found within this quadrant are Slovakia, Estonia, Italy, Greece, and Spain. The highest multipliers for these regions can be found in the construction sector. The European Union included Estonia, Greece, Portugal, Slovakia, and Slovenia in the Cohesion Fund for the 2007-2013 period (European Commission, 2008). Therefore we make the following recommendations. If we assume that multiplier values and unemployment rates are important, then the European Union should invest most in Slovakia, next in Estonia, Italy, Greece, and Spain. These are the investments

that will most likely result in the highest returns. The investments in Estonia, Slovakia, and Greece fall under the Cohesion Funds. The sector with the highest returns is the construction sector. The fact that the European Union often invests in infrastructure aligns with this finding.

Conclusions and discussion

There are ample opportunities for the European Union to advantageously invest in member states. Especially investments in the construction sector are expected to result in high returns. This is indicated by the high multiplier values in this sector. Even the lowest multiplier in this sector is still larger than 1.5. Investments in the agriculture, industry, and wholesale sector are likewise expected to result in high returns. The service, financial, and public sector demonstrate considerably lower multiplier values, although their value on average still exceeds the value of one.

The multiplier value is not the only factor of importance when considering in which region to invest, but it is a good indicator. Another factor that might be relevant is the unemployment rate in a region. If there is a limiting factor to economic growth in a region, such as labour shortage, directing more money towards that region might not result in the desired effect. Therefore we plotted the unemployment rate against the multiplier values that were determined in this paper. The countries that exhibited both a high multiplier and a high unemployment rate seem the best investment option. The countries demonstrating these characteristics are Slovakia, Estonia, Italy, Greece, and Spain. Estonia, Slovakia, and Greece are included in the Cohesion Fund of the European Union. Therefore investing in these countries is possibly the best choice for diminishing the economic gap between the member states.

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Review Article

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TOURISM AS AN APPROACH TO SUSTAINABLE RURAL DEVELOPMENT: CASE OF SOUTHERN RUSSIA

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Summary

The paper's goal is to presents contemporary approaches to understanding of sustainable development, role of tourism in assurance of sustainable rural development, and analyses the practical issues of efficient utilization of tourist and recreational potential on the example of the Caucasus Mineral Waters resort area. Methods of benchmarking analysis, SWOT-analysis and program prognosis are implemented. The major results of the current research are authors' interpretation of regional sustainable development by means of utilization of tourist and recreational potential; conclusion that assurance of sustainable economic development promotes investment attractiveness, development of its tourist and recreational infrastructure, sanatorium, resort, engineering, technical, transport and touristic spheres. One of the most important issues of the current topic is effective preservation and rational usage of existing environmental, climatic, health and recreational resort resources of resort and rural territories.

Key words: *sustainable development, rural tourism, region.*

JEL: *Q01, R00, L83*

Introduction

The relevance of assurance of sustainable economic in a particular region is conditioned by the necessity to provide certain conditions for sustainable development and raising of living standards by means of effective utilization of the existing sanatorium, resort, tourist and recreational potential.

The given research is conducted on the examples of Stavropol Region and particularly Caucasus Mineral Waters, one of the major Russian areas on existence of tourist, recreational, sanatorium, resort and balneological resources. Stavropol Region is the intensively growing tourist and recreational region. It hosts the major part of Caucasus Mineral Waters area, the specially protected environmental and resort territory. This is a unique place worldwide

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with over 130 mineral springs of 30 types narrowly spaced on a relatively small area. As a comparison, Karlovy Vary has around 60 springs, Baden-Baden only 20.

The current research consists of three parts. First: when analysing various approached to assurance of sustainable development of a particular region by means of existing tourist and recreational potential, we faced the necessity to divide and substantiate such definitions as "sustainable regional development" and "sustainable development" in general. Due to the fact that those definitions are often implemented in various spheres of science and their emphasizes vary from each other, we conducted the comparative analysis of the major approaches to understanding of sustainable development in a regional aspect. Such an analysis let us to develop the authors' interpretation of sustainable regional development by means of utilization of the regional tourist and recreational potential.

Secondly, the economic characteristic of the Caucasus Mineral Waters resort area was provided in the context of available tourist and recreational resources and effectiveness of their utilization. The benchmarking method was implemented in order to compare the current economic indicators of Caucasus Mineral Waters area with one of the largest and famous recreational centres of Europe, Karlovy Vary.

The third part of the given research was discovery of strengths and weaknesses of tourist and recreational complex of Caucasus Mineral Waters (based on the results of benchmarking analysis), problem domains and the most perspective spheres to increase efficiency and to impact positively into assurance of sustainable development of rural territories. We implemented SWOT-analysis for the purposes of such research. The derived results were compared to the key points of the "Strategy of social and economic development of Stavropol Region – 2025". That let us to develop the prognosis of potential effects of tourist and recreational complex for the regional economics in general and particularly for rural territories of Stavropol Region and Caucasus Mineral Waters.

Material and Methods

For the purposes of the current research, we implemented official data of the Federal Service of State Statistics of the Russian Federation, Federal Agency of Tourism of the Russian Federation, Ministry of Economic Development of the Russian Federation, Ministry of Resorts and Tourism of Stavropol Region, Territorial office of the Federal Service of State Statistics in Stavropol Region.

Method of benchmarking analysis was implemented in order to compare the current conditions of economic development, as well as tourist and recreational potentials of the Caucasus Mineral Waters resort area and Karlovy Vary. The region of Karlovy Vary was selected for benchmarking as the Europe's largest tourist and recreational complex with close to the Caucasus Mineral Waters area environmental, climatic, health, sanatorium and resort conditions. The comparison was held on 14 criteria, which let us to correlate diversely two tourist and recreational complexes on the major indicators. For the purpose of assessment of the main effects of tourist and recreational complex for rural development in both regions, we introduced the certain criteria into the benchmarking pool (share of

rural people in total population, share of agriculture in gross regional product, share of rural tourism in regional tourist flow, number of rural households involved into domestic tourist services).

In order to aggregate the discovered competitive advantages of the touristic and recreational complex of the Caucasus Mineral Waters area, spheres for enhancement, potential threats of internal and external environments, as well as perspective directions to increase sustainability and economic effectiveness of tourism, we implemented the method of SWOT-analysis.

Determination of potential effects of tourist and recreational complex of the Caucasus Mineral Waters resort area on sustainability of rural development in the region, we implemented methods of program prognosis, medium term and long-term prognosis.

Results and Discussion

Growing attention is paid by modern economists to research and assessment of economic sustainability. Theory of competition, summarized by A. Smith, was developed by D. Ricardo, M. Porter, D. Robinson, F. Edgeworth, E. Chamberlin, P. Heyne, and F. Knight. Such Western economists as B. Venturi, P. Gerstner, F. Leitner, A. Wall, K. Druri, and S. Posani impacted a lot into elaboration of theoretical and practical issues of economic sustainability (Gannon, 1994). The word-combination "sustainable development" was introduced by G.H. Brundtland in 1987 for the first time. She defined sustainable development as an ability to satisfy requirements of current generation with safety for future generation to meet their demands (Sillignakis, 2001). In Russia the issues of sustainable rural development are investigated in the works of I. Balabanov, V. Kovalev, E. Stoyanova, A. Sheremet, A. Bakanov, M. Kreynina. Issues of implementation of agrarian reforms, conditions of assurance of sustainability in agriculture and rural territories are researched by A. Altukhov, G. Bespakhotny, I. Burobkin, K. Pankov, A. Petrikov, E. Serova, V. Uzun, I. Ushachev, and others (Chernova, Erokhin, 2010a).

The range of definitions, which describe the essence of sustainable development, are interpreted broadly, but all definitions agree that sustainable development considers a correspondence of current and future life necessities. However, the issues of sustainable rural development in relation to tourism are not researched widely.

For the purpose of our research, it is necessary to concretize the essence of sustainability in relation to the specifics of rural development by means of utilization of tourist and recreational potential. In such a view, the problem of sustainability becomes more difficult and complex, as it unites two spheres: agricultural production and tourist activity. The main complexity of agricultural production is related to entwinement of economic, natural and climatic factors. The sustainability of tourist and recreational complex is influenced by aggregation of environmental, infrastructural, cultural and social aspects. Besides, it is necessary to consider the regional specifics of particular tourist and recreational complexes.

Region can be assumed as on open system, divided nominally in three interacted constituents: environmental part (primary resources and environment), economic (production system and infrastructure) and social (society). The given constituents feature the technological chain, aimed at assurance of high life living standards in a region (Lane, 2005). Such researches as G. Fetisov, O. Pchelintsev and A. Granberg emphasize those three components as a basis of regional tourist and recreational complexes (Erokhin, Ivolga, 2009).

In view of the aforesaid, we conclude, that sustainable rural development in particular region by means of utilization of its tourist and recreational potential is the combination of legal, economic, social and production relations and recreational, climatic and environmental resources, because of which tourist and recreational complex reverts to stability, but hereby increases quality of life in rural areas, competitiveness of rural households as subjects of tourist activity and regional tourist market, as well as balances interests of state, business, society and environment.

In the modern conditions, creation of necessary economic, social, politic, legal and other conditions for development of tourist and recreational activity is one of the factors, which ensure sustainable development of rural territories (Wiggins, Proctor, 2001). The effective sustainable tourist and recreational complex should involve as much rural population as possible in order to increase production of agricultural commodities and food, decrease social tensions in rural territories, activate mechanisms of free competition of agricultural producers and other subjects of tourist market, increase the overall economic sustainability of the region (Briedenhann, Wickens, 2004).

In order to apply that approach to particular tourist and recreational complex and assess its influences on rural development we selected the Caucasus Mineral Waters as a model region. Currently tourism and recreation provide the significant part of gross regional product of Stavropol Region in general and Caucasus Mineral Waters in particular. As of 2011, share of tourist and recreational complex in regional product of Stavropol Region was 3.2%. In comparison, the analogous indicator globally is 3.6%, in Europe – 6-9%, in Russia – 2.5%.

According to the Ministry of Resorts and Tourism of Stavropol Region, the annual growth of number of incoming tourists is over 6%. Herewith, 11% of that tourist flow is foreign citizens, which testifies the high tourist potential of the region. In comparison with 1991, the tourist flow of Stavropol Region increased twofold (Table 1).

Table 1. Dynamics of tourist and recreational complex of Stavropol Region

Indicator	2010	2011	2012	2012 to 2010 (%)	2013 (prognosis)
Overall income from incoming tourists, € mln.	343.2	367.5	407.6	118.8	450.0
Incoming tourists, people	852 680	880 730	960 120	112.6	980 000
Share of foreign tourists, in %	9.2	10.6	11.2	121.7	11.6
Accommodation facilities, in 000 places	31.1	31.8	33.5	107.7	34.0

Source: Government of Stavropol Region, 2011.

The overall income of Stavropol Region from incoming tourists in 2010 was €343.2 mln, in 2011 – €367.5 mln, in 2012 – €407.6 mln. According to the Ministry of Resorts and Tourism of Stavropol Region, income from incoming tourists will exceed €450.0 mln in 2013. Over 960 thousand people visited Stavropol Region in 2012, which is 12.6% more than in 2010. The Ministry of Resorts and Tourism of Stavropol Region prognoses 980.000 incoming tourist in 2013. Share of foreign citizens coming to Stavropol Region and Caucasus Mineral Waters grows with every year. Forecast is 11.6% of total tourist flow in 2013.

There are over 40 tourist operators and about 200 travel agencies working in Stavropol Region, as well as 302 collective accommodation facilities, including 132 sanatoriums and resort houses. The total accommodation capacity was 33.5 thousand places in 2012. The capacity increases every year with reconstruction and construction of new sanatoriums, hotels and resort houses. There were 14 new accommodation facilities introduced in 2012 (1.7 thousand places), 20 in 2011 (0.7 thousand places). The total volume of investments into sanatorium, resort and tourist complex of Stavropol Region and Caucasus Mineral Waters during 2010-2012 exceeded €212 mln.

Caucasus Mineral Waters resort area includes four towns: Kislovodsk, Essentuki, Zheleznovodsk and Pyatigorsk. Those small towns are equivalent in their sizes to such European resort centres as Karlovy Vary and Baden-Baden. All the towns are located not far from each other and compose a single health resort district.

Kislovodsk is the biggest and the most manifold resort town of the Caucasus Mineral Waters resort area. It focuses on health improvement, not on treatment itself, because of its perfect mountainous climate. There are good facilities for sport leisure, especially because of the proximity of Caucasus Mountains. Resort is popular among all age-group population, including young people.

Pyatigorsk is the centre of active, business and educational tourism. It is also popular among people interested in culture and sports. Treatment component does not dominate, but accompanies various entertainments.

Essentuki is the health and recovery resort. It is a centre of family recreation. Of all mineral springs of Essentuki, about twenty are of medical value. Sodium carbonic hydro carbonate-chloride (i.e. salt-alkaline) water, which has made the health resort popular, is the most famous and therapeutically valuable. Alongside with mineral waters, the medical establishments of Essentuki use sulphide silt muds of Tambukan Lake. The health resort specializes in treatment of patients with diseases of digestion organs as well as those with metabolic disorder.

Zheleznovodsk is the resort town of Caucasus Mineral Waters area with high-developed health treatment infrastructure. This is the only place in Russia and Europe with hot calcic waters. The town has over 20 mineral springs, which mineral water is used for drinking, bathing, inhalations and other water procedures. Another treatment resource of Zheleznovodsk is mild mountainous and forest climate, similar to Alps. Zheleznovodsk's woodland park is the only natural park in Caucasus Mineral Waters area with terrainkurs.

In order to compare the current conditions of economic development, as well as tourist and recreational potentials of the Caucasus Mineral Waters resort area with major tourist centres of the world we implemented the benchmarking analysis. We selected the region of Karlovy Vary as the Europe's largest tourist and recreational complex with close to the Caucasus Mineral Waters area environmental, climatic, health, sanatorium and resort conditions. The comparison was held on 14 criteria, which let us to correlate diversely two tourist and recreational complexes on the major indicators (Table 2).

Table 2. Benchmarking analysis of Caucasus Mineral Waters resort area and Karlovy Vary

№	Criteria	Caucasus Mineral Waters	Karlovy Vary
1	Mineral springs	130	12
2	Diseases treated	12	3
4	Hotels and sanatoriums	134	90
5	Incoming tourists per year	970 000	2 100 000
6	Structure of tourist flow (social insurance / independent / holiday-makers, %	71 / 10 / 19	0 / 56 / 44
7	Average cost of treatment, € / day	65	350
8	Annual gross income from holiday-makers, in € mln	66.2	275.0
9	Annual gross income from subsidiary tourist business and regional tourist trade, € mln	48.5	210.0
10	Tourists' rating according to reviews and comments (excellent / good / satisfactory / bad / very bad), %	7 / 29 / 31 / 26 / 7	77 / 19 / 2 / 1 / 1
11	Share of rural people in total population, %	42	31
12	Share of agriculture in gross regional product, %	14.0	2.4
13	Share of rural tourism in regional tourist flow, %	0.3	5.2
14	Share of rural households involved into domestic tourist services	4.8	13.7

Source: authors' development according to (Gorenak, Bobek, 2010), (McGehee, Andereck, 2004), (Chernova, Erokhin, 2010b).

Our analysis shows that Caucasus Mineral Waters area has favourable conditions for development of its tourist and recreational sphere. Among the apparent competitive advantages of the region, we emphasize:

1. Favourable climatic and environmental conditions, diversity of picturesque landscapes;
2. Treatment resources (variety of mineral water springs of various types, therapeutic muds);
3. Essential historical and cultural potential;
4. Transport accessibility (relative proximity to the most densely populated regions of Russia, development of air, railroad and highway connections);
5. Existence of advanced treatment and recovery technologies, balneotherapeutic research centres, specialized educational establishments and a number of specialists of high qualification.

However, having the essential competitive advantages, touristic and recreational potential in

the sphere of health tourism, Stavropol Region in general and Caucasus Mineral Waters resort area in particular attract lower number of tourists, comparing to resort and tourist centres of other countries. The benchmarking analysis demonstrated that Caucasus Mineral Waters, having more mineral springs and accommodation facilities, attract threefold lower tourist flow, than Karlovy Vary.

The economic effect ratio is even worse: annual gross income from incoming tourists in Caucasus Mineral Waters is fourfold lower than in Karlovy Vary. In addition, the rating of Caucasus Mineral Waters among tourists and travellers is incomparably worse than the one of Karlovy Vary: only 36% of respondents in Caucasus Mineral Waters consider services and overall level of resort as excellent and good (96% in Karlovy Vary). Infrastructural and qualitative backwardness of Russian resort is one of the most serious problems and limiting factors of its sustainable development in future.

Concerning rural aspects, the positions of Caucasus Mineral Waters and Karlovy Vary are different as well. Share of agriculture in gross regional product is higher in Caucasus Mineral Waters, while rural tourism plays more important role in Karlovy Vary. Share of rural households involved into domestic tourist services is bigger in Karlovy Vary, which confirms the higher level of infrastructural development and economic involvement of rural areas into tourism.

Based on benchmarking analysis, we aggregated the major competitive advantages of Caucasus Mineral Waters resort area on the global tourist and recreational market, as well as weaknesses, which may grow into serious threats to sustainable development of tourist and recreational complex. Results of conducted SWOT analysis are presented in Table 3.

As we introduced four criteria into the benchmarking analysis in order to assess current situation and interrelations between tourist and recreational complex and development of rural territories, we emphasized the relevant strengths, weaknesses, opportunities and treats in the SWOT-analysis as well.

Table 3. SWOT analysis of tourist and recreational potential of Caucasus Mineral Waters

Strengths	Weaknesses
Location in climatic zone with minor seasonal fluctuations and mild climate	Treatment component and quality of medical services are developed slowly
Developed transport system, including two airports, road and railroad network	Difficulty of personal selection of necessary treatment procedures of required volume and costs
Agricultural specialization of the region gives an opportunity to provide tourists with qualitative agricultural commodities and food	Underdevelopment of infrastructure of accommodation and dining, lack of accommodation facilities of medium level
Annual growth of investments into tourism in the region	Absence of regular, rich and interesting cultural program

Opportunities	Threats
Utilization of natural advantages: language and cultural identities, educational opportunities, treatment and recovery potential	Infrastructural backwardness of regional tourist and recreational complex from its competitors in Russia and abroad
Federal program on establishment of high-effective cluster of tourist and recreational type	Active marketing and advertising campaigns of neighbour countries (Turkey, Greece, Czech Republic, Egypt)
Big sport events of global importance in the South of Russia (Olympic Games, World Football Cup)	Tendency of reduction of tourists' residence time (down to 7-14 years in average)
Existence of tourist market with high capacity of 5-6 mln people located within 4-5 hours proximity to the region	Drain and decrease of share of skilled labour, ageing

Source: authors' development.

Conducted SWOT-analysis demonstrated that tourist and recreational complex of Caucasus Mineral Waters in many ways loses its positions to its foreign competitors and some of the Russia's regions. That decreases the economic effect of tourist and recreational complex for regional economics and creates serious treats for its sustainable development in future. The global market of tourist services is being globalized, many artificial barriers are removed, and new rules are established after accession to World Trade Organization. Many regional tourist and recreational complexes are not ready for such radical changes. Rural areas are the most unprotected, since rural households are not deeply involved into domestic tourist services, do not produce commodities with high added value, of high quality and competitiveness, and very much depend on domestic state support and rural state policies. However, the conducted SWOT-analysis let us to define the key success factors, which may ensure the sustainable development of rural areas of Caucasus Mineral Waters by means of utilization of its tourist and recreational potential.

The SWOT-analysis led us to the aggregation of the scientific backgrounds of the Strategy of sustainable rural development of Stavropol Region until 2025 by means of effective and comprehensive utilization of the existing tourist and recreational potential. Obviously, development of tourist and recreational complex is not a thing in itself. That sphere along with agriculture is the backbone for economics of Stavropol Region in general and Caucasus Mineral Waters in particular. Enhancement of economic activity in tourism will influence positively on other sectors of regional economics. Among possible system effects of tourism development for regional economic development and rural territories, we have to emphasize the following:

1. Growth of tourist flow, both from Russian regions and from abroad, that increases trade and transportation, and extends marketing opportunities for rural households.

2. Growth of profitability and turnover of trade with agricultural commodities and food by rural households that affects the regional budget positively.
3. Development of tourist industry, that increases number of workplaces in rural areas and creates favourable conditions for enhancement of quality of agricultural commodities, food and tourist services provided by rural households.
4. Improvement of image of resorts and tourist locations of Caucasus Mineral Waters, including its rural areas, increase of living standards in rural territories.
5. New opportunities for development of small and medium entrepreneurship in rural areas.
6. Positive influences of tourist market on real estate market and construction in rural territories.
7. Development of sustainable financial background for preservation of unique monuments of nature, history and culture, located in Stavropol Region and area of Caucasus Mineral Waters.

Assurance of sustainable rural development by means of utilization of tourist and recreational potential is expected through the following kinds of tourism:

1. Health and treatment tourism (balneological, climatic, ecological).
2. Sport tourism (Olympic Games, hiking, cycling, mountainous, equine, paragliding).
3. Excursion tourism (cultural, national, ethnographic, photographic).
4. Rural tourism (educational and recreational agri-tourism, gastronomy tourism).

Implementation of such a multisided and complex project involves a range of tasks to be completed. Among the top-priority tasks of the given research we emphasized the following: development of theoretic and methodical issues of sustainable rural development by means of utilization of the existing tourist and recreational potential; assessment of current and long-term sustainability of economic development of rural territories in Stavropol Region; development of mechanisms of implementation of the Strategy of sustainable rural development through particular kinds of tourism and action plan in short, medium and long-term perspectives; elaboration of social, economic, legal, administrative and managerial measures, which drive touristic and recreational complex of Caucasus Mineral Waters on the brand new qualitative level and provide complex sustainable solution of economic, social and environmental tasks along with preservation of natural, resource, historical and cultural potential of the region.

Government of Stavropol Region accepted the Strategy of social and economic development of Stavropol Region until 2025 in 2009. The Strategy paid the special attention to assurance of sustainable regional economic development. In accordance with the findings of our research, we compared the key points of the Strategy with obtained results. That let us to develop the prognosis of potential effects of tourist and recreational complex for the regional economics in general and particularly for rural territories of Stavropol Region and Caucasus Mineral Waters (Table 4).

Table 4. Potential effectiveness of implementation of Development Strategy of tourist and recreational complex of Caucasus Mineral Waters

Indicators	2010	2015	2020	2020 to 2010 (in %)
Incoming tourists, thousand people	1172	1980	2420	206.5
incl. foreign citizens	30	80	120	400.0
Total annual expenses of tourists, € mln	710	1825	3000	422.5
Incomes of regional budget from tourist complex, € mln	58.5	172.5	295.0	504.3
Number of new workplaces	138000	198000	242000	175.4
incl. sphere of tourism and recreation	46000	66000	81000	176.1

Source: Government of Stavropol Region, 2011.

In order to achieve the target indicators set by the Strategy in the sphere of rural tourism it is necessary to diversify touristic products and promote their advancement to foreign countries and to other regions of Russia; to accelerate development of tourist and recreational infrastructure of Caucasus Mineral Waters and its modernization to make tourist's residence in the region more comfortable, interesting and safe. It is very important to solve the existing environmental problems of Caucasus Mineral Waters as well.

Major results of the given research should be the development of the Strategy of sustainable rural development of Stavropol Region until 2025 and a set of the following measures:

1. Diversification of economics of Stavropol Region by means of complex development of tourist and recreational potential.
2. Provision of sustainable rural development by means of enhancement of economic activity of rural households and expansion of their incomes.
3. Improvement of quality of tourist and recreational services, including their diversification, accessibility, infrastructure, support of innovations.
4. Rebranding of tourist and recreational complex of Caucasus Mineral Waters as a provider of diversified tourist product of high quality, including rural tourism.

There are several cluster projects implemented in the region of Caucasus Mineral Waters aimed at enhancement of investment climate, attraction of domestic and foreign investors and development of modern touristic objects in rural areas (Chernova, Erokhin, 2010b). Various events organized in Caucasus Mineral Waters promote its image as a rural touristic territory, attractive for foreign incomers.

Conclusions

The research of theoretic and practical approaches to insurance of sustainable rural development through utilization of regional touristic and recreational potential provided us with the following results.

Essence of sustainable rural development by means of rural tourism is complex, as it unites two spheres: agricultural production and tourist activity. The complexity is caused by the entwinement of economic, social, cultural, historical and environmental factors, as well as the regional specifics of particular tourist and recreational complexes.

Sustainable rural development in particular region by means of utilization of its tourist and recreational potential is the combination of legal, economic, social and production relations and recreational, climatic and environmental resources, because of which tourist and recreational complex reverts to stability, but hereby increases quality of life in rural areas, competitiveness of rural households as subjects of tourist activity and regional tourist market, as well as balances interests of state, business, society and environment.

Case analysis of the Caucasus Mineral Waters resort area shows that the region has favourable conditions for development of its tourist and recreational potential in rural sphere, including favourable environmental conditions, treatment resources, essential historical and cultural potential, and easy transport accessibility.

However, the benchmarking analysis shows that despite of such essential competitive advantages, Caucasus Mineral Waters resort area attract lower number of tourists, comparing to resort and tourist centres of other countries, for example Karlovy Vary. That decreases the economic effect of tourism for rural areas and creates serious treats for their sustainable development. Rural households of Caucasus Mineral Waters are not deeply involved into domestic tourist services, do not produce commodities with high added value, of high quality and competitiveness, and very much depend on domestic state support and rural state policies.

SWOT-analysis let us to define the key factors, which may ensure sustainable development of rural areas of Caucasus Mineral Waters by means of utilization of its tourist and recreational potential, which are health and treatment tourism in rural areas, excursion and ethnographical tourism, educational and recreational agri-tourism, gastronomy tourism. Development of those spheres of tourist and recreational complex of Caucasus Mineral Waters, supported by the Strategy of social and economic development of Stavropol Region until 2025, should help to: diversify economics of Stavropol Region by means of complex development of tourist and recreational potential; ensure sustainable rural development by means of enhancement of economic activity of rural households and expansion of their incomes; improve quality of tourist and recreational services, including their diversification, accessibility, infrastructure, support of innovations; rebrand tourist and recreational complex of Caucasus Mineral Waters as a provider of diversified tourist product of high quality, including rural tourism.

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Review Article

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THE EUROPEAN REGULATORY FRAMEWORK FOR FARM ADVISORY SERVICES

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Summary

In the European Union farm advisory systems' preliminary purpose is to help farmers to better understand and meet the requirements of the EU rules on environmental aspects of agriculture. A great shift towards these goals and the importance of the farm advisory systems took place in 2003, when the reform of the Common Agricultural Policy introduced the cross compliance mechanism, which is in force as of 2005, and links direct payments directly to farmers' compliance with basic standards related to the environment, food safety, animal and plant health and welfare, and in general, the requirement to maintain land in good agricultural and environmental conditions.

The purpose of this paper is to define the regulatory framework of farm advisory system and services in the EU and raise the question of the lack of interest and appropriate mechanisms to broaden the activities of Serbian Agricultural Extension Services towards control of cross-compliance requirements and good agricultural practices.

Key words: *Farm Advisory System, Extension Services, Farm Advisory Services, cross-compliance, agri-environmental measures*

JEL: *Q15, K32*

Introduction

In a modern economy, environmental concerns can no longer be disassociated from economic activities and sector specific policies, such as agricultural policy. The Common Agricultural Policy has been constantly evolving in order to encompass the changing needs of the agricultural producers, the economy and European society as a whole, aiming also to ensure the long term protection of the EU's natural resources. EU's agricultural policy has recognized the complex interactions between food production and natural resources, and many regulatory instruments

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have been developed to guide European farmers towards a sustainable agriculture. The farm advisory system is just one component of a large and complex matrix of EU agricultural policy to address the sustainable management of natural resources. Rising interest in agricultural advisory services is emphasizing the continued need for agricultural advisory services as a means of promoting agricultural productivity, increasing food security, improving rural livelihoods, and promoting agriculture as an engine of economic growth (Birner et al., 2006).

Since the Mac Sharry reform in 1992 an increasing focus has been put on the environmental dimension, and this is confirmed in the 'Agenda 2000' reform which was built on two pillars. The first is linked to market support and farmer income support, and the second relates to rural development. In 2003 a new reform of the first pillar has reinforced the environmental concerns, urging farmers to respect environmental, food safety and animal welfare legislation, as well as good agricultural and environmental conditions. Cross-compliance, a link between the payments to agricultural producers and their adherence to compulsory standard of production in line with statutory requirements and good agricultural and environmental practices had been established.

This GAP reform urged national authorities of the Member States to set up a Farm Advisory System and to offer farmers advices, as of 2007. Pursuant to article 4 of the Council Regulation No. 73/2009, any farmer receiving direct payments is obliged to respect the statutory management requirements listed in Annex II of this Regulation and the good agricultural and environmental condition, which is referred to in Article 6 of this Regulation and essentially relates to member states' power to define minimum requirements for good agricultural and environmental condition on the basis of the framework established in Annex III of this Regulation. The competent national authority has to provide the list of statutory management requirements and the good agricultural and environmental condition to be respected.

The existing legal framework at the EU level and the impact of reform of the CAP

The Farm Advisory System is a concept used to cover the overall organization within the country. It includes public and/or private operators which deliver advisory services to farmers: all farmers or the priority categories of farmers, e.g. if the available budget is not sufficient for all.[3] From a legal standpoint, the farm advisory system is envisaged as an instrument in Regulation (EC) No. 1782/2003,[4] as well as the Regulation (EC) No. 1698/2005 as a support from the European Agricultural Fund for Rural Development for the setting-up and use of advisory Services. Both Council regulations were complemented by an implementing act, the Commission Regulation (EC) No 1974/2006, which forms the initial legal architecture of this instrument of common agricultural policy.

3 The initial obligation is to give priority to farmers receiving more than 15.000 EUR in direct payments.

4 Article 13 introduced the obligation for the member states to set up a farm advisory system by January 1, 2007.

Article 12 of the Council Regulation (EC) No 73/2009 establishing common rules for direct support schemes for farmers under the common agricultural policy and establishing certain support schemes for farmers, amending Regulations (EC) No 1290/2005, (EC) No 247/2006, (EC) No 378/2007 and Repealing Regulation (EC) No 1782/2003 requires that Member States establish and operate a system of advising farmers on land and farm management. The farm advisory system must cover at least the statutory management requirements and the good agricultural and environmental condition as defined in articles 4 to 6 of this Regulation. The advice is an output of a farm advisory system, which should also be clearly distinguished from the mere provision of information to farmers, as advisory services should assess the specific situation of the farmer and not only present general information. The provision of information on cross-compliance is already obligatory pursuant to Article 4(2) of Regulation 73/2009.

Recently announced Reform of the Common Agricultural Policy[5] has revealed that the cross-compliance list of rules has been simplified to exclude those where there is no clear or controllable obligation for farmers.[6] The list of issues on which member States will have to offer advice to farmers has been enlarged to cover, beyond cross compliance, the green direct payments, the conditions for maintenance of land eligible for direct payments, the Water Framework and Sustainable Use of Pesticides Directives, as well as certain rural development measures. Article 12 of the Commission's Proposal for a Regulation on financing, management and monitoring of the CAP, stipulates that the farm advisory system should cover at least:

a) The statutory management requirements for good agricultural and environmental condition of land;

b) The agricultural practices beneficial for the climate and the environment as proposed in Commissions proposals on rules for direct payments and rural development;[7]

c) The requirements or actions related to climate change mitigation and adaptation, biodiversity, protection of water, animal and plant disease notification and innovation at minimum, as laid down in Annex I to this Proposal for a Regulation;

d) The sustainable development of the economic activity of the small farms as defined by the Member States and at least of the farms participating in the small farmers scheme referred to in the Proposal for a Regulation on support for rural development by the European Agricultural Fund for Rural Development (EFARD);[8]

5 European Commission, CAP Reform – An explanation of the main elements, MEMO/13/937, 25.10.2013.

6 European Commission, Proposal for a Regulation of the European Parliament and of the Council on the financing, management and monitoring of the common agricultural policy, SEC(2011) 1153; SEC(2011) 1154), COM(2011) 628/final/2, 19.10.2011.

7 www.ec.europa.eu/agriculture/cap-post2013/legal-proposals/index_en.htm

8 Article 16 of the Proposal for a Regulation, COM(2011) 627 final/2.

e) The farm advisory system may also cover the sustainable development of the economic activity of holdings which are not small farms, according to national legislation.

The Farm Advisory System already covers many practices that reduce the impact of farming on the climate. For instance, protection of permanent pasture, crop rotation, minimum soil cover, reduced tillage under the minimum land management standard, rules on crop residue management and maintenance of soil organic matter and requirements under the Nitrates Directive relating to the application and storage of manure. However, the Proposal includes within the FAS framework specific action on climate change, including the provision of technology-related advice.[9]

From Commission's Report on the Application of the Farm Advisory System of 2010[10], it is evident that the farm advisory system in the EU will undergo changes, mostly related to the improvement of the system's management; its main instruments such as the provision of advice, delivery of information, extension services; and the description of advisory work. The Commission's Proposal for the Regulation on financing, management and monitoring of the CAP indeed gives Commission powers to adopt implementing delegated acts aiming to render the system fully operational, assisted by a Committee called 'Committee on the Agricultural Funds' within the meaning of Regulation (EU) No. 182/2011.

Purpose and scope of farm advisory services in the EU

The term 'agricultural advisory services' has evolved from the term 'agricultural extension'. Although agricultural advisory services trace back as far as 1800 B.C., formal practices began in late 1800s A.D.: the first modern agricultural advisory service was established in Ireland during the potato famine in 1845. In many developing countries, commodity-oriented technical advice was provided during colonial times to farmers, but national agricultural advisory services were not formally established until the 1950s and 60s. Initially, these services were designed to bring new knowledge and techniques from public research organizations to a broader spectrum of farmers. While the goals of agricultural advisory services are much the same as when they were introduced, their scope have changed and today assume a much more holistic and facilitatory role, and the range of organizations providing advisory services also increased. Nowadays there is a tendency of pluralistic agricultural advisory services, referring to coexistence of a variety of institutional options existing for financing and providing agricultural advisory services (Birner et al. 2006; Lashgarara, Peshbien, 2004).

9 This has been envisaged in Commission's White Paper on climate change: 'Adapting to climate change' (COM(2009) 147); European Commission, DG AGRI Staff Working document accompanying the White Paper: 'Adapting to climate change: the challenge for European agriculture and rural areas' (SEC(2009) 417).

10 European Commission, Report from the Commission to the European Parliament and the Council on the application of the Farm Advisory System as defined in Article 12 and 13 of Council Regulation (Ec) No 73/2009, COM(2010) 665 final, 15. 11. 2010.

Farmers nowadays need a broad spectrum of information and advice, from farm accounting issues to nature conservation. A general agricultural adviser, no matter how much educated and how well trained, can not be a specialist in every field. We may say that he or she is a general practitioner. Such as medical doctors who are general practitioners, the farm advisory service advisor should be able to suggest to farmers to address to specialized services and guide him through sources of relevant information. Therefore, an important question of the organization of the farm advisory system is the coordination: coordinating bodies at the national or regional level should help advisors to build up a network of specialists (Nitsch, Osterburg, 2007*)*.

As above presented, the minimal scope of advisory services must cover at least the statutory management requirements and the good agricultural and environmental condition, including an overall permanent pasture ratio, as defined in articles 4 to 6 of the Regulation (EC) No. 73/2009. This can be briefly explained in the following table.

Table 1. Minimal scope of advisory services

1. Statutory Management Requirements	2. Good Agricultural and Environmental Conditions	3. Permanent Pasture Ratio
Annex III of Regulation (EC) No. 1782/2003, slightly amended in Annex II of the Regulation (EC) No. 73/2009	*Annex IV of Regulation (EC) No. 1782/2003, amended in Annex III of the Regulation (EC) No. 73/2009*	
Natura 2000 Directives; Nitrates and Groundwater Directives; Sewage Sludge Directive; Animal Identification-Registration; Pesticides Directive; Hormones ban Directive; General Food Law; Notification of diseases Directives; Animal Welfare Directives	Minimum soil cover; Minimum land management; Retain terraces; Crop Rotation; Arable stubble management; Appropriate machinery use; Minimum livestock stocking rates; Permanent Pasture protection; Retention landscape features; Unwanted vegetation; Olive groves maintenance	Overall obligation to maintain a percentage of land under permanent pasture

Source: Regulation (EC) No. 73/2009, articles 4-6.

The reform of the CAP introduced the notion of sustainable agriculture and opened the way for a number of accompanying measures to promote production methods compatible with the environment and the maintenance of the rural and natural space. Regulation (EC) No. 2078/92 has launched the agro environmental measures, further elaborated under the Regulation (EC) No. 1257/1999. National agricultural extension services started to provide farmers on these issues. One interesting concept of extended advisory capacity is developed in France and introduced by the Agrarian Law of 1999 'Sustainable territorial user contract' (*Contrat territoriaux d'exploitation*). This is an innovation of rural development policy, which included an economical approach of the farm and multi-functionality of agriculture, associating support to farm investment to the application of environmentally sustainable farming practices.

The farm advisory system is an additional tool to support the integrated system of direct support schemes, which inter alias consist of the identification system for agricultural parcels and farms, and their payment entitlements. Such systems represent control systems to ensure compliance with the statutory management requirements and good agricultural and environmental condition. The farm advisory system must be clearly distinguished from the control of cross-compliance. Advice to farmers is clearly distinguished from controls to ensure cross compliance obligations.

As a tool of the farm advisory system, farm advisory services include various advisory activities provided to farmers ranging from information to training and advice. As stipulated in Article 20a of Regulation (EC) No. 1698/2005, one has to differentiate between 'training activities' (measure 111) and 'advisory services' (measures 114 and 115). Training activities are just an input which is therefore not directly linked to farm advisory system, but the acquisition of competences to improve performance of both farmers and advisors. Training may reduce advice costs, but is often less focused on the individual problem of the farm. On the other side, unlike information, as the provision of facts, such as for example a list of farmers' obligations as required by article 3.2. of Regulation (EC) No. 1782/2003, advice is the provision of a technical and skilled opinion on a specific subject. The advice is an opinion which should help the farmer in order to decide relative to a product or process, or to clarify the farm holding parameters and interact with the farmer's assessment of his farms strengths and weaknesses.

Table 2. Actors and their roles with regards to compliance requirements

Farm advisory system	Agricultural producer	Integrated Administration and Control System (IACS)
Advisors help farmers with advice on statutory cross-compliance requirements and good agricultural practices	Agricultural producer has to implement minimum statutory requirements and good agricultural practices and is responsible for his actions	In case of non-compliance, both intentional and non-intentional, controls can lead to reductions and sanctions

Source: According to author.

When non-compliance is the result of an act or omission directly attributable to the farmer who submitted the aid application, the sanction would be the reduction or exclusion of the amount granted, taking into account the severity, extent, permanence and repetition of the non-compliance. As non-compliance is often the result of the absence of knowledge and information about good agricultural practices and statutory agro-environmental standards, the existence of national farm advisory systems is a guarantee that farmers may receive advice at least on the basic cross-compliance requirements, which should be a motivation to comply with environmental standards (Winter, May, 2001).

Operationally, the farm advisory service helps farmers to meet cross-compliance requirements, but in many EU member states it supported farmers' accountancy skills and book-keeping as regards cross-compliance obligations. Especially beneficial is one-to-one advice using checklists, as it is an individualized and structured approach to providing

advice. Therefore, the purpose of the advisory activity is to help farmers facing their obligations under cross compliance. The Regulation 73/2009 did not specify conditions to the frequency of advice, qualification of advisers and whether the advice has to be paid. Farmers use the advisory system on a voluntary basis and they remain responsible for acting on the advice they receive. Farm advisory systems do not affect obligations and responsibilities of farmers to meet the legal requirements. When inspecting farms, some member states consider that farmers seeking advice present a lower risk (Povelatto, Scorzelli, 2006).

Another purpose of farm advisory services is to enhance competitiveness of agricultural activities. Pursuant to Regulation (EC) No. 1698/2005 on support for rural development by the EFARD *'To achieve the objective of improving the competitiveness of the agricultural and forestry sectors it is important to build clear development strategies aimed at enhancing and adapting human potential, physical potential and the quality of agricultural production'*. Axis 1 of CAP Pillar II specified activities related to competitiveness which may be summarized as follows in Table 3.[11]

Table 3. CAP Pillar II - measures related to competitiveness

Measure 111	Measure 114	Measure 115
Vocational training and information for agricultural, food and forestry sectors – focused on improving the overall level of skills in the farming, food and forestry sectors.	Use of advisory services by farmers and foresters – farmers to become more responsive to new developments and techniques increasing efficiency and economic viability whilst adopting more sustainable practices. Advisory services should cover at least a minimum of statutory and good agricultural practices, including occupational safety.	Setting-up of farm management, farm relief and farm advisory services – incentive or farm advisory services to be set up, including support for investments to strengthen institutional capacity.

Source: According to author.

Financing and access

With regards to its financing, the rural development policy (CAP Pillar II) may co-finance the setting up and the use of the farm advisory service by farmers – that is a choice of the Member State when preparing its Rural Development Programme.[12] The first measure is co-financing farmers' use of farm advisory services in order to help farmers to meet the costs arising from their use of advisory services. The support is limited to 80% of the eligible cost per advisory

11 European Commission, Directorate General for Agriculture and Rural Development, Handbook on Common Monitoring and Evaluation Framework, Guidance document, Guidance note E, Sept. 2006.

12 Articles 24 and 25 and Annex I of Council Regulation (EC) No 1698/2005.

service, up to a maximum amount of 1500 euro. The Commission has established guidelines on the conditions for granting aid and prioritizing certain target groups, and on the frequency of advice and coordination and supervision of public or private advisory bodies. The second measure is co-financing the setting-up of farm advisory services, where member states may grant support throughout a maximum of five years.

However, ceilings are set up for financing setting-up or use by the farmer and the service must cover also occupational safety, and not only statutory requirements and good agricultural practices. In case the advisory activities were funded through the EFARD, the minimum coverage of these activities was broader than it was prescribed in Regulation (EC) No. 1782/2003, including occupational safety standards and the targeted beneficiaries (farm and forestry holders versus commercial farms). This has later been changed by article 12 of the Regulation (EC) No. 73/2009, which authorized member states to determine, in line with objective criteria, the priority categories of farmer that have access to the farm advisory system.

The second-pillar implementing rules pursuant to Article 15 of Commission Regulation (EC) No. 1974/2006 specify that co-financed farm advisory services shall have appropriate resources in the form of qualified staff and this can be set via a minimum level of education or certification. Detailed capacities are requested from authorities and bodies selected to provide advisory services, in order to be selected or accredited (see Article 15(2) of this Commission Regulation).[13] Also, it is important to ensure that farm advisory system's coordinating bodies organize basic and continuous trainings of advisors, what will be of a particular importance in the area of new action, and also to share their knowledge of the practical implementation of cross-compliance requirements.

The Proposal for the Regulation on financing, management and monitoring of the CAP goes further and specifies requirements relating to the farm advisory system (article 13). It establishes a general requirement that member states are required to ensure that the advisors within the farm advisory system are 'suitably qualified and regularly trained'. On the other side, article 13., par. 2. of the Proposal introduces a duty of member states to separate the advice and control and obliges member states to ensure that bodies designated to operate the farm advisory system do not disclose information and data they obtain in their advisory activity, except for irregularities and infringements upon which they are obliged to inform a public authority.

Operating bodies, providing advice, operate either through their own staff advisors or through networks of external advisors. Their accreditation is two-fold: it may be considered as part of the overall selection process of the operating body, or an additional accreditation/certification of staff or advisors within the accredited bodies. Most member states have set the threshold for advisors' minimum qualifications at university level and in only six

13 It is important to note that there was a project on developing professional competencies and certifications of agriculture advisors, co-funded by the Leonardo da Vinci programme and set up by IAFI in Prague, which involved six member states and developed a series of information ant tools for improving advisors' capacities. http://www.agroextension.net/default.asp

of them a parallel accreditation of advisors with technical or basic vocational agricultural training (Evaluation study, Descriptive Part, iv).

The requirement set out in the existing Regulation (EC) No. 73/2009 that beneficiaries, whether or not they receive support under the common agricultural policy, including rural development, may use the farm advisory system on a voluntary basis is reflected in Article 14 of the Commission's Proposal for the Regulation on financing, management and monitoring of the CAP.[14] Same is the case with regards to entitlement of member states to determine, in accordance with objective criteria, the categories of beneficiaries having priority access to farm advisory system. Whether they are priority farmers or not, the Commission is of the opinion that member states should do more to promote the farm advisory service, for instance by enclosing a list of advisory bodies when sending aid application forms to farmers and therefore it is proposed that Article 4 of Council Regulation (EC) No. 73/2009 includes an obligation on Member States to provide farmers with the list of FAS advisors (European Commission, 2010).

An overview of the organization of Farm Advisory Services in member states

At the EU level, there are no specified criteria for these bodies, they can be public or private, and national authorities are responsible for designating the advisory bodies in charge of the farm advisory service. The structure of farm advisory systems among the member states is characterized by a high diversity, as each country has developed its own extension services before Regulation (EC) No. 1782/2003 entered into force. In most member states the competence to set-up and coordinate farm advisory system is vested to the Ministry of Agriculture or a designated agency or centre within or outside this ministry.

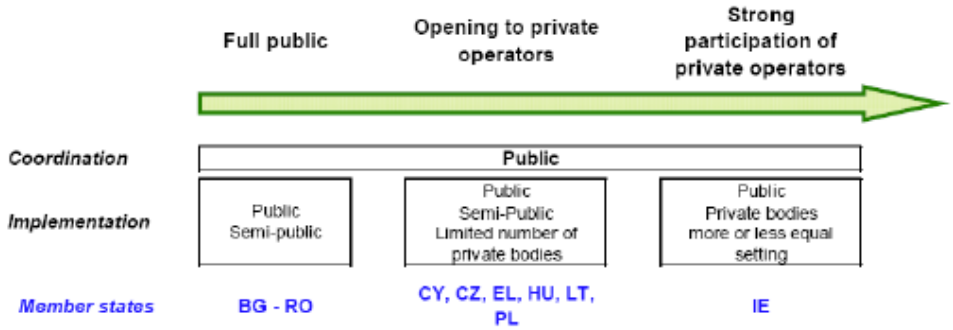
The farm advisory system in most member states become fully operational as of 2008, in around half of the member states the system was set up as a specific service, complementary to existing extension services, while in other cases it was interwoven with the existing extension service (European Commission, 2010, p. 5). According to the evaluation study commissioned by the Commission in 2009, the advisory bodies are selected via calls for tenders (14 member states) and by designating private (5 member states) and public bodies (5 member states). Fourteen member states established systems focused strictly on cross compliance, while in other countries it encompasses broader issues, such as support for agri-environmental commitments. In many states the farm advisory system is established as a specific service or facility within or alongside the existing extension system, as an autonomous system within the existing extension system. In countries which rely on their national network of chambers of agriculture and several new member states (such as Bulgaria, Romania, Poland, Latvia, Lithuania) the farm advisory system is implemented through most of the existing extension service providers, providing advices that includes advice other than the minimum to be offered in relation to cross-compliance issues.

14 Regulation (EC) No. 1782/2003 has foreseen the possibility to make the participation compulsory for certain categories of farmers after 2010, but this possibility has not been introduced through Regulation (EC) No. 73/2009.

The EU regulatory framework for farm advisory services leaves a margin of discretion to the member states in establishing their own farm advisory systems. The Evaluation Study commissioned by European Commission of 2009 has presented three main organizational situations regarding operating bodies: public bodies, private bodies and mixed public and private bodies, including an additional distinction between private profit and non-profit bodies. Most member states are moving towards a greater involvement of private firms in the delivery of extension and/or advisory services, but public service operators usually retain the overall guidance and coordination role. Privatization of extension services is being considered as supplement for public extension service, and solution to the problem of the lack of funding would be through consulting services and privatization of extension services by contracts to farmers (Amirani, 2001).

Chambers of agriculture play an important role in eleven member states.[15] The overall organizational structure of the farm advisory system is in line with the existing organizational modes and is showing a greater involvement of private or independent operating bodies. The Evaluation study of 2009 has grouped member states under five approaches: publicly-driven approaches, privately-drive approaches, chamber of agriculture driven approaches, mixed approaches and new advisory system organized around a government coordination unit, an implementation unit (governmental or out-sourced) and a number of accredited or designated operation bodies. Evolving publicly driven systems are characterized by the involvement of public services both in coordination and policy making, a sell in day-to-day implementation. Through the Programme of Community aid to the countries of Central and Eastern Europe (PHARE) and Special Pre-Accession Programme for Agriculture and Rural Development (SAPARD), the Czech Republic as an interesting model opening to private operators has built an agriculture extension system involving several types of service providers: NOGs, universities and specialized centres, private contractors etc.

Picture 1. Evolving publicly driven systems



Source: ADE – ADAS – AGROTEC – Evaluators EU, Evaluation of the Implementation of the Farm Advisory System –Descriptive Part, Report prepared at the request of the European Commission, December 2009, p. 23, available at: http://ec.europa.eu/agriculture/eval/reports/fas/report_des_en.pdf

15 Sections 3.1. and 3.2. of the 'Descriptive Part' provides a more detailed description of three major types of operation bodies. ADE – ADAS – AGROTEC – Evaluators EU, Evaluation of the Implementation of the Farm Advisory System – Descriptive Part, Report prepared at the request of the European Commission, December 2009.

Another model relies on chambers of agriculture, where the government retains responsibility for overall policy and enters into contracts with the national network of chambers of agriculture, specifying accreditation conditions and grant systems for advice. Such chambers are governed by specific national laws and their strength is in their local offices and potential to interact with farmers at local level. This model is developed in the following countries: Austria – with a complete network of chambers at a local level, Slovenia – eight regional chambers, and Luxembourg – one national level chamber.

Privately driven systems are characteristic for Denmark, Netherlands, Finland and Sweden. Here the oversight and policy lies in the hands of government, but the daily implementation is vested to private operation bodies, which organize and implement the advisory services independently of the government, but government may specify minimum criteria or good practice standards. In all these countries there is one main advisory institution, which emerged from the former associative organizations (the one in the Netherlands – DLV – was nationalized and then re-privatised). In these countries farmers have to pay full cost for advice received, but subsidies may be granted.

Belgium, Denmark, the United Kingdom and France are countries where different approaches co-exist. On one end of the spectrum, there is Denmark, one of the two EU countries where farm advisory services are totally paid for by farmers. Denmark does not take any EAFRD funds and overall organization of extension services was privatized in 2003 and is almost exclusively exercised by farmer-driven service providers. Some countries, like Italy, have a regional structure and in most regions service providers are private operators, often farmers' associations, cooperatives and local organizations. Belgium's system differs in Wallonia, where it is free for the farmer, and Flanders, where farmers pay for the service and can subsequently benefit from EAFRD co-funding. Be-WAL mostly operates though thematic advice providers organized as non-profit associations, while Be-FLA mainly through private profit-making bodies providing modular services.

Germany has a heterogeneous structure of agricultural advisory services that are the competence of the federal lands (*Länder*). In some of them Chambers of Agriculture play a major role. Interestingly, agri-environmental measures are not addressed by farm advisory service advisors, but other advisors under the leadership of the Ministry of Environment. In Southern federal states the system may be categorized as fully publicly driven, while in the former Eastern federal states there is a more privately-driven approach, with the exception of Sachsen (publicly driven). In some countries the system rests on chambers of agriculture, which are entrusted with public service obligations, and privately driven 'circles' of agricultural advices (*Beratungsringe*). With regards to the UK, while England has a fully privately-driven approach, Wales has a strong public setting aided by private advisory networks, while Scotland and Nothern Ireland operate a fully publicly-managed system, with some of their services outsourced to accredited advisers. French system is made of many organizations with strong geographical ties or these are local chambers of agriculture, management centres, technical groups and groups of producers in the same sectors. These bodies may be public, semi-public, private and non-governmental, and they all interact

with farmers through decentralized system of regional services – *Direction Régionale de l'Agriculture et des Forêts* (DRAF).

In general, monitoring of the farm advisory system as a core coordinator task usually falls under the responsibility of coordinating bodies, ministries of agriculture, sometimes chambers of agriculture, and rarely some specific organizations. Basic monitoring system includes: the monitoring of advice at the farm level, the monitoring of the operating bodies and advisors, and the monitoring of the system's overall functioning.

Table 4. Three major segments in implementation of the Farm Advisory System

Member State's Farm Advisory System coordination –	The operating bodies	The advisors
Governmental managing authority for coordination (day-to-day management sometimes outsourced)	Profit or non-profit oriented bodies, public or private	Employed by the operating bodies or consultants

Source: According to author.

A wide range of operating bodies is found throughout the Union – according to the Evaluation study of 2009 (Descriptive part, iv), private operating bodies represent a major group of operators, almost 90%, in which a clear distinction has to be made between the business and profit-oriented bodies that represent almost two thirds of the private operating bodies, and other non-profit member driven bodies such as associations, cooperatives or unions, providing services to members or specific types of farming. Regardless of their profit function, private operating bodies are quite heterogeneous. They may be holding-company like, with a central hub which provides support services to network of regional units or sister companies. It is often the case of public extension services privatized in Denmark, Netherlands, or association of farmers as in Finland and Sweden. On the other side, these can be rural economy centres, associative structures which combine specific technical services and business support, some of them are university linked. Some of them are farmers unions, producer associations, non-profit associations set up with public support and small private companies providing direct farm or technical advices, the last one is typical for Ireland. Approaches based on farmers' associations, unions and cooperatives are notably present in Spain, Italy and Portugal, as these countries do not have a tradition of formalized publicly-led extension systems. Public operating bodies make 8% of the share, while chambers of agriculture 3%.

Conclusion: where are we now?

Serbian agricultural subsidies sector attempted to approximate the EU *acquis* and allowed for three types of subsidies: direct payments, market support and structural measures. Entitlement to subsidies, in line with article 18., par. 2. of the Law on Agriculture and Rural Development obliges the producer to respect regulation setting out standards of environmental protection, protection of public interest, plant and animal health and safety, animal welfare and protection of agricultural land. Acting contrary to this requirement entitles the Administration for Agricultural Payments to decrease the amount of subsidy or limit the producer's right to

one or several types of subsidies in the future – this is repeated in Article 10 of the Law on Subsidies for Agriculture and Rural Development (Official Gazette of RS, No. 10/2013). Due to ineffective monitoring system, this legal transplant from the Council Regulation No. 73/2009 is not efficient in practice. Needless to say, Serbia is missing the framework of Good Agricultural Practices (Jovanić, 2013).

On the other hand, Agricultural Extension Services of Serbia (including Agricultural Advisory Service of Vojvodina) do not seem to understand the need of a general duty of advising on cross-compliance related issues. Serbian Agricultural Advisory Services, including Vojvodina Agricultural Advisory Service and its units, are being supervised by the Institute for Science Application in Agriculture, which monitors their work and the work of individual advisers, and is in charge of trainings. Extension services of Serbia are state controlled companies with limited liability and members of their board are nominated by the Government of the Republic of Serbia, upon the proposal of the Ministry of Agriculture, Forestry and Water Management. This is essentially a public institution as an intermediary between the Ministry of Agriculture, Forestry and Water Management and advisory services – and this makes our existing agricultural extension system, which needs to be upgraded in order to build an efficient farm advisory system, to encompass at least minimum cross-compliance requirements.

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EVROPSKI REGULATORNI OKVIR SAVETODAVNIH USLUGA U POLJOPRIVREDI

Tatjana Jovanić[16], *Anastazija Tanja Đelić*[17]

Rezime

Primarna svrha poljoprivrednih savetodavnih službi u Evropskoj uniji savetodavne je da pomognu poljoprivrednicima da bolje razumeju i ispune zahteve pravila EU o ekološkim aspektima poljoprivrede. Veliki pomak ka ovim ciljevima i pridavanje značaja savetodavnim sistemima u poljoprivredi pridaje se od 2003, kada je reformom zajedničke poljoprivredne politike uveden mehanizam unakrsne usklađenosti, koja je na snazi od 2005, i povezuje direktna plaćanja poljoprivrednicima sa osnovnim standardima koji se odnose na životnu sredinu, bezbednost hrane, zdravlja biljaka i dobrobit životinja, i uopšteno, uslovima da se poljoprivredno zemljište održi u dobrim poljoprivrednim i ekološkim uslovima.

Svrha ovog rada je da definiše regulatorni okvir savetodavnog sistema za poljoprivredna gazdinstva i savetodavnih usluga u EU i postavi pitanje nedostatka interesa i odgovarajućih mehanizama da se proširi aktivnosti srpskih poljoprivrednih savetodavnih službi ka kontroli uslova za procenu unakrsne usklađenosti i dobre poljoprivredne prakse.

Ključne reči: *poljoprivredni savetodavni sistem, savetodavne službe, savetodavstvo u poljoprivredi, unakrsna usklađenost, agro-ekološke mere.*

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Review Article

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THE PRODUCTION OF PELLETS IN SERBIA: A STUDY FROM COMPANY C

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Summary

This paper examines the issue of renewable energy through production of pellet as one part of biomass. The research setting consisted of a domestic company that operates in Serbia. The biomass as a potential energy source is well-explored issue by scientists and practioners in developed countries. There are few studies of using biomass in developing countries such as Serbia. The purpose of this study is to analyze feasibility of producing pellets in selected company in Serbia. This paper contributes to the existing literature by assessing production pellet in a company that operates in transition environment. The findings have significant implications for practitioners attempting to manage projects in the domain renewable energy. Furthermore, the study provides the example of good practice for other entrepreneurs in Serbia.

Key words: *renewable energy, pellets, project management, feasibility study, Serbia*

JEL: *Q16, G11, Q01*

Introduction

Eighteen per cent of the total energy comes from renewable sources of energy. The majority of renewable energy – 13% is biomass, the redundant are solar energy, energy of wind as well as thermal energy.

The significance of the use of renewable source of energy is twofold. First, the definition of biomass will be proposed.

According to EU directives, the biomass includes biodegradable materials from agriculture, animal husbandry, as well as biodegradable part of industrial and municipal waste. Thus, the biomass is defined as fuels that can be obtained through biological processes in relatively short periods. Carbon dioxide, water and solar energy occur in the form of plant biomass. Biomass consists of wood, straw, maize, sugarcane, vegetable oil, resin, sugar cane, sugar beets, mash and mass of green.

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Biomass is a traditional, renewable and secure source of animal food, raw materials and energy. For efficient use of biomass as an energy source, it is necessary to know its physical and chemical characteristics. Biomass mainly consists of fuel (50%-60%), moisture is highly variable, and sulphur has only a trace.

The biomass as a potential energy source is well-explored issue by scientists and practitioners in developed countries[4].

It is possible to obtain three tons of straw from wheat, canola and soybean, five tons of corn, four tons of sunflower stalks from one hectare of agricultural land. The chemical composition of these types of biomass is similar to wood.

The following data illustrate the importance of biomass: 2.5 kg of straw can save: 1 litre of heating oil; 1.06 cubic meters of gas; 9.72 kilowatts of electricity; 2.2 kg of wood and/or 1.94 kg of coal.

In the case of Serbia, Vojvodina Province has potentials for production of biomass from agriculture, while the Eastern and South-western Serbia have considerable potentials for production of biomass from woods. The energy from biomass could comprise 25% of total primary consumption in Serbia. In the sector of agriculture food producers have a reasonable chance to become energy producers. This is supported by the fact that in Titel opened a plant for production of briquettes and pellets with new technology. The factory is equipped with modern dryer straw and sawdust, the briquette pellet. Plant capacity is 7,000 tons of briquettes and pellets per year, which is only 3% of the total area planted. Therefore, the perspective and the need for such new technologies in Serbia are extremely large.

"Two million hectares or more than one-fourth of the country's total land area are covered by forests. Biomass from wood is a energy potential in Serbia. In fact, twenty-eight different municipalities have more than 40% of their entire area covered by forests.

Municipalities with the highest share of forest area are in two main regions. In the South-Western Serbia, over 80% of Prijepolje municipality is covered by forest, while in Priboj and Kuršumlija municipality between 61% and 80% of territory is covered by forests. In Eastern Serbia, Majdanpek municipality is over 80% covered by forest, while in Kucevo, Žagubica, Bor, Baljevac, between 41% and 60% of territory are covered by forests. Ownership structure of forest in Serbia is the following: 52.5% of forests are state-owned, while 48.5% of the total forest area is private owned. The majority of companies that producing wood in Serbia are private owned or in the process of privatization"[5].

4 We meant on following studies: Bonilla, D., Whittaker, C. (2009): *Freight Transport and Deployment of Bioenergy in the UK*, Working paper N° 1043, University of Oxford, Murray, G. (2010): *Lillooet Biomass Energy Corporation Business Plan for a Wood Pellet Plant*, Gordon Murray Corporate Finance Ltd.

5 http://www.serbia-energy.com/index.php?option=com_content&view=article&id=292&Itemid=87. The data came from statistics provided from the Serbian Ministry of Agriculture, Forestry and Water Management.

Using biomass, not only to replace part of a much needed energy, which is obtained from conventional sources, but in order to meet the strict criteria of environmental protection. Energy contributes to increased employment, safer and better life, even though considerable investment. Massive use of biomass contributes to reduce the emissions of sulphur dioxide, carbon dioxide and nitrogen dioxide.

Greater use of renewable sources of energy will lead to the development of industry machinery and equipment investment in Serbia. In order to implement EU legislative in Serbia, it is necessary to create a team from Ministry of Agriculture, Environment, Energy and Finance.

The main obstacle for the economic exploitation of biomass is the dispersal and inaccessibility of the terrain for mechanized collection. Installations for the production of energy from renewable sources tend to be relatively small capacity, and thus investments in individual plants are also relatively small. Therefore, there is a reasonable basis for the integration of Serbian economy in the development of technology, production equipment and participation in the competition for the sale of products to neighbouring countries. Bearing in mind that the renewed energy sources mainly located in rural areas, this production can ensure the high employment of the rural population. It is necessary to realize that energy production from biomass brings more jobs than large power plants and mines, which now have to pay the "ecological tax" due to coal combustion. In this process Serbian Government should be an initiator. There are a lot of examples of inventive individuals – producers of renewable energy. The institutional support in Serbia is missing. The extensive use of biomass can be very profitable business, not only for entrepreneurs but for state as whole.

Based on the results of one study, the need of using biomass for households has been identified. The potentials of biomass production in Vojvodina Province were estimated using published data, and measuring the yields provided by farmers. It is necessary to formulize strategy of implementation the production of biomass in order to resolve conflicts between the Government and consumers. The national regulation harmonized with the existing EU standards concerning the use of biomass for domestic heating is the first important issue.

The paper structured as follows. First, an overview of the relevant concept and previous studies is presented. The paper then introduces the research methodology, presents the research findings, discusses them, and draws some conclusions and implications. Finally, the contributions and some possible directions for further research are presented.

European experience in the production of pellet[6]

The production of pellets in Europe began in the 1980s in Sweden, due to high oil prices and the need to reduce air pollution and the environment - that there is a greater use of coal and other fossil (non-renewable) fuels.

Since then, the production and consumption of pellet are growing. In 2006, there have been 200 plants in Europe that producing pellet, with annual production of over 4.5 million tons of pellets.

In early 2000s, the members of EU have been adopted the laws of renewed energy, in order to encourage the use of renewable sources of energy. The main motive for obtain this legislation was an International agreement reached 1998 in Kyoto, to reduce emission gases in the atmosphere that cause the effect of greenhouse. The EU Commission believed that the greatest contribution to achieving this goal may be to provide extensive use of biomass.

In some EU countries, such as Holland and Belgium, the consumption of ecology friendly energy is significant higher than production of renewable energy.

In Slovenia, the legislative regarding the renewable resources consisted of 11 laws, in Switzerland there are 32 regulations, and Romania has ten laws. Therefore, for faster implementation of the Kyoto Protocol and use of renewable energy in the global market, it is necessary to clearly define and to create general conditions for this kind of energy. This is especially true for the production of electricity from biomass.

Before 2001, the biomass is mainly used for heat and very little to produce electricity, and since that time together and using thermal and electrical energy, or biogas produced by an electric current. Regulations on electricity from biomass, which are published in various countries since July 2001, and the improved versions and 2004 and 2005, give encouragement using biomass to produce electricity.

The point is that the companies offering and distribution of electricity required to take any amount of offered electricity produced from renewable sources, and is payable over the next 10 years in Slovenia, 13 years in Austria, 20 years in Germany. The amount of compensation depends on renewable energy sources, power plants and the beginning of exploitation.

The law on renewable energy production from renewable sources of energy in Germany, as well as in Austria, has developed over the last five years in the leading economic sector, which is directly or indirectly employs about 120,000 people. These jobs depend on the degree of implementation and further development of the renewable sources of energy. When the Government creates legislative, investors do business in proposed sector.

Since 1992 many plants that produce electricity using biogas in Germany have been established. This number constantly increased since 1998. Similar activities are taking place in the Czech Republic and Slovakia. For the last ten years, Czech Republic four times increased use of biomass, because they made certain regulations for its use.

6 Data were obtained from European Pellet Centre, http://www.pelletcentre.info/cms/site.aspx?p=878

Romania and Bulgaria are intensively working on drafting regulations that will allow greater and rationally, using biomass to produce electricity, but also as a feedstock for biodiesel and bio ethanol.

Low electricity prices and the limited state budget are the main reasons why there is a lack of massive using renewable energy in Serbia. The EU green energy producers get stimulus from their Governments. What are the advantages of using biomass? Project has been launched in the Swedish city of Vasteras, located about 100 km from Stockholm designed to organic household waste and biomass to the processing of crops to the extent that it gives biogas which is useful for transport. The project is conceived, but also achieved. It involved 17 farmers, together with the local waste disposal company for owners of small factories for processing biomass into biogas. All short, then, from the kitchen, the organic waste, is sorted separately. Local companies transported organic waste into operation with an annual processing capacity of about 25 tons of organic waste. Price of such fuel is slightly lower than conventional, but it is a source that can be renewed, that the environment is protected and that this is a possible way to at least mitigate the consequences of a future energy crisis.

Price of biomass pellets and briquettes without binders in the Vojvodina Province is 100 to 120 €/t of briquettes[7]. If binders are added to increase the price of briquettes, wet biomass must be dried artificially because of the large expenditure of energy, but needs to dry natural draft.

Briquettes formed from crushed material are more stable during storage and transport, but significantly increases the proportion of energy used in grinding material.

Cost of production of briquettes and pellets depend on following factors: row materials, methods of collecting, collection techniques, transport and storage, lines for molding, extrusion technology, packaging, performance line, the number of workers, the value of the facility and equipment, interest on loans, etc. When everything is taken into account the cost of production of briquettes and pellets from wood sawdust (100 €/t) and from plant residues from agriculture to 120 €/t.

The selling price of briquettes and pellets in bulk and wholesale amounts to 100 €/t and retail 150 €/t packed in sacks, on the domestic market, which has not yet been developed[8].

Price of briquettes and pellets intended for the European market is 100 € in bulk, 200€ packed in large sacks and 300€ packed in small bags, but they must be produced according to European standard CEN standards[9] or the country in which the sale of briquettes[10].

7 Brkić, M., Janić, T. (2008): *Briketiranje i peletiranje biomase,* Savremena poljoprivredna tehnika, vol. 34:1-2, pp. 85.

8 Ibidem, pp. 85.

9 See more about CEN standards in Brkic, M., Janic, T. (2009): *Standards for pelleted and briquetted biofuels,* Savremena poljoprivredna tehnika, vol. 35:4, pp. 260-267.

10 Pejanović, R., Jelić, V., Zekić, V., Brkić, M. (2010): *Economic indicators of pelleted biomass combustion,* Savremena poljoprivredna tehnika, vol. 36:4, pp. 411-419.

Material and methods

In the selection process of company, two main criteria were used: (1) the access to the company, (2) previous sustainability activities in Serbia.

The data was collected from a vast array of company archival information that included financial reports, corporate responsibility reports, internal memoranda, and strategy documents.

Main activity of Company C is the production of fruits and vegetables, as well as foreign and domestic trade. Given that each production requires large energy consumption in line with new trends in the world in the field of renewable energy, top managers in Company C have been decided to invest in the production of pellets. This investment would not only meet the energy needs for its own production and processing of fruits and vegetables but would become a significant exporter of high quality ecological fuel - pellets.

Using the pellets in the production and processing of fruits and vegetables significantly reduce the costs of the final product.

Current status of the company can be described by following:

- Medium company according to number of employees and the total operating capacity,
- Years of experience and strong persistence on the market with remarkable goodwill,
- Domestic and foreign market is still open and promising for fruit and vegetables,
- Crisis of years taken as an opportunity to consolidate power and that with education and innovation and in particular maintain product quality and increase market share.

The choice of investment ideas - as a priority, affected the economic viability of primary production and processing of fruits and vegetables, as well as new trends of renewable energy. To regulate international laws and regulations and it is known that the *Kyoto Agreement* means the reduction of greenhouse gases by 5.2% by 2012. The European Union has agreed to achieve by the year 2020 level of 20% share of renewable energy sources (in which the largest share of biomass), which will affect the creation of micro-climate suitable for the realization of the investment ideas.

Long-term strategy of Company C includes:

- Modern equipment and technology for the production of pellets, which closes the circle of the current production of fruits and vegetables from their own source of energy.
- The possibility of continuous production of standardized, high quality and required pellets, which can be achieved enviable export, but also economic and financial effects.
- Provision to the final long-term investments, environmental, economic, high-calorie products to the European Union, known and trusted for the foreign buyer is one of the important motives of investment choices.

When choosing an investment priority, among other essential components of their investment, jobs and provision to the raw material are crucial. To be able to plan their capabilities not

only enough to know the capacity of the plant, but it is tremendously valuable to plan a continuous flow of raw materials.

Amount to approximately 40,000 m^3, providing a projected level of annual production of over 22,000 of tons of pellets.

Around 27.3% of Serbian territory is covered by forests 2,429,642 (ha). More than 50% of forests are state-owned, the rest is private owned. Growing stock in forests in Serbia is around 235 million m^3.

The choice of supplier has been influenced by the overall capacity of Srbija Sume (646,000 m^3 annual production of cordwood - Investments need a hire only 4% of the capacity of the Supplier).

Pellet market in Serbia is in its infancy and at present, exist only four plants with a production of only 50,000 tons of pellets per year. Therefore, the competitors in the sector are weak and insignificant.

Results and discussion

The content analysis has included all-important issues of the feasibility study in Company C. The project cost estimation illustrates Table 1.

Table 1. Estimation of costs

No.	Figure	Amount (in €)	%
1	Land	566,457	20.24
2	Building construction	212,916	7.61
3	Equipment	1,427,700	51.02
4	Feasibility study	95,790	3.42
5	Long term assets (1+2+3+4)	2,302,863	82.29
6	Current assets	495,596	17.71
7	**TOTAL ASSETS (5+6)**	**2,798,459**	**100.00**

Source: The feasibility study of Company C

The table below shows the sources of funding. From the table 2, we see that the investor plans to take two loans: one from the Serbian Development Fund and the second from one commercial bank that operates in Serbian market (*see Table 2*).

Table 2. Financing project producing pellets

No	Figure	Amount (in €)	%
1	Own capital	875,163	31.28
2	Development Fund Of Republic of Serbia	961,648	34.36
3	Bank term loan	961,648	34.36
4	**Total**	**2,798,459**	**100.00**

Source: The feasibility study of Company C

The parameters of the project success are based on the following:

- Optimal use of existing technical and technological capacity (annual production of 22,320 - t, which is approximately 80% utilization of technical capacity), custom real and reliable sources of supply of raw materials (high degree of correlation between those);
- 310 working days required to achieve the projected production and planned revenues;
- Real inputs, both from the standpoint of current prices, and sources from the standpoint of real quality, favourable, competitive supply of raw materials;
- The highest achievable level of exports, not only in terms of empirical performance, but also with regard to quality and competitiveness of production, and supported by global demand and solid export contracts with reliable and respectable foreign partner;
- Inflows from the sale of real, export only;
- The actual positioning of the intensity and cost structure - verified technical and technological standards, and empirically validated;
- Involvement of a multidisciplinary team of experts in the team of managers, specialists and highly skilled employees (21 full time);
- Project life of 10 years;
- The use of partial co-financing, through a soft loan the Serbian Development Fund co-financing and bank loans (by Government of Serbia and with Guarantee Fund);
- Calculating the depreciation on a proportional basis, according to the nature of immobilization and equipment.

Total income can be calculated based on quantity of 22,320 tons and price 125 €/t. It makes total income of 2,790,000€. Projected total costs from the project are shown in Table 3.

Table 3. Costs calculations

No.	Figures	Amount (in €)	%
1.	Material costs	1,840,344	79.99
1.1.	Row material	937,440	
1.2.	Packing	148,800	
1.3.	Energy	221,601	
1.4.	Transport	493,272	
	Other expenditures	39,235	
2.	Immaterial expenditures	34,500	1.50
2.1.	PTT costs	18,000	
2.2.	Marketing expenditures	14,850	
2.3.	Other	1,650	
3.	Amortization	225,682	9.81
4.	Salaries	151,200	6,57
5.	Interest expense	48,957	2,13
6	**TOTAL COSTS**	**2,300,683**	**100.00**

Source: The feasibility study of Company C

After the calculation of costs, it is necessary to include income statement (*see Table 4*).

Table 4. Income statement

No	Figures	Amount (in €)
1.	**Total Income**	**2,790,000**
2.	**Total Expences**	**2,300,683**
2.1.	Material expences	1,840,344
2.2.	Immaterial expenditures	34,500
2.3.	Amortization	225,682
2.4.	Salaries	151,200
2.5.	Interest expense	48,957
3.	**Accounting Income before tax**	**489,317**
4.	**Income Taxes**	**48,932**
5.	**Adjusted Net Income**	**440,385**

Source: The feasibility study of Company C

Most often used methods for project selection are dynamic methods[11]:

- Net present value (NPV),
- The index of profitability,
- The period of recovery,
- Internal rate of return,
- Method of annuities.

In this project, the following dynamic methods have been used (*see Table 5*):

- Calculate the net present value of the Project
- Calculation of internal rate of return of the Project
- Calculating the payback period.

Net Present Value (NPV) of the project demonstrates the ability to repay the funds invested in it. If the project has positive net-present value (NPV), may be eligible for the realization - which also applies to the subject of an investment. It is obvious that the project, after 10 years, makes enough money to finance another, a new project, which is provided more than 1.1 million €.

Internal rate of return (IRR) is the discount rate at which the net present value (NPV) of the Project is equal to 0. If the NPV is positive net inflows, it is clear that this rate will be higher than the discount rate (12%) or the minimal rate of return (16%). The minimal rate of return is the lowest rate of return which makes investment profitable. Bearing this in mind, the subject project may be considered acceptable, especially since, as the IRR for an investment subject even 22.19%.

11 Kontic, Lj. (2009): *Upravljanje projektima,* Kontic, Lj., Belgrade.

Table 5. Financial models

Element	Year									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Annual savings (in 000 €)	5,58	2,79	2,79	2,79	2,79	2,79	2,79	2,79	2,79	2,89
Costs	4,87	2,07	2,08	2,08	2,08	2,08	2,08	2,08	2,08	2,08
Investment (use negative value)										
-2,798.00	**Net annual savings (in 00€)**									
	716	718	716	714	711	710	710	710	710	816

Ratio	Value	Explanation
Cumulative savings	7,231,00	Sum of all annual savings
Payback period	3.87	Period in which investor will back his money
Discount rate	12.00%	Rate that is used to calculate present value of investment
NPV	1,131,16	Net present value
B/C Ratio	1.07	Ratio of all net savings/net costs
IRR	22.19%	Internal rate of rentability
Min IRR	16.00%	The lowest value of IRR at which investment is profitable.
Profitable investment?	Yes	If IRR is higher than min IRR investment is profitable

Source: Authors' calculation

From the table 5, it is clear to see that the underlying investment return in the fourth year of operation, i.e., after 3 (three) years, 10 (ten) months and 27 (twenty seven) days.

Table 6. Financial flows (in 000 €)

Figure	Years									
	I	**II**	**III**	**IV**	**V**	**VI**	**VII**	**VIII**	**IX**	**X**
I incomes	**5,589**	**2,790**	**2,790**	**2,790**	**2,790**	**2,790**	**2,790**	**2,790**	**2,790**	**2,897**
1. Total income	2,790	2,790	2,790	2,790	2,790	2,790	2,790	2,790	2,790	2,790
2. Own capital	875	0	0	0	0	0	0	0	0	0
3. Loans	1,923	0	0	0	0	0	0	0	0	0
4. Redundant of project value	0	0	0	0	0	0	0	0	0	107
II expenditures	**4,932**	**2,639**	**2,619,**	**2,599**	**2,580**	**2,079**	**2,079**	**2,079**	**2,079**	**2,079**
5. Long term assets	2,302	0	0	0	0	0	0	0	0	0
6. Short term assets	495	0	0	0	0	0	0	0	0	0
7. Material costs	1,840	1,840	1,840	1,840	1,840	1,840	1,840	1,840	1,840	1,840
8. Immaterial costs	34	34	34	34	34	34	34	34	34	34
9. Annuities	59	567	545	523	501	0	0	0	0	0
10. Salaries	151	151	151	151	151	151	151	151	151	151
11. Income tax	48	46	48	50	52	53	53	53	53	53
III net income	**657**	**150**	**170**	**190**	**209**	**710**	**710**	**710**	**710**	**816**
IV cumulative	**657**	**807**	**978**	**1,168**	**1,377**	**2,087**	**2,798**	**3,508**	**4,218**	**5,034**

Source: Authors' calculation

Analysis of economic and financial flow of the Project determines the liquidity of the project and gets an insight into the investor's ability to promptly and fully, meeting their financial obligations over the life of the Project:

- The project follows the on-going liquidity in all the years of economic and financial flow;
- Liquidity is reflected in positive cumulative difference between inflows and outflows.

Appreciating that the implementation of the respective investment ideas followed the principles of expediency, the reality, fully present, timeliness, cost effectiveness, legality, optimality, liquidity, systematization, and others. The project can be considered feasible and acceptable.

Economic and financial parameters of the project (accumulation, reproductive ability, efficiency, liquidity, net present value, internal rate of return, payback time indicate its socio-economic acceptability and realistic basis for future development and expansion of the Investor. The special significance of the project provides production and supply with 100% placement through exports (verified by the relevant contracts).

The full consolidation of financial and business investors, with an obvious trend of growth and development, and organizational and human resources, technical-technological and market potential investors, provide a basis for expectations to be able to implement investment ideas to the designed parameters.

Conclusion

Renewable energy sources include biomass, where the traditional, environmentally friendly, safe energy sources that are of increasing importance in the world and even here in Serbia. Under the biomass fuels are considered to be obtained through biological processes in a short time and include wood, straw, corn, cane, vegetable oil, resin, sugar cane, sugar beet, rape and mass of green.

Using biomass, not only to replace part of a much needed energy, which is obtained from conventional sources, but in order to meet the strict criteria of environmental protection. Precisely because of such consequences, many countries have signed an agreement to reduce greenhouse gases called the Kyoto Protocol. In Europe, there is a steady trend of development and use of biomass by opening new factories.

The feasibility study in Company C clearly shows the feasibility and economic viability of investment in plant for the production of pellets. Used capacity will be 80% or 310 days per year. The entire investment will be returned after three years and 10 months.

This and similar facilities are good practice and the future that enable the positive effects of the environment, agriculture, national economy and energy.

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PROIZVODNJA PELETA U SRBIJI: STUDIJA KOMPANIJE C

Ljiljana Kontić[12], Pero Petrović[13], Jovan Kontić[14]

Rezime

U radu se istražuje tema obnovljive energije kroz proizvodnju peleta kao jednog oblika biomase. Istraživanje je sprovedeno u jednoj domaćoj kompaniji koja posluje u Srbiji. Koncept biomase je u fokusu istraživanja naučnika i praktičara u razvijenim zemljama. Mali broj studija bavio se pitanjem korišćenja biomase u zemljama u razvoju. Cilj istraživanja je analiza izvodljivosti proizvodnje peleta u izabranoj kompaniji. Ovaj rad dopunjava prazninu u literaturi nalazima procene proizvodnje peleta u kompaniji koja posluje u tranzicionim uslovima. Rezultati su važni za praktičare koji upravljaju projektima iz oblasti obnovljivih izvora energije. Takođe, istraživanje predstavlja primer dobre prakse za druge preduzetnike u Srbiji.

Ključne reči: *obnovljiva energija, peleti, projektni menadžment, studija izvodljivosti, Srbija.*

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THE PROBLEM OF AGRICULTURAL LOANS IN YUGOSLAVIA BETWEEN TWO WORLD WARS

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Summary

After World War II agrarian problem and the organization of agricultural credit in the newly formed Kingdom of SHS broke out in the foreground. The problem of agrarians' access to credit, since before the First World War, only prolonged the creation of the new state. Instead of enlarging the capital, which was a feature of Western European countries, continued with the establishment of small banks and the process of fragmentation of capital. The resolution of the agrarian question happened with the adoption of the privileged Agrarian Bank in 1929. The establishment of a state bank, with more capital and increased grant loans approval to agrarians with a lower interest rate, began to solve a problem that has burdened the agrarians in 19 century.

Key words: *loan sharks, agrarian credit, peasantry bond, privileged agrarian bank*

JEL: *B22*

Introduction

Agrarian problems and organisation of agricultural loans have started to shake Serbian nation since the second half of XIX century. Usury that was particularly actual in the mid-seventies and in the eighties of the XIX century practically dictated difficult economic position of peasantry. Therefore, the only way to suppress the usury was to organise banking market. First Serbian bank was founded in 1869. Based on Trading law from 1860, however, for the peasantry wasn't enabled to take draft loans.

In the XIX century, on the contrary to the centralisation process and capital concentration which developed in the Europe of that time, in Serbia a process of capital commination took over. Only with the determination of the Law of Privileged agrar Bank in 1929 the measures against passive billing drafts ability to agrar population were abolished, and those

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measures were the biggest problem during XIX and in the beginning of the XX century. By forming of the Privileged agrar bank started to resolve the agrarians issues, and, as well theirs position started to improve compared to the past times.

Objective of this paper is to, analysing historical facts of XIX and XX century, introspect position of peasantry in Serbia and the problems that infected him the most. Therefore, we will analyse legal acts, as well as the obstacles and limitations that peasantry had to confront with, while using their bank possibilities in solving theirs daily based issues.

Usury and first Serbian bank foundation during XIX and in the beginning of the XX century

Passive draft billing ability was deducted from agrarians by Trading law of 1860, so they had no possibilities to legally get personal billing draft loan. At that time, usurers[4] got lending opportunity towards agrarians by founding stock companies in provincial parts of the country. In our state there is a custom that if agrarian needs two, three, five dozens goes running to the city to people whom are known to borrow money, and this trade is upon goods to come, and that is how it's called *rake off*. By coming to this sort of heartless speculator - loan shark - the agrarian asks, for instance five dozens as a loan and he gets them from loan shark, but in return for this loan, agrarian is obliged that in the fall gives him 1400 units of corn, counting 100 units for one talir[5]. Minister of agriculture and waters dr Velizar Janković considered that within areas of Serbian law, agrarians were on their own. By forming Administration of Funds, mortgage loans were still hardly accessible to peasantry, while loans from private banks were highly expensive. Deprivation of passive loan abilities to agrarians, characteristic measures of second half of XIX century and beginning of XX century, was abolished with Law of Privileged agrar Bank in 1929.

In the mid of XIX century, Serbia had a lots of money-landers whom repurchased crops from peasantry in very low prices. There were cases when the burden of paying off to the loan sharks use to destroy complete villages. During 1857 and 1858, in several turn, Serbian Newspapers[6] pointed out the diminished appearance of the loan sharks across Serbian villages. Those reports explained how agrarians who had, in the beginning, a debt of 14 talirs, pressed with need for financial assets, and careless with theirs material circumstances and without paying attention to how they will repay their debts, agreed to commit, if they don't deliver their crops until the arranged dead line, they will pay 3 talirs for each 100 units of crops, which was 42 talirs in total. So, from 14 talirs they begin with, their debts raised to 42, which further meant that interest rate for principal amount from 5 dozens, increased from 2 to 16 dozens, so on, from 40% to 220%. Under those conditions, agreement was made and signed by two witnesses. Those witnesses often were loan sharks themselves, but

4 Usuries were loaners who distributed their personal free financial assets under very unfavorable conditions, and in such way, using poor status of agrarians gained high revenues

5 Talir was silver Austrian money.

6 Serbske novine, edition 26, 1857.

they hide their tracks[7].

The Serbian peasantry of XIX century, run into debt very easily and often at the same time while they weren't ready to repay the debt before required dead line, which influenced escalation of usury in great amount.[8] The most often case of running into a debt for Serbian peasantry was the spring selling green wheat (making preparations for house odour, weddings, funerals, etc.).

Further on, Serbian peasants had to obtain money to pay out the tax fees. State tried to counteract advents of this kind by creating of certain laws. In civil Court act of 1860, in 1836 was added legal act of duke Miloš, that prohibits confiscation of peasantry basic share of theirs land.

Usury could only be prevented with the organization of the banking market. The first Serbian bank was founded in 1869. Pursuant to the Trading Law in 1860, the peasants were not allowed to take loans bill. Specifically, Article 76 of the Law mentioned above prescribed that every Serb can issue the bank bill, receive it and transfer this to another[9]. However, the following Article 77 of the same Law stated with it is exempt from peasantry who are interested in agrarian business[10]. The legislature held that the Serbian peasant is illiterate and ignorant and do not realize the gravity of the bill obligations, so the bill shouldn't be given to him. Serbian peasant, therefore, could not come up to personal bond loans, and, therefore had to address to loan sharks.

Loan shark practice to blackmail peasants to falsely sign the bond bill, since the end of the nineteenth century gradually began to approach and the monetary institutes that were springing up all over provincial parts of Serbia. In a country without a regulated agricultural loans, in which the agrarians were legally seized creditworthiness, loan bond bills to peasantry given from provincial joint stock banks were, in fact, a specific form of outside legal, usurious loans[11]. With this kind of provincial banks practice of giving loans to peasantry, provincial joined stock banks have recourse to the illegal act of loaning, and thus accomplished extremely high revenues. Precisely the ability to gain fast and high earnings by discounting of peasantry drafts initiated the mania for multiple organizations for small monetary offices establishments in provincial parts of Serbia.[12]

Since the establishment of the Privileged National Bank in 1884, in Serbia was seven joint-stock banks established with private capital. However, during the First World War in Serbia were founded 208 private joint-stock banks. What was typical for the period from the late 19th and early 20th century is that the general increase in interest rates in the banking

7 Gnjatović, D. (2010): Zelenaši – prvi kreditori zemljoradnika u Srbiji, Bankarstvo, no. 1-2, str. 50, 52.

8 Glomazić, M. (1933): Istorija Državne hipotekarne banke, Beograd, str. 125.

9 Niketić, G. (1914): Trgovački zakonik i specifični postupak, Beograd, str. 35, 36.

10 Ibid, p. 35, 36.

11 Gnjatović, D. (2010): Zelenaši – prvi kreditori zemljoradnika u Srbiji, Bankarstvo, no. 1-2, p. 60.

12 Petrović, J, (1930): Okućje ili zaštita zemljoradničkog minimuma, Beograd, p. 98.

market of the former Serbia was due to increased demand for agricultural population for provincial credits. The interest rates at which private banks gave bond loans have led to the creation of the chaotic situation in the whole economy, and the Privileged National Bank had to react. As the foundation of the bank mentioned above decided to pursue a policy of cheap money and credit, the main instrument of its policy was the discount rate[13]. National Bank led its policies not only by taking indirect regulation of credit measures, but also the direct intervention measures. So she joined the state administration about limiting the cost of capital (12% minimum limit interest rates on an annual basis was very high). Privileged National Bank of the Kingdom of Serbia this way set conditions on private banks, which wanted to use their credits in hers branch offices. Banks that have existed for minimum in three past years could have the fully charged interest at the rate of 8%, banks that existed for two years were charging an interest rate of 9%, and banks with one year of existence limited the interest rate to 10%.[14]

Usurious banks were still formed on the entire territory of Serbia, charging high illegal interest rates. Thus, initiated measures of direct intervention in the market of banks couldn't stop the usury. Then the laws against loan sharks were performed[15], though in practice they weren't respected either. Those laws remained in force and after the First World War.

The establishment of the new state of the Kingdom of SHS formulated conditions where agrarians from the former Kingdom of Serbia and Montenegro found themselves in a subordinate economic and assets position, compared to agrarians in parts of the former Austro-Hungarian Empire. "Purely economic issue, which is the Kingdom of Serbia, was treated as fiscal and social one, in the Kingdom of SHS received a political one".[16] In that time, educated people from Serbia sought the limitation of the traffic of the country and were against the confiscation of passive bonding ability of the peasantry, so they asked for changes in the law.

Economic conjuncture after the war was quite good, however in 1925 there was an outbreak of agrarian crisis, and in 1929 general economic crisis, and the rural population fall into the debt crisis.

Banks that have kept unpaid peasant bonds found themselves in a very bad position. In order to save the agrarians and the private joint-stock banks from indebtedness, the state in periods over 1928 and 1929 passed several laws to reorganize the agrarian loans.[17] The article 97 of new Bonding law, passed in November the 29th of 1928 was: Any person

13 Discount rate was an interest rate which was used in the cases when private stock banks were landing money from Central bank, discounting in that way short term bonds of their clients.

14 Central Bank 1884-1934, Belgrade, p. 61.

15 These laws prohibited alienation of protected minimum of the land, by limiting interest rates and disconnecting from passive bond ability of the peasantry.

16 Gnjatović, D. (2010): Zelenaši – prvi kreditori zemljoradnika u Srbiji, Bankarstvo, no. 1-2, p. 66.

17 Nedeljković, M. (1927): Pasivna menična sposobnost zemljoradnika s pogledom na naše buduće zakonodavstvo, Ekonomist, Beograd, str. 179-201.

that can contract itself to the regulations of the Civil and Trading Law can engage into the bonding obligation.[18]

The organization of agricultural credit in the Kingdom of SHS and the Kingdom of Yugoslavia after the World War II

When in the 18 of August in 1920 dr Velizar Jankovic became Minister of Agriculture and Water of the Kingdom of Serbs, Croats and Slovenes (SHS), one of the first questions that were brought up on the agenda of the Royal Government was related to the organization of agricultural credit. He felt that the unique solution of this issue is of great importance in country where 3/4 of the population lived from agriculture and animal husbandry.[19]

After the Balkan Wars (1912-1913.) legal norms of the Kingdom of Serbia which were taken to regulate agricultural loans extended to the new south conquered areas (Kosovo and Metohia, Sandžak and Macedonia). According to the Law of Joint Stock Companies from 1896, were established agricultural credit cooperatives. However, in the case of personal bonding bank loan, as it is said, agrarians received credit in an indirect way.[20] The need to submit a land survey additionally complicated the position of the peasantry in obtaining loans. As the scope of the Serbian law was drafted cadastre[21] and land registry did not exist, the mentioned request was an additional aggravating factor for the rural population to credit approval.

Agricultural credit cooperatives before the First World War were the only institutions in Serbia to credit the agrarians. During the First World War, Serbia deteriorated in many fronts. After the war once again the agricultural credit cooperatives started to function.

However, rebuilt of credit cooperative unions was slower compared to providing ones. The previous provisions for the preparation of agrarian reform[22] as defined in the abolition of the feudal agrarian relations in the southern regions, which were freed from Turkish rule in the Balkan wars, and the country was supposed to be granted to the natives and settlers. Land reform measures were applied slowly so the peasants in these areas although freed of serfs lost their land. Then, an additional unfavourable fact was that the cooperative movement was used for political purposes. Mihajlo Avramović after leaving the Agrarian Party in 1922, which he founded, was talking about how shocked he was when he realized that in the party meetings he attends he was seeing clerk, restaurant owner, village merchants, usurers,

18 According to regulations of Kingdom of SHS, new Bonding law was supposed to start its implementation a year after his admittance, therefore the risk of bankruptcy of those banks that illegally held peasantry bonds, occurred.

19 Gnjatović, D. (2010): Poljoprivredni kredit u vreme stvaranja Kraljevine SHS na području važenja srpskih zakona, Bankarstvo, no. 5-6, p. 12.

20 Passive bonding ability was deducted from the peasantry by the Trading Law from 1860.

21 Cadastral surveys across areas covered with Serbian laws existed only in big cities, and after 1920.

22 The previous provisions for the preparation of agrarian reform, Gazette, 11th edition, 1919.

intellectuals without any connection to the peasantry.[23]

The establishment of the State Agricultural Bank

Minister of the Agriculture and Water in the Kingdom of SHS for a period of 17 May in 1920 to 26th March of 1921, was dr Velizar Jankovic. In closer economic history he remained remembered for proposing the establishment of the government agency that is supposed to be specialized in agricultural credit. The project has achieved only by forming the Privileged Agrarian Bank (1929).

After examining the current situation of agricultural loans immediately after the national reunification in 1918, dr Jankovic was able to conclude that only in the scope of the Austro-Hungarian legislation exist well developed system of institutions that provides relatively cheap credits for agrarians, while in the scope of the Serbian law, agrarians were left on their own. He felt that this area was unrealistic to rely solely on the recovery of agricultural credit cooperatives because they would not be able to meet the needs of agricultural credit, even with a possible broader financial support from the state. For all these reasons, dr Jankovic on 31st December of 1920 submitted a proposal to the Council of Ministers of the Kingdom of SHS to establish a state agricultural bank with the main task of direct supplying of the agricultural credit to affect with the war areas.[24] Otherwise, he warned, the peasantry in areas affected by the war again, will have to borrow from moneylenders and usurious banks.[25]

Velizar Jankovic had the idea that the Administration funds form a separate Directorate of farmer loans, which would realize the crediting, until achievement of more benefit circumstances for the formation of a separate agricultural bank with a state character. His suggestion was that the initial capital of the Directorate to be 100 million and that each year the capital subsidizes 20 million from the budget and two-thirds of the income of the State Lottery.[26] At the meeting held on 25th March of 1921, the Ministerial Council of the Kingdom of Serbs accept proposed project of dr Jankovic to form Directorate for agrarian credit, that will be subordinated under the Fund's Board, as a bridge to create a strong state banks to finance agriculture, and ruled that this project translate into regulation of the agricultural credit.[27] All this suggests that in the new Kingdom will be long-term policy of agricultural development. Since the adoption of the Regulation on the agricultural credit in 1921 until the establishment of the Privileged Agrarian Bank in 1929 in the Kingdom were changed seventeen governments and seven ministers of agriculture. The issue of regulation of agricultural credit has been addressed by one government to another, and the ministers

23 Jovanović, D. (1987): Mihailo Avramović, Seljak – svoj čovek, Izbor tekstova Dragoljuba Jovanovića, priredili Nadežda Jovanović, Momčilo Isić, Beograd, str. 296.

24 Janković, V. (1921): Pismo ministarskom savetu od 31. decembra 1920, Službene novine, br. 74.

25 Gnjatović, D. (2010): Projekat dr Velizara Jankovića o osnivanju državne zemljoradničke banke, Bankarstvo, no. 9-10, Beograd, str. 20.

26 Ibid, p. 22.

27 Ibid, p. 23.

of agriculture were all out with suggestions on how to resolve this issue.[28] Of course, the critics of project proposal of dr Jankovic ensued. They were usually derived to the fact that the priority was given to the bureaucratic allocation of state capital, which was intended for agricultural lending, rather than to use the existing cooperative systems across the country as a network for supplying government loans to agrarians.[29] However, if there was an organized system of agricultural credit cooperatives at the entire territory of the Kingdom, criticism of the project could make sense. As in the territory of the existing Serbian law such organized system didn't exist, it was obvious that critics were not justified, and thus, ministers proposals to use existing cooperatives for credit supply for rural population of the state, weren't accepted.

Krsta Miletic, Minister of Agriculture in 1924 was the first one that presented the fact that all agrarians in the new Kingdom must be treated in the same level conditions when taking loans. Fundamental change that would allow all possessors of the country in Serbia, Montenegro and southern regions to invest in long-term agricultural development, was related to the fact that the Serbian small owners could get the mortgage for the half of theirs estate (as well as the territory of the Austro-Hungarian legislation).

However, the government was of the opinion that the mortgage loans of one future state bank should open the question of survival of protected land minimum institution. Contrary to the law of the five days of plowing in 1873, i.e. Article 471 in the Law of the court in civil cases the Kingdom of Serbia, the Ministerial Council rejected the proposal of the Agricultural Bank, and not submitted to the National Assembly for consideration.[30]

To somehow suppress criticism of the project of dr Jankovic, Royal government in 1925 gave the proposal[31] to the National Assembly: first, that the cooperative system gave the best solutions in Europe, as a basis for lending to agriculture and secondly, that the cooperative system, which exist within the existing Serbian law of the Kingdom of Serbs, Croats and Slovenes, was not adequately organized or developed, and that could be a mediator of future Directorate for finance funding generation for agrarians credit. First of all, in the areas of earlier Serbia, the state was supposed to help finance agriculture, and dr Stojkovic made the proposal to establish a system of state agricultural credit cooperatives that would operate together with the Directorate of farmer credit. Each municipality would be established by a cooperative meat entering modest share of the local inhabitants, and more local cooperatives could form a local cooperative; The Directorate for agrarian credit would grant cheap loans to those agrarian cooperatives, at a price lower than the discount rate of the Privileged National Bank of the Kingdom of SHS, for thus, the cooperative would come to the capital to lend their

28 Ustavi i vlade Kneževine Srbije, Kraljevine Srbije, Kraljevine SHS i Kraljevine Jugoslavije (1835-1941), Beograd, 1988 (Ustavi i Vlade), unauthorized editions.

29 Petrović, J. (1930): Okućje ili zaštita zemljoradničkog minimuma, Beograd, p. 158.

30 Petrović, J. (1930): Okućje ili zaštita zemljoradničkog minimuma, Beograd, p.158.

31 The creator of the proposal was executive member of Ministry for Agriculture of that time, dr Velimir Stojković

members under conditions that would have the character of state assistance.[32]

According to dr Stojkovic, existing agricultural credit cooperatives, could use inexpensive capital of agrarian credit Directorate, if they would become part of a unique lending system to agricultural land. In this way, there was a chance to form and implement unique credit policy towards agriculture.

As already mentioned, Velizar Jankovic made the proposal for the establishment of the agrarian credit Directorate, which was accepted by Velimir Stojkovic, considering that the Directorate should operate as a standalone financial institution and not within a state bank.

The original idea of dr Jankovic at which the agrarian credit Directorate should function primarily as part of the Treasury until the moment of Directorate expansion of hers coverage area, and job development, and then as an independent state agricultural bank, in the meantime proved to be irrational. Reform of the Treasury to the State Mortgage Bank in 1922 was not affected by the growing interest of the financial institution for lending to agriculture.[33]

In June of 1925, the Parliament adopted the Law on Agricultural Credit. The law provides local and provincial co-operatives in charge of agricultural credit, which had been run by the Department for agricultural credit. The law[34] stipulated that local residents establish local cooperative parties.[35] The county cooperative was able to establish a minimum participation of 20 local cooperatives.[36] In addition, the Act provided an interest rate of 4% of the maximum short-term and medium-term loans.

Just in 1927 the Department of Agriculture loan began with its work. With the establishment of the directorate was delayed because all cooperative associations in the country were against it. The fear of losing the competitive battle against cheap state credit, the representatives of the cooperative unions in public represented this delay as the fear of etatisation of already developed private credit cooperatives in the country. Why, however, eased the pressure existing cooperative battles against the Establishment of the agricultural loan, explained dr Velimir Stojkovic in an article in October the 5th of 1927, published by the Commercial Gazette .[37] The best response toward agrarian state loan was within the rural population of Serbia, and at least among the Slovenes.

Seven years after it was made public, the project for establishment of a strong financial institution that will support the development of the state capital key economic sectors in the

32 Gnjatović, D. (2010): Projekat dr Velizara Jankovića o osnivanju državne zemljoradničke banke, Bankarstvo, no. 9-10, Beograd, str. 30.

33 Ibid, p. 32.

34 Clause 2, of the Law on Agricultural Credit.

35 Local cooperative party had to have a minimum of 20 members.

36 Clause 26, of the Law on Agricultural Credit.

37 Gnjatović, D. (2010): Projekat dr Velizara Jankovića o osnivanju državne zemljoradničke banke, Bankarstvo, no. 9-10, Beograd, str. 34.

Kingdom, proposed by dr Velizara Jankovića finally began to realize. Short-term, successful two-year work of agrarian credit Directorate, confirmed that the state mechanism of cheap loans was indeed in dire need of agrarians, most of those in Serbia. At the same time it was shown that in all parts of the country there were agrarians who have found an interest to join in accordance with the Agricultural Credit Law.[38]

Privileged Agrarian Bank with its foundation in 1929 took over the duties of the agrarian credit Directorate, and the local and provincial unions suddenly left without the institution which supplied the state capital. Positive in this process was the fact that the job of local and country co-operatives did not depend only upon the state and they soon became independent in general. After the liquidation of the agrarian credit Directorate, the General cooperatives for agricultural loan were established and at the same time represented the link between local and provincial unions, and were their central institution.

The position of agriculture during the Great economic depression and the establishment of the Privileged Agrarian Bank

The characteristic of the post-war period (World War I) was neglecting improvement of techniques in agriculture in our country. Australia, Canada and the United States were able to dominate the competition over Europe in terms of agriculture only by lowering the cost of production and prices of agricultural products. However, overseas countries have started to over produce and export agricultural products, in amounts than their own market, and foreign one, could accept. In this way they created too much supply of products and the prices of agricultural products suddenly started falling. Overproduction of agricultural products and, later, industrial, led to a major crisis of agriculture in the global market and the global economic crisis.

The beginning of agrarian crisis in the Kingdom of SHS appeared in 1926, and was initialized with the fall in prices of agricultural products. The crisis reached its peak in 1929, and lasts up until 1933, respectively in 1934. For example, since 1929 until 1933, the price of maize in the country fell by 50%, and in 1929 until 1934 year, wheat prices fell by 55%. Other plant products price had fall nearly as much.[39] Then, a decline in the purchasing power of the population which practically depended upon agricultural production, occurred. Yugoslavia was among those agricultural countries[40] where the crisis impact very negatively on the national income.

The fall in prices of agricultural products and the purchasing power of the population hit extremely difficult peasants, who already were heavily in debt.

While still in the period 1926-1928 crises was looming, there was the disparity between the purchasing power of agrarians and their financial obligations that have been concluded earlier under difficult conditions. In a time of crisis this disparity was so grown that the agricultural

38 Ibid, p. 36.

39 Vučo, N. (1958): Poljoprivreda Jugoslavije 1918-1941, Belgrade, p. 78.

40 USA and Romania found themselves into worse agriculture position.

debtors began to be threatening with mass bankruptcy. For example, a borrower who is in 1927 concluded some loan in 1933 to 1934, had to give back twice as more in plant and livestock, or 30% more of industrial, or 40% more of mixed products, as they were at the time of the conclusion of the loan could be bought for a borrowed money.[41]

With the falling of the prices of the primary products on the world market, it was necessary to export more to get the same income as before. Than in period between 1925 until 1930 the Kingdom of Serbs, the Kingdom of Yugoslavia, has managed to export a quantity of 4,000 to 5,000 tons of agricultural, forestry and mining on year basis, though, compared to in 1925 year, the value of exports in 1930 was reduced by a quarter.[42] Until 1934, export revenues declined in our country, after that year revenue grew annually.[43]

Since the agricultural population still increased its debt to loan sharks, the problem of over-indebtedness becomes a political and social, not just economic one. The agricultural debt problem, the state was trying to solve with foundation of the Privileged Agrarian Bank of the Kingdom of Yugoslavia. The law of Agricultural Bank of 16 April in 1929 sets out that the Bank is a semi-governmental financial institution of equity type.[44] The bank was founded in order to support agriculture by providing short and long-term loans to farmers and agricultural cooperatives and organizations.[45] Short-term loans were given to the agricultural organizations by discounting of bills and on the pledge of agricultural products, and long-term loans had pledge upon real-estate property; for purchase of a land, foundation of agrarian buildings, conducting land improvement and for the conversion of debt that farmers had in private banks or persons.[46]

Liquidation of agricultural debts

Privileged Agrarian Bank was established under very unfavourable conditions. The bank has successfully worked, only to the middle on 1931 year, due to the transfer of general crisis to the banking system. The effect of Agrarian Bank remained pale in comparison to the scale of the problem of over-indebtedness of peasants. At this point, the peasant debts have reached the sum of seven billion, which at the time of the agricultural prosperity was tolerable burden on agriculture. At the time of the sudden weakening of purchasing power of peasants, however, this was an intolerable burden.[47]After a few years of the Bank, the structure of agrarian debt

41 Nedeljković, M. (1936): Problem dugova u današnjoj privredi, Privredni letopis zadužbine Nikole Spasića, knjiga I, Beograd, 1936, str. 231.

42 Statistics on outside merchantry of Kingdom of Yugoslavia 1932, Belgrade, 1933; Statistics on outside merchantry of Kingdom of Yugoslavia 1939, Belgrade, 1940.

43 Nevertheless to the mild revenue incensement, they still couldn't reach the same level they had before the general crisis.

44 Lombardovanje akcija Privilegovane agrarne banke, Politika, Beograd (izdanje za 19.6. 1929).

45 Upis akcija Privilegovane agrarne banke, Politika, Beograd (izdanje za 2.6.1929).

46 Zakon o Privilegovanoj Agrarnoj banci (1929), Službene novine, br. 84.

47 Gnjatović, D. (1991): Stari državni dugovi, Ekonomski institut, Jugoslovenski pregled, Beograd, 1991, str. 164.

was still unfavourable to creditors for failing to convert[48] most debts, and the government had to act. In the 1932 of all total financial liabilities, peasants owed to private individuals even 45.17%, to private financial institutions 32.18%, 12.54% to cooperatives and to Mortgage and Agrarian bank only 10.11%".[49]

The law of the Protection of agrarians was created 1932, which helped to postpone all public sales of real estate and movable assets of agrarians, which have already started, while new sales were not permitted. All payments agrarians had to make were delayed, as well. It was decided that these measures are in effect until a final decision of conversion of agrarians' debts, and the maximum rate of interest on delayed claims is fixed at 6%.[50] Moratorium although thought of as a temporary measure in reality lasted over four years. Indebtedness of agrarians still was a burning issue, even though many regulations on debt repayment were amended. The crisis has blocked the entire agriculture. Since the problem of agrarian debt threatened the economic and social development of the country, it appears that the liquidation of agrarians' debts was inevitable.

Regulation on the liquidation of debts of agrarians, which was enacted in September of 1936, regulates the issue of the debt. All agrarians - debtors, whose debt amounted up to 25.000 of dinars, had the debt cut in half.[51] When it comes to borrowers with more than 25.000 of dinars, district courts were deciding of measures to be taken. For them, the percentage of debt ranged between 30% and 50% of total debt.

When they were in the private banks and cooperatives, their claims have been transferred to the Privileged Agrarian Bank. Private individuals have had to write off half of their claims.

In the foreground, the question arises of compensation of private banks and cooperatives by the Privileged Agrarian Bank. The bank was supposed to pay out 50% of their claims during the next 14 years in equal instalments, and 25% had to be paid in state or 3% bonds, for a period of 20 years. The remaining 25% of the claims had to be cancelled. In order to enable privileged agrarian bank to reach 25% of the compensation of private banks and cooperatives, the state at the end in 1936, issued bonds for the liquidation of debts of agrarians in the nominal amount of 500 million of dinars, with the enablement of the Regulation on the liquidation of agrarian debts that the final amount of the bond issue can be more than 900 million. Bonds had interest rate up to 3%, and the deadline for payment was 20 years.[52] This kind of bonds, Privileged Agrarian Bank issued to cooperatives and private banks, while the government in 1937 began to pay off debt towards them. Of course, at the expense of the state

48 Debt conversion meant assignment of long term loans to peasantry which already had burden of debt, and which were supposed to be used for payment of the basic dept to private bank or other party, and to Agrarian bank peasant would repay the loan under better circumstances than other offered.

49 Vučo, N. (1958): Agrarna kriza u Jugoslaviji 1930-1934, Belgrade, p. 208.

50 Ibid, p. 204.

51 Zakon o privilegovanoj agrarnoj banci, Politika, Beograd, (izdanje za 19.4.1929).

52 Ibid, p. 208.

budget fell bond repayment costs for the liquidation of agricultural debts. The state, in this way, the liquidation of one part of agricultural debts and with new adequate repayment terms of the rest of the debt, relatively well coped with the problem of agricultural indebtedness. Buying and purchasing power of the peasantry after VEK's could, in this manner, to file the burden of debt repayment. At the end of the third decade of the 20th century there was a stabilization of prices of agricultural products.

Conclusion

In Serbia, since the second half of the 19th century to the early 20th century, came to the fragmentation of the Loan capital in a way that they formed a small provincial bank type. In Europe at the time, went opposite concentration of capital. One important reason for this situation in the banking sector in Serbia was the inability to use the bill securities, i.e. denial of passive bond ability of the peasantry. Of course, this measure originated in Serbia earlier when in the country were no banks or regulated credit system and usury reigned. With unification of Serbs, Croats and Slovenes in the new community remains a ban that agrarians produce, transmit and receive bonds. Contrary to the position of agrarians in the territory of the former Kingdom of Serbia, agrarians from the provinces of Austria-Hungary, which joined the new state, did not have these problems. The adoption of the privileged Agrarian Bank in 1929, abolished the provision that the agrarians are unable to legally use the bonds as a legal tender, and creates favourable conditions for solving the agrarian question.

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PROBLEM POLJOPRIVREDNOG KREDITA U JUGOSLAVIJI IZMEĐU DVA SVETSKA RATA

Snežana Krstić[53], Milan Mihajlović [54], Miloš Dašić[55]

Abstrakt

Posle prvog svetskog rata agrarni problem i organizacija poljoprivrednog kredita u novoformiranoj Kraljevini SHS izbili su u prvi plan. Problem dostupnosti zemljoradničkog kredita, još od pre Prvog svetskog rata, samo je prolongiran stvaranjem nove države. Umesto ukrupnjavanja kapitala, što je bila odlika zapadnoevropskih zemalja, nastavilo se sa osnivanjem sitnih banaka i procesom usitnjavanja kapitala. Tek donošenjem Zakoana o Privilegovanoj agrarnoj banci 1929. godine, počelo se sa rešavanjem agrarnog pitanja. Naime, formiranjem jedne državne banke, koja će imati veći kapital i davati kredite zemljoradnicima sa nižom kamatom, počeo se rešavati problem koji je opterećivao zemljoradnike u 19. veku.

Ključne reči: *zelenaši, poljoprivredni kredit, seljačka menica, Privilegovana agrarna banka.*

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Review Article

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APPLICATION OF DEA METHODOLOGY IN MEASURING EFFICIENCY IN THE BANKING SECTOR[1]

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Summary

The most important aspect of any business is efficiency. The goal is to achieve greater outputs with lower inputs, or to use the available inputs to the maximum. In this paper, the use of DEA technique will be illustrated in case of measuring operation efficiency of the banking sector in Serbia, which currently has 33 banks. The efficiency of banks will be measured using two models with different input-output indicators, followed by a comparative analysis of the results using the BCG matrix. Banks are ranked according to their efficiency, and the similarities and differences that were observed in the study were commented.

Key words**:** *Banks, DEA, business efficiency, super efficiency, BCG matrix.*

JEL: *C67, D61, G21*

Introduction

The global economic crisis has hit hard the Serbian economy and its effects are visible in the banking sector. Banks in Serbia are in very restrictive conditions set by the National Bank of Serbia, in the conditions of strong competition, along with the processes of reform and privatization of their clients. Important changes in the banking sector were enabled by the adoption of the new Law on banks in November 2005. Its full implementation began on 1 October 2007. The new law outlines procedures for strict control of banking, based on the same or similar parameters for consolidation (Mihajlović et al., 2009).

Numerous authors have dealt with the examination of efficiency of the banking sector by applying different methods in different locations. Given the different approaches and goals,

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authors have used a variety of indicators in their research that have monitored the efficiency of banking sector. However, successful analysis of business requires multi criteria comparative analysis of business performance, so the usage of some of the appropriate parametric or nonparametric methods is recommended. For evaluation of relative efficiency, frequently the nonparametric method DEA (*Data Envelopment Analysis*) is used.

Mohamed (2006) has systematized the numerous approaches in researches of business efficiency of banks in the world using the DEA technique. He has stated that Wu et al. (2006) observed in Canada 142 banks, and monitored the number of employees and costs for input indicators, while for output the following was observed: deposit, income and bank loans. He has further stated that Sakar (2006) in Turkey analysed 11 banks and monitored: input – branch numbers, employees per branch, assets, loans, deposits, and outputs: ROA (return on assets), ROE (return on equity), and interest income (assets), interest income (operating income), and non-interest income (assets). Then in 2002, Mukherjee et al., in India, monitored and analysed 68 banking operations, where the input was: net worth, borrowings, operating expenses, employees, number of branches, and outputs: deposits, net profit, deposit, non-interest income, interest income. Authors Howland and Rowse (2006) observed 162 banks in Canada, where the observed input indicators included: non-sales FTE, sales FTE, the size, the city, the employment rate, and three output indicators: deposits, loans, the average number of products /customers, client loyalty. He also presented in detail many other researches around the world in the aforementioned study (Mohamed, 2006).

On the other hand Milind (2003) carried out the banks efficiency analysis in India on the basis of two models (model A inputs are: interest expenses, non-interest expenses, and outputs: net interest income, net non-interest income, and model B inputs are: deposits, employees, and outputs: net loans, non-interest income).

Authors Fries and Taci (2004) compare the performance of 289 banks in 15 post-communist countries, using an intermediate approach. The results show that foreign banks are more competitive and have better results in cost efficiency than domestic banks. Also, research carried out in Poland by the author Guzowska et al. (2004) shows that better results are obtained if the banks are divided into two groups, domestic and foreign.

In surrounding countries, one of the first studies to appear was the comparison of bank efficiency in Croatia during the transition period from 1995 to 2000 (Jermić, Vujčić, 2002). Trend efficiency ratio was positive, thanks to changes in the ownership structure. At the beginning of the period there was one foreign and 53 domestic banks and in the end there were 20 foreign and 20 national banks.

In Serbia, the first research in this field, using the DEA method, was conducted by Bulajić et al. (2011) and (2011). In this research 30 banks were monitored and their observed indicators were: input – measurement for operational costs engaging capital, measurement for the cost of available capital, measurement of overall risk exposures, and asset value for January 1st in observed year, employees, number of affiliates and bank branches. Considered outputs were: the value of total assets on December 31st in observed year (total assets at beginning of year

plus profit/loss) as a measurement of business performance, total revenues in the period of a year, interest income.

Following the example of Milind Sathye's research (2003), in the present analysis the same input and output indicators will also be used for the purpose of bank ranking in Serbia. Currently, in Serbia 33 banks operate. The goal is to determine which one is the most efficient. Nineteen out of 33 observed banks belong to the private sector. Data were taken from the balance sheets and income statements of banks from the website of the National Bank of Serbia for 2010[5]. According to these data, the highest share of total assets from the balance sheet has Banca Intesa in the amount of 357.163.979.000 dinars, while the lowest share has the Moskovska Bank (3.127.165.000 dinars), because this bank started operation in 2008.

The restructuring process and implementation of reforms led to significant differences in the number of banks that operate since 2003 until today. In fact, at the end of 2003 there were 47 banks, at the end of 2004 - 43 banks were operating, and 40 banks at the end of 2005. Today, there are 33 operating banks. These changes occurred as the result of privatization and bank mergers.

Before taxation in 2010, bank with the largest profit was Banca Intesa (8.5 billion dinars), then AIK Bank Nis (6.2 billion dinars) and Unicredit Bank (3.9 billion dinars). The highest loss had OTP Bank (2.5 billion dinars) and Alpha Bank (1.7 billion dinars).

The largest bank was the Banca Intesa, followed by the Komercijalna Bank, and the largest improvement in ranking list of ten largest banks was recorded for EuroBank EFG[6].

The basics of data envelopment analysis

DEA is specially designed technique for measuring of the efficiency of complex entities with diverse inputs and outputs. Increasingly it is being used for evaluation and improvement the operation of numerous business entities[7], and its use is expanded on evaluation the efficiency of schools, hospitals, bank branches, production facilities, etc. The analysis provides results based on which we can determine how much are some units inefficient compared to efficient units. In this way, it is possible to determine also how much is necessary to reduce the input and/or to increase the output of unit to become efficient. All of these units are called DMU (*Decision Making Unit*). For each inefficient DMU, DEA identifies a set of corresponding efficient units that can be used as indicators for improvement.

DEA provides the construction of linear approximation of efficiency limit that is obtained on the bases of available units. Thus, we observe a set of points and construct the line that wraps them (*envelope*) and that actually represents the limit of efficiency. That limit is the

5 Available at: http://www.nbs.rs/internet/cirilica/50/index.html

6 Available at: http://www.naslovi.net/2011-04-19/beta/dobitak-banka-2010-veci-za-27-odsto/2485562

7 Available at: http://www.decisionsciences.org/decisionline/vol31/31_3/31_3pom.pdf, accessed, June 2011.

maximum of outputs that each decision making unit can achieve with their inputs, and for ineffective units it represents the envelope. There are two approaches:

- wrapping the input from below (the output is achievable with less input),
- wrapping the output from top (with the given input it is possible to produce more output).

This powerful tool can handle multiple inputs and outputs, with no requirements that these inputs and outputs are related (they can be heterogeneous), and one additional positive side of this method is the possibility of mutual comparison of DMUs. Like all techniques, it also has its deficiencies. DEA is suitable for comparison of relative efficiency of DMUs, so it performs mutual comparison of DMUs, but not their comparison with the "theoretical maximum". Due to the standard formulation, DEA makes a special linear program for each DMU[8]. DEA also allows the improvement of inefficient inputs and outputs in order to become efficient. It should be noted that DEA is primarily a diagnostic tool and it doesn't transform the inefficient units to efficient[9].

Basic DEA models

Over the last 30 years, the field of usage of DEA method has been extensively updated. The basic idea for development of DEA method is to enable the efficiency measurement in non-profit sector (education) where there are no exact financial measures. Later, DEA method was applied also in the profit sector. Numerous applications have caused the development of new methods and models, but in this paper, for the purpose of understanding the basics of DEA method, CCR (*Charnes, Cooper and Rhodes*), BCC (*Banker, Charns and Cooper*) and AP (*Andersen Petersen*) model are presented. In the CCR model the boundary includes the linear combination of existing DMUs, while in BCC model this border has convex shape[10].

Andersen and Petersen (1993) proposed ranking model, i.e. measuring of so called super-efficiency (AP model). Using this model, the unit that is examined is not being considered allowing other DMUs to achieve efficiency greater than 1, which allows the ranking of efficient and inefficient units[11]. Specifically, this model shows how much the unit can "get worse" but still be efficient. Those so called superefficient units are those with efficiency of over 100%, and the most efficient is the one which is highest ranked. The units with efficiency less than 100% are inefficient and therefore ranked lower. AP model can be defined using the mathematical expression:

8 Available at: http://mat.gsia.cmu.edu/classes/QUANT/NOTES/chap12.pdf, accessed June 2011.

9 Available at: http://www.decisionsciences.org/decisionline/vol31/31_3/31_3pom.pdf, accessed June 2011.

10 Available at: http://as.nida.ac.th/ornet/conf04/OR-CRN_lecture/sowanee.pdf, accessed August 2011.

11 Available at: http://www.decisionsciences.org/decisionline/vol31/31_3/31_3pom.pdf, accessed June 2011.

$$(Max)h_k = \sum_{r=1}^{s} \mu_r y_{rk} \quad (1)$$

With limitations:

$$\sum_{i=1}^{m} v_i x_{ik} = 1 \quad (2)$$

$$\sum_{r=1}^{s} \mu_r y_{rj} - \sum_{i=1}^{m} v_i x_{ij} \leq 0, \quad j = 1, 2, \ldots, n \quad j \neq k \quad (3)$$

$$\mu_r \geq \varepsilon, \quad r = 1, 2, \ldots, s \quad (4)$$

$$v_i \geq \varepsilon, \quad i = 1, 2, \ldots, m \quad (5)$$

The optimal values of efficiency scores h_k are obtained by solving the linear model (1)-(5) k-times (once for each DMU in order to compare it with other DMUs). Efficiency score h_k is greater or equal to 1 for all efficient units and smaller than 1 for inefficient units. In this way, ranking of units, according to their efficiency, is enabled. The smaller the value of efficiency score h_k, the less efficient is the unit.

Given that the results of DEA model are significantly determined by the input-output indicators and even the minor change is reflected in the end result, in this paper two models (sets of indicators) are considered. That is, of all the mentioned indicators two models are designed (A and B) to be independently considered and developed (Table 1).

Evaluation the efficiency of banks in Serbia

Banks are assessed in two aspects, i.e. two models (model A and model B). The purpose of the first model is to define how much interest and non-interest expenses should be reduced so the bank can achieve the highest interest, i.e. non-interest income. On the other hand (model B), the bank employment aspect is observed, but also deposits that affect the output, i.e. increasing operating income and loans and deposit. Determination the total efficiency of bank through these two models refers to reduction of the inputs in order to achieve higher output, i.e. income.

Table 1. Input and output indicators of used models

Model A		Model B	
Input	**Output**	**Input**	**Output**
- interest expenses - non-interest expenses	- interest income - net non-interest income	- deposits - employees	- loans and deposit - operating income

Besides, the purpose of this analysis, beside the evaluation the efficiency, is bank ranking using both operating criteria. Thus, we are applying the Andersen-Petersen model, assuming the constant return to scale. Given the different size of banks, we assume that hypothesis of variable return to scale would be more appropriate for this kind of research, but it is known from the literature that the solution of the AP model with the hypothesis of variable return to scale is unstable. Since the hypothesis of constant return to scale is stricter, the results are

relevant. If there is a request of comparison of banks by groups, by size of assets, then it's necessary to perform additional analyses using the BCC model.

Data are mathematically processed using software EMS (*Efficiency Measurement System*)[12]. During analysis we concluded that there were *out layers*, i.e. units that had very large scores, thus are excluded from further consideration. For model A the out layers are: Jugobank, Postanska Stedionica and Dunav Bank. For model B these units are: Jugobank, Marfin Bank and AIK Bank. Excluding the out layers the following results were obtained (Table 2).

Table 2. The results of models A and B

DMU	Model A		DMU	Model B	
	Score (%)	Rank		Score (%)	Rank
Jugoslovenska Bank	155.05	1	Dunav Bank	174.60	1
AIK Bank	154.34	2	Volksbank	140.47	2
Volksbank	122.94	3	ProCredit Bank	121.23	3
Crédit Agricole	119.42	4	Poljoprivredna Bank	115.00	4
Banca Intesa	113.07	5	Piraeus Bank	99.87	5
Société Générale	104.90	6	Raiffeisen Bank	99.47	6
Raiffeisen Bank	103.29	7	Hypo Alpe-Adria	98.57	7
Komercijalna Bank	88.88	8	Société Générale	92.76	8
Eurobank EFG	88.28	9	Unicredit Bank	92.67	9
Erste Bank	87.69	10	Opportunity Bank	91.46	10
Unicredit Bank	87.27	11	Vojvodjanska Bank	90.55	11
Marfin Bank	87.08	12	OTP Bank	89.64	12
Cacanska Bank	86.45	13	Eurobank EFG	85.50	13
Poljoprivredna Bank	86.28	14	Jugoslovenska Bank	83.38	14
OTP Bank	85.86	15	Banca Intesa	81.23	15
Credy Bank	84.64	16	Poštanska Stedionica	79.59	16
Srpska Bank	82.98	17	Privredna Bank	75.76	17
Razvojna Bank Voj.	81.13	18	Findomestic Bank	75.05	18
ProCredit Bank	77.87	19	NLB Bank	61.34	19
Univerzal Bank	77.64	20	Erste Bank	56.41	20
Hypo Alpe-Adria	77.41	21	KBC Bank	56.40	21
KBC Bank	74.74	22	Crédit Agricole	53.30	22
Findomestic Bank	74.61	23	Cacanska Bank	51.43	23
NLB Bank	74.57	24	Razvojna Bank Voj.	48.35	24
Vojvodjanska Bank	61.80	25	Srpska Bank	48.26	25
Moskovska Bank	60.47	26	Komercijalna Bank	41.44	26
Piraeus Bank	59.45	27	Moskovska Bank	39.23	27
Opportunity Bank	59.03	28	Alpha Bank	38.42	28
Privredna Bank	55.88	29	Credy Bank	35.52	29
Alpha Bank	51.71	30	Univerzal Bank	31.08	30

Source: Authors calculated this data from defined indicators the balance sheets and income statements of banks in Republic of Serbia;

12 Available at: http://www.wiwi.uni-jena.de/Mikro/pdf/ems.pdf

The table above shows that Jugoslovenska Bank is at the first position with super efficiency 155.05%. This bank has small investments compared to other DMUs, while the outputs are slightly higher. This is a benchmark for other 4 banks. The greatest importance is attached to interest expenses, for inputs, and interest income for outputs. In second place is AIK Bank with super efficiency 154.34%. Next ranked is Volksbank, followed by Crédit Agricole and Banca Intesa.

Penultimate is Privredna Bank, a bank of a public sector with low inputs as well as outputs. The last place takes Alpha Bank with efficiency of 51.71%.

According the results of DMUs analysis of model B (Table 2), Dunav Bank takes first place, with super efficiency 174.60%. The reason for this is low inputs. Majority share of the equity of the Dunav Bank has the company "Dunav osiguranje" (Danube Insurance) a.d.o. Belgrade[13], so it is clear why this bank has low investments. This bank represents the benchmark to other 9 banks. The greatest importance is assigned to deposits (100%) as input, while for output the operating income (importance 1.75).

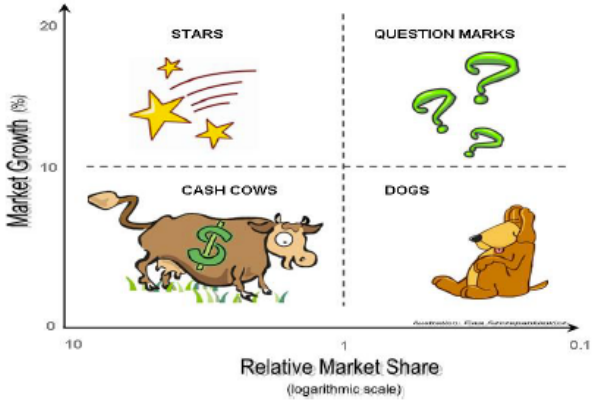
The other three banks that are also superefficient are Volksbank (140.47%, the benchmark to other 25 banks), ProCredit Bank (121.23%, the benchmark to other 17 banks) and Poljoprivredna Bank (115.00%, the benchmark to 9 banks).

The last place takes Univerzal Bank, with efficiency of only 31.08%. This bank has large investment, but low output, which causes the inefficiency of this unit. The benchmarks for this unit are Eurobank EFG and Volksbank.

Comparative analysis of models

In order to visually show the efficiency of banks using both models (A and B), comparative analysis was performed using the BCG (*Boston Consulting Group*) matrix (Figure 1):

Figure 1. BCG matrix



Source: Illustration of BCG matrix taken from website http://mfiles.pl/en/index.php/BCG_growth-share_matrix

13 Available at: http://www.nbs.rs/internet/cirilica/50/index.html, Accessed June-August, 2011.

This is a chart created by Bruce Henderson, whose goal was to help the corporation to analyse the operations of its business units or product lines[14]. The purpose of this matrix is:

- to provide a simple, clear view of the entire current portfolio of the company to the strategist,
- it allows making useful decisions about growth strategy, and eventual elimination of unprofitable parts[15].

The chart is divided into four parts:

- *Stars* – is well placed product with large share on a rapidly growing market, and represents holders of development. Requires large investments in order to maintain that position. If they keep the market share and the market growth slows down, Stars will become Cash Cows. Stars provide the opportunity for quick, loud progress, but not the money.
- *Cash cows* – are units with large market share and slow market growth, these are mature business, the sources of cash. They require much less investment than Stars, but they still need the attention in order to provide the company the constant cash flow. Cash Cows finance everything else, including rising Stars, which will also become Cash Cows, when time comes.
- *Question Marks* – is a problematical area. These units have small share on a rapidly growing market. Their progress requires a serious investment. Question Marks probably have a potential, but the biggest question is whether it pays off to the company to invest into these units.
- *Dogs* – are units that barely manage to remain at zero. They have a small share on the market that barely grows, or that is getting smaller (shrinking). The most common decision made when it comes to the Dogs is to put them to sleep.

The overall objective of this ranking is to help the corporations' analysts to decide which of their units to finance and how much, and which to sell[16]. In table 3 are represented the efficiency indexes and bank ranks from both analysed business aspects. These results were used to form a modified BCG matrix (Figure 2).

Modified BCG matrix (values on the abscissa are arranged from the smallest to the largest in order to provide more logical review of the banks' efficiency) is shown in Figure 2. On the abscissa, the potential values of the efficiency of model A are illustrated, while the ordinate shows values obtained by the solution of model B.

14 Available at: http://en.wikipedia.org/wiki/Growth-share_matrix, accessed August, 2011 and http://en.wikipedia.org/wiki/Data_envelopment_analysis, accessed June 2011.

15 Available at: http://thinkserbia.wordpress.com/2008/12/12/bcg-matrica-osnove-strategije-proizvodnog-portfolija/, accessed August 2011.

16 Available at: http://en.wikipedia.org/wiki/Growth-share_matrix, accessed August 2011.

Table 3. Comparative analysis of models A and B

No.	DMU	Model A	Rank	Model B	Rank
1	Alpha	0.52	27	0.38	25
2	Cacanska Bank	0.90	9	0.51	20
3	Crédit Agricole	1.19	4	0.55	19
4	Credy Bank	0.85	16	0.37	26
5	Erste Bank	0.88	11	0.57	17
6	Eurobank EFG	0.91	8	1.12	4
7	Findomestic	0.75	21	0.78	14
8	Hypo Alpe-Adria	0.86	13	0.99	7
9	Banca Intesa	1.17	5	0.94	8
10	Jugoslovenska Bank	1.55	1	0.85	13
11	KBC Bank	0.75	20	0.56	18
12	Komercijalna Bank	0.89	10	0.47	23
13	Moskovska Bank	0.60	24	0.39	24
14	NLB Bank	0.76	19	0.62	16
15	Opportunity Bank	0.59	26	1.20	3
16	OTP Bank	0.86	14	0.92	11
17	Piraeus Bank	0.60	25	1.01	5
18	Privredna Bank	0.65	22	0.76	15
19	ProCredit Bank	0.78	18	1.21	2
20	Raiffeisen Bank	1.03	7	1.00	6
21	Razvojna Bank Voj.	0.86	15	0.48	21
22	Société Générale	1.05	6	0.93	9
23	Srpska Bank	0.83	17	0.48	22
24	Unicredit Bank	1.27	2	0.93	10
25	Univerzal Bank	0.86	12	0.31	27
26	Vojvodjanska Bank	0.62	23	0.91	12
27	Volksbank	1.25	3	1.40	1

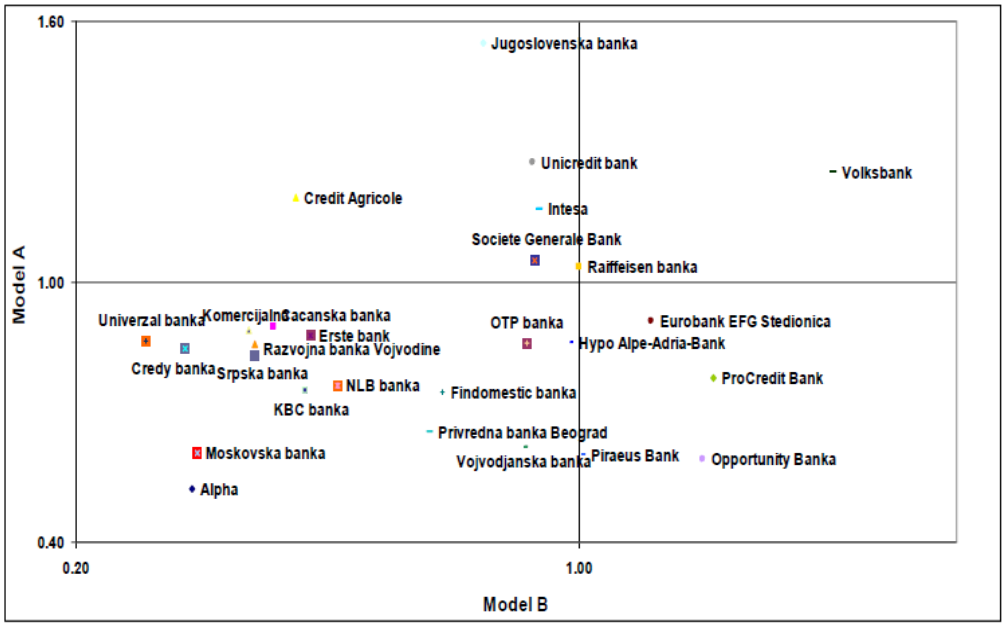
Source: Authors calculated this data from defined indicators the balance sheets and income statements of banks in Republic of Serbia;

As Figure 2 shows, Volksbank is the only unit in the *Stars* group, as this is the only bank that is efficient no matter which operational aspect is considered. For this bank we can say that it efficiently uses the capital and labour for the purpose of making a profit. Figure 3 shows both models, and it is obvious that the Jugoslovenska Bank in model A achieved the best results, while for model B the unit with the greatest super-efficiency is Volksbank.

Raiffeisen Bank is located on the border between *Stars* and *Question Marks* because this bank achieves almost identical results for both models, which is a higher value compared to other DMUs, as we can see in Figure 3. In the *Question Marks* field, there are five banks: Jugoslovenska, Unicredit, Crédit Agricole, Banca Intesa and Société Générale. Primarily, Jugoslovenska Bank has proved as superefficient unit with the highest score for model A, while for model B it has efficiency 83.38%, which makes this bank inefficient for that model. Furthermore, UniCredit Bank does not show good results in these models, so we can say that business politics is not adequate because in both cases this was an inefficient unit. Crédit

Agricole and Banca Intesa took bad positions, especially when it comes to model B, so it is necessary to regulate the inefficiency when using input.

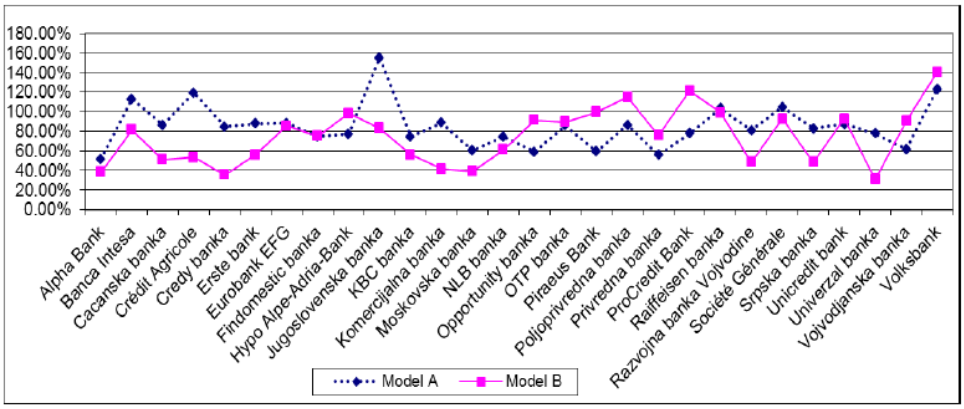
Figure 2. Modified BCG matrix



Source: Data from Table 2.

In the *Cash Cows* field (Figure 2) there are Eurobank EFG, ProCredit Bank, Piraeus Bank and Opportunity Bank. These banks are "mature" branches, and this is confirmed by the graph in Figure 3. This especially refers to ProCredit, Piraeus and Opportunity Bank, particularly when it comes to operational aspect.

Figure 3. Comparative review of models A and B



Source: Data from Table 2.

The *Dogs* group includes the remaining banks, which showed the worst results: Hypo Alep-Adrian-Bank, OTP Bank, Fin domestic Bank, Privredna Bank, Vojvodjanska Bank, Cacanska Bank, Komercijalna Bank, Erste Bank, Development Bank of Vojvodina (Razvojna Banka Vojvodine), Univerzal Bank, Credy Bank, Srpska Bank, NLB Bank, KBC Bank, Moskovska and Alpha Bank. This conclusion is also made by Figure 3, because these banks were inefficient by all criteria.

Conclusion

The use of DEA method to analyse the efficiency of banks allows identification of the market leaders, the banks that accompany them and those that are very inefficient. Mathematical models that were described and applied in this paper clearly indicate their important role in operational analysis of banking sector of one country at specific period of time. DEA is applicable to a comparative analysis of banks and their grouping according to performance in various aspects of business. Based on the analysis, the bank management could direct the bank development in order to improve the business. Besides, efficient banks can be seen as benchmarks whose results can be observed as target values.

According to given data and obtained results, the following can be concluded: based on model A, the superefficient banks are Jugoslovenska Bank, AIK Bank, Volksbank, Crédit Agricole, Banca Intesa, Société Générale and Raiffeisen Bank. The first two banks (Jugoslovenska Bank and AIK Bank) are the banks of the public sector. It is obvious that they have small investments because they are financed by the state budget. The remaining banks are private banks, so it is clear that the outcome will be like this, bearing in mind the Milind Sathye's study, where the exact same combination of inputs and outputs was used and concluded that the private banks of foreign owners do business better and more efficiently.

Considering the data obtained using the model B, it can be concluded that the superefficient units are Dunav Bank, Volksbank, ProCredit Bank and Poljoprivredna Bank. Once again, among the most efficient banks there are two banks from the public sector - Dunav and Poljoprivredna Bank. Like in model A, in this model the Volksbank appears also as a superefficient unit.

Finally, we have done a comparative analysis and the outlayers were eliminated from both models, so as a result Volksbank got the most important place in the matrix. The disturbing fact is that most of the banks were so inefficient that the management had to consider their "putting to sleep", speaking in BCG matrix manner. However, a certain percentage (15%) of tested banks belongs to "mature" group, which represent the source of cash flow and they were all the banks of the private sector. Only 19% of banks belong to *Question Marks* group, which means that their progress requires a serious investment.

For this kind of analysis, two aspects have been considered that directly determine business accomplishment of a bank - costs and revenues, but also the employment structure. Some of these banks have shown very different results according to these models, depending on whether it is a bank of the public or private sector, i.e. foreign bank. During this research, the

number of branches has not been considered, and this is a very important indicator when it comes to operation performance of a bank, because if there are branches also in rural areas, for bank that means more profit because of its prevalence throughout the country.

The success for the banks represents a constant influx of new clients, so management has a job to devote itself to the improvement of the bank operation, in order to gain more money and thus become a superefficient unit.

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PRIMENA DEA METODOLOGIJE U MERENJU EFIKASNOSTI U BANKARSKOM SEKTORU

Radojka Maletić[17], Marija Kreća[18], Predrag Maletić[19]

Rezime

Najvažniji aspekt svakog poslovanja jeste efikasnost. Cilj je da se uz što manje ulaze postignu što veći izlazi, ili raspoloživi ulazi maksimalno iskoriste. U ovom radu ilustrovaće se primena DEA tehnike u oceni efikasnosti poslovanja bankarskog sektora Srbije, koji trenutno broji 33 banke. Izmeriće se efikasnost banaka pomoću dva modela sa različitim ulazno-izlaznim indikatorima, a potom i uporedna analiza dobijenih rezultata pomoću BCG matrice. Banke su rangirane prema svojoj efikasnosti i komentarisane sličnosti i razlike koje su se iskazale.

Ključne reči: *Banke, DEA, efikasnost poslovanja, superefikasnost, BCG matrica.*

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THE POSSIBLE EFFECTS OF THE EU ACCESSION ON THE WESTERN BALKANS' AGRICULTURAL TRADE

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Summary

The quickest accession to the European Union is a shared, short term goal of the Western Balkan countries (Albania, Bosnia and Herzegovina, the Former Yugoslav Republic of Macedonia and Montenegro, while Croatia has already accessed). It will cause remarkable changes on their agricultural sector and therefore on their agricultural trade. In order to evaluate the possible effects of the accession, the present situation of agriculture should be analysed. This paper gives an overview of the Western Balkan countries' agriculture (agricultural value added, agricultural employment, agricultural production and its structure) and its trade relations (major trade partners, major products, trade balance,) and discusses the potential impact that adoption of EU domestic agricultural and trade policy would have on the sector. The experience of other new member states from Central and Eastern Europe shows that price, production and trade can change significantly after accession as well as during the pre-accession period. How much of this adjustment occurs before or after accession depends on the pre-accession policy and market adjustments. Finding niche markets or being cost competitive are crucial tasks for these countries during the accession process.

Key words*: Western Balkans' agriculture, agricultural trade and trade policies, WTO.*

JEL: *Q17, Q18*

Introduction

The major and common objective of the Western Balkan countries is the quickest possible accession to the European Union. Joining the EU will open new markets for agricultural products and in most cases increase support for agriculture and rural development, although Western Balkan's producers will also face with higher competition. The flow of goods, which is already growing during the accession discussions, will intensify between the old and new member states, especially in case of agricultural and food products. This is fully

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anticipated also because of the prior experiences of those CEECs who joined in 2004 and 2007 (Kazlauskiene, Meyers, 2004). On the other hand, the first accessing country, which is likely to be Croatia, will impact on the others, just as happened with Slovenia in 2004, due to the relatively high intra-Balkan trade. Entering the common European market means opportunities, but challenges too. This paper will analyse these effects by looking at pre-accession conditions and then estimating the likely directions of change due to adoption of the Common Agricultural Policy and the common protection measures that must be harmonized with the EU's border measures.

Data and methods

The introduction of the relevance of Western Balkan's agriculture was based on the World Bank's databank, FAO database and the report by Volk (2010). Data on sectoral production can be found in the FAO database, while trade measures are in the WTO database. In case of missing data, national statistics were checked. National and international literature was used to confirm the results. For every analysis the newest available data were used.

Data on tariffs are taken from the WTO's tariff database. Data for Bosnia and Herzegovina, Montenegro are missing. For Serbia, the latest available dataset is for 2005. Data for 2010 are already available for the EU[3], but to have a comparable picture, data for 2009 were used for every country. Regarding tariff measures, the applied MFN (most-favoured-nation) tariff was used. The three analysed agricultural products were selected firstly by their importance in the countries' production. But it would have been impossible to create one tariff measure for the products on six-digit HS level, therefore total imports of products from the world in the HS subheading were used. This method resulted in selecting for comparison pig meat[4] (frozen meat of swine (excluded carcasses and half-carcasses, and hams, shoulders and cuts thereof, boneless)), milk powder[5] (milk and cream in solid forms, of a fat content by weight of ≤ 1,5%) and maize[6] (excluded seed).

Among the analysed countries Croatia, FYROM and the EU are using ad valorem (av) and non-ad valorem (specific) duties too, so conversion from non-av to av was necessary for cross-country comparison. In the case of more than one non-av duty for a product, the most common was selected. For converting them into a percentage value, the FAO's international commodity prices were used for every commodity. The measures together gave the level of tariff protection of the countries.

3 Although there were no tariffs changes in the EU in 2010 compared to 2009.

4 Six-digit HS subheading is 020329.

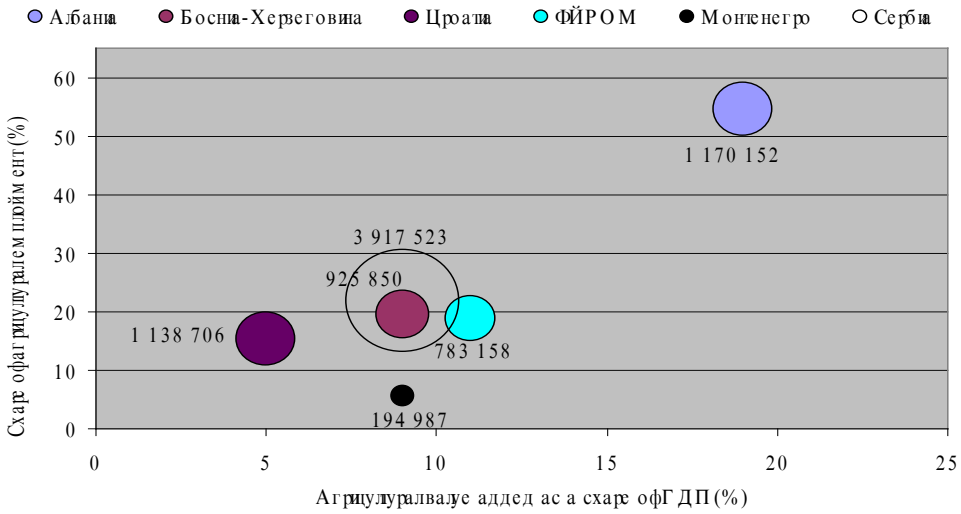
5 Six-digit HS subheading is 040210

6 Six-digit HS subheading is 100590.

Basic indicators of Western Balkans' agriculture

Three indicators were used in order to give an overview of Western Balkans' agriculture: agricultural value added as a share of GDP (%), share of agricultural employment (%) and the size of agricultural production (net production value measured in international dollar[7]). The following comparative diagram summarises these indicators (Figure 1)

Figure 1. The basic indicators of agriculture, 2011.



Source: Authors' composition based on World Bank database and national statistics for Albania and FYROM

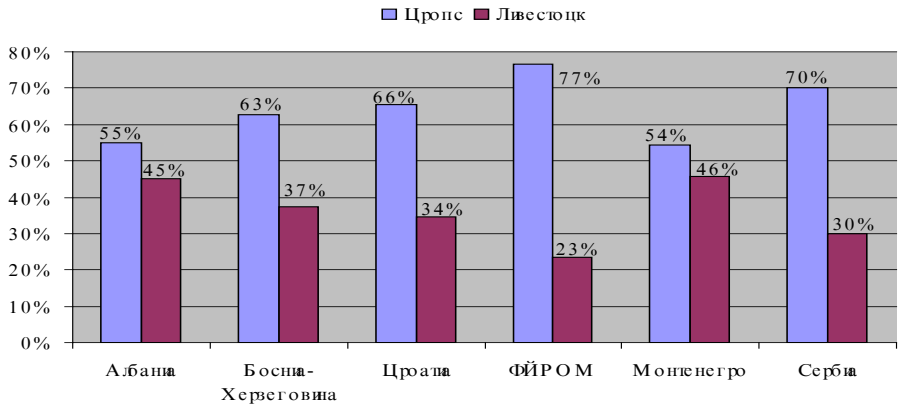
Agriculture has by far the highest importance in Albania both in terms of share of GDP and share of employment, but it means subsistence-oriented production which needs to be transformed into a real, commercial sector (World Bank, 2013). On the other hand agricultural value added and share of agricultural employment have the lowest shares in Croatia and Montenegro, respectively. But even the lowest values are far above the averages of EU-27, which were 1.3% (value added) and 4.4% (employment) in 2011 (Eurostat database). With regard to agricultural output, the Serbian one is the biggest, almost reaching the sum of the other five countries put together.

The sectoral structure of production shows similarities in the biggest countries (Bosnia and Herzegovina, Croatia and Serbia) with two third shares of crops in total production (Figure 2). In those countries sensitivity of production to dry weather is a key issue taking into consideration the lack of proper irrigation systems (Mizik, 2011). Production shows a more balanced picture in the smaller countries (Albania and Montenegro) except for FYROM,

7 International dollar is a theoretical currency used by FAO, World Bank, IMF or UN. It combines exchange rate, purchasing power parity and international average prices of commodities. It shows the purchasing power that the US dollar had in the United States at the given year. Therefore it is better for comparisons, but cannot be directly converted to other currencies simply using exchange rates.

where crops dominate livestock almost four fifth to one fifth. According the FAO database, the EU shows unbiased picture despite the huge differences among the member states.[8]

Figure 2. The sectoral structure of production value, 2011

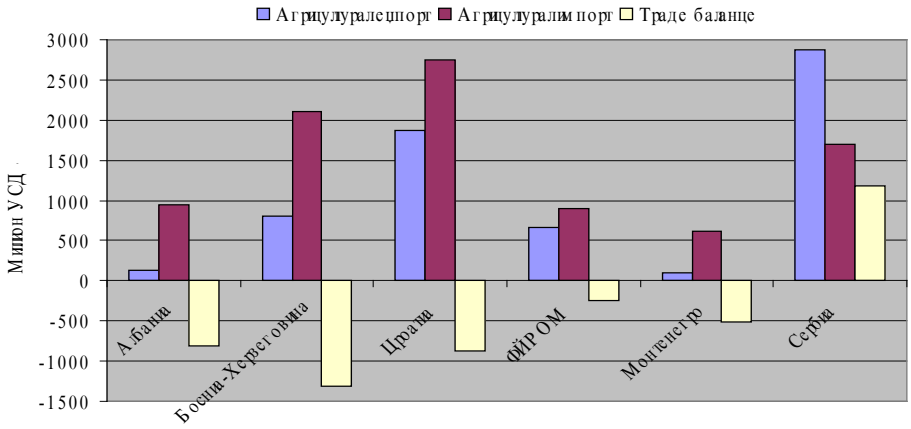


Source: Authors' composition based on FAO database

Trade issues of the Western Balkans

Taking a closer look at the agricultural trade of the region, Serbia is the biggest exporter followed by Croatia and Bosnia, while Croatia is the biggest importer of agricultural goods followed by Bosnia and Serbia. Only Serbia has a trade surplus, while all the other countries are net importers (Figure 3). This is not surprising, given the ample agricultural resource endowments of Serbia compared with the others.

Figure 3. The actual state of agricultural trade, 2011



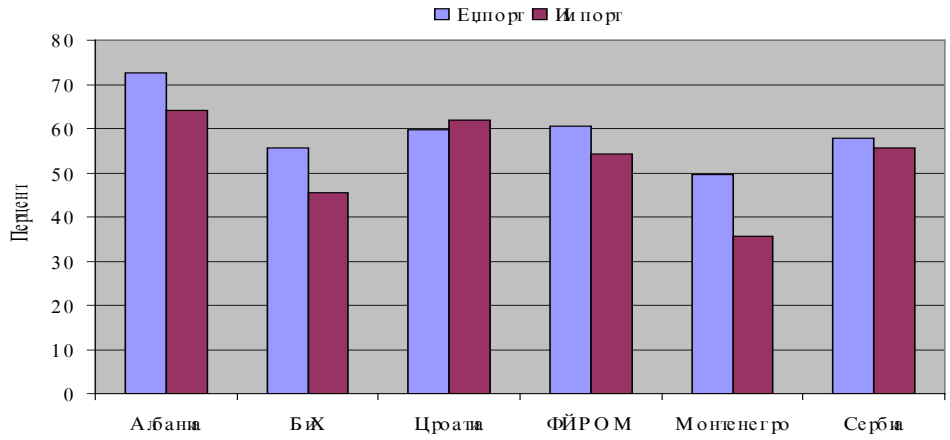
Source: Authors' composition based on WTO database

8 Traditionally crop producing countries are France or Italy, while UK or Denmark can be characterized by livestock dominancy.

Regarding both export and import, EU is the most important trading partner of the region.[9] It can be verified by the analysis of trade connections, which shows more than 50% of both imports and exports, are with the EU for all countries except BiH and Montenegro on import side (Figure 4). Most of the remaining trade is with one or more of the other Western Balkan countries (e.g. in Montenegro, the EU is followed by Serbia (17.7% export and 28.4% import share)).

EU plays outmost importance in trading in every country, especially in Albania, followed by Croatia. In case of Croatia it will be even higher due to the accession and EU's single market. The lowest shares can be found in Montenegro, but this country has very tight connection with Serbia[10].

Figure 4. The share of EU in the Western Balkan's trade, 2011



Source: Authors' composition based on WTO database

Pre-accession policies of the Western Balkan countries compared to EU

A long term objective of these countries should be the development of an EU-compliant food safety system, while on the short run they have to develop a lean, EU-compatible regulatory and institutional framework for food safety (Lampietti et al., 2009). Some remarkable changes can already be recorded. There are independent food safety agencies in some countries (Croatia, Bosnia and Herzegovina, FYROM) and some of them have already been acknowledged by the EU. For example the Croatian Food Agency got the ISO 9001:2008 certificate in January 2009. Serbia seems to be lagging behind, as the food safety law has not been adopted yet and the food safety agency is not established (Rasavac, Cuk, 2009). But it should be kept in mind that without having sufficient resources (e.g. qualified staff, financial resources, well-equipped

9 From this aspect it is worth highlighting that out of six Western Balkan countries two are not yet members of the WTO. Bosnia and Herzegovina and Serbia have observer status.

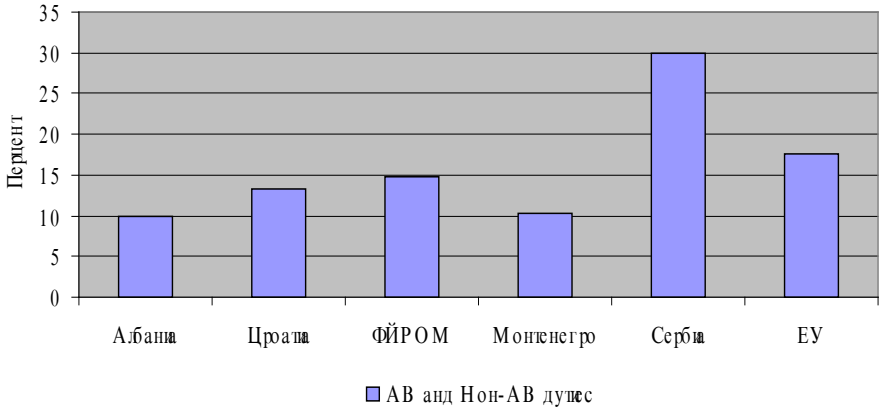
10 The other Western Balkan countries have much loose trade connection with Serbia.

laboratories, etc.), establishment of a food safety agency itself can not solve the food safety problems (Mizik, 2010).

A wide range of support measures are in use in Western Balkan countries, however their importance varies from country to country, but the support levels are by far below the EU's supports based on either per hectare or per animal. Market support measures are playing a less and less important role due to the transition, while border protection is limited by the free or preferential trade agreements with the most significant trading partners (Volk, 2010). However, it is nevertheless important that upon accession, each country must adopt the common border measures of the EU, so we can anticipate some impacts based on the pre-accession levels of these measures.

Regarding the analysed products[11], in case of pork no big differences can be seen compared across countries (Figure 5). Import duties are between 10 (Albania) and 30% (Serbia), with the EU levels being between these. Joining the EU will lower the border protection somewhat in Croatia and to a greater extent in Serbia as the current combined duty levels are above those of the EU. On the other hand duties would have to increase slightly in FYROM and approximately double in Albania. Such changes would imply that pork prices will raise the most in Albania and decrease the most in Serbia, as these border measures adjust to EU levels.

Figure 5. Import duties on frozen pork



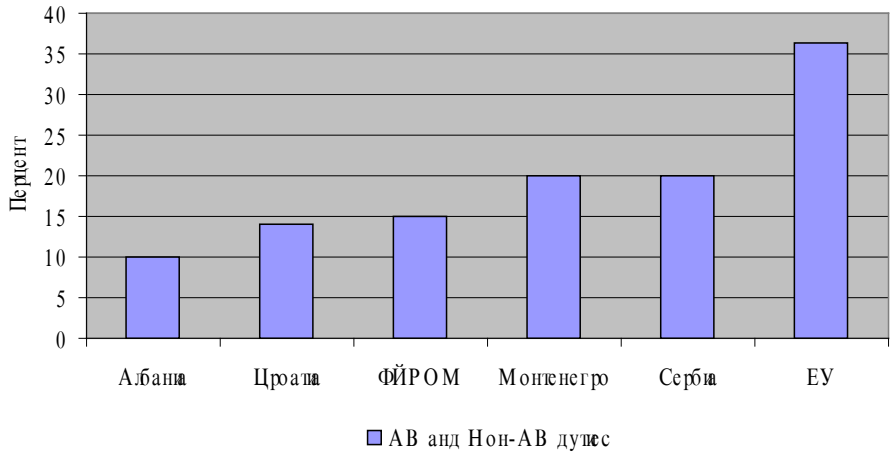
Source: Authors' composition based on WTO Tariff database

The milk market is much more heavily protected in the EU than in the Western Balkan countries based on skim milk powder tariff comparisons (Figure 6). The combined (av + non-av) EU duty level is almost double that of the second highest Serbian one. The lowest protection can be found in Albania with a 10%, but Croatian and Macedonian are also close

11 In 2000, the EU granted autonomous trade preferences to all the Western Balkan countries allowing majority of their exports to enter the EU without customs duties or limits on quantities. It was resulted growing trade between this region and the EU.

to this (14% and 15% respectively). It means that the future accession of Western Balkan countries will likely lead to significant increases in milk powder prices and by extension, in other dairy product prices too. And if dairy produce prices increase significantly, fluid milk prices will be driven higher as well. This is exactly what happened in many CEECs, and especially in the Baltic States after accession, because milk and dairy product prices were very low relative to EU levels before accession. Of course, there is another aspect of this. The quality of milk also has to increase substantially to meet EU standards. It means that part of this higher price in the future will be due to higher quality milk and dairy products required to meet the standards of the Single Market in the EU.

Figure 6. Import duties on milk powder



Source: Authors' composition based on WTO Tariff database

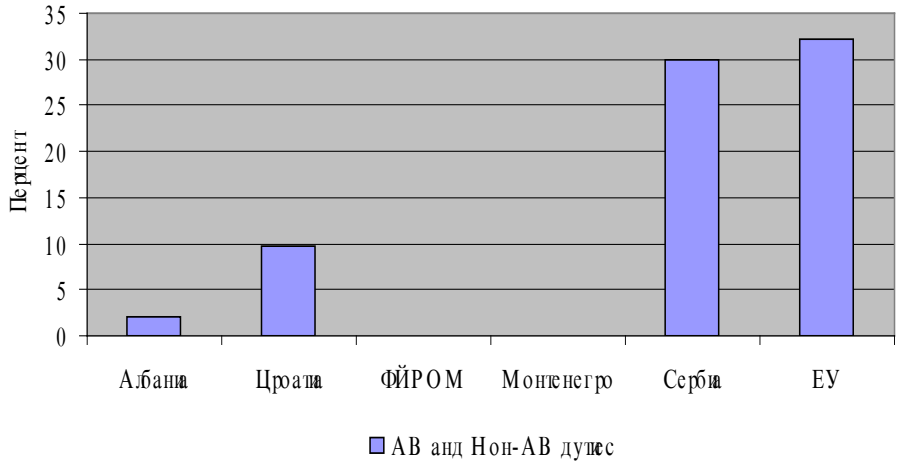
Among the commodities we are comparing, maize tariffs show the largest differences, because three of the countries have tariffs near zero. It varies from 0% (FYROM) to 32.2% (EU)[12], (Figure 7). Though theses EU tariffs do not apply when maize prices are as high as they are presently[13], these differences would imply increases in feed costs in these countries upon accession, especially during periods when these EU tariff rates would apply. More generally, it was also true in many CEECs that feed costs increased upon accession, because the lower cost feed that were being imported from Ukraine and other places under preferential trade agreements had to be stopped upon joining the EU and adopting EU border measures and abrogating all those preferential agreements.

12 It comes from 94 EUR/t non-ad valorem duty by WTO's tariff database. The counting method is rather difficult: "The duty is fixed on the basis of the difference between the effective EU intervention price for cereals including monthly increments, multiplied by 1.55 and a representative CIF import price for cereals at Rotterdam" (EC Regulation No. 27/2009).

13 Proving this, duty on maize has been set at 0 EUR/t since 17 August 2010.

This raised a final more general point that preferential agreements among the Balkan countries themselves[14] and between them and, for example, Ukraine, will be abrogated and that too may involve raising costs of some products and inputs being imported now. For example, when Croatia joined first, it will have to abrogate all its preferential trade agreements with other Balkan countries[15] and adopt those that are EU agreements as it was the case with Romania and Moldova in 2007.

Figure 7. Import duties on maize



Source: Authors' composition based on WTO Tariff database

Summary and conclusions

As with CEEC accessions before, it is clearly expected that there are both benefits and challenges for farmers and agribusiness in the accession countries of the Western Balkans. First, the farmers in most cases will get more direct support in the form of payments, though the formulas for this will change in the new financial framework 2014-2020, and that bears close attention by candidate and potential candidate countries. Second, it is clear from these few example comparisons of tariffs that protection of the external market can go down or up depending on the relative levels of tariffs before accession. Generally, the EU has low protection for poultry and pork and these are the ones where tariffs may currently be higher in some Western Balkan countries. Thus these industries may suffer from accession if they are more highly protected how. On the other side, dairy products are likely to be more protected in the EU, so dairy farmers and industry will likely benefit from that. Finally, there is the issue of competitiveness of the processing and distribution systems that will come under pressure as a result of being part of the single market. So it is important for these sectors to improve efficiencies and competitiveness in preparation for accession, so they

14 Central European Free Trade Agreement (CEFTA)

15 However EU itself applied preferential trade agreements with the other Western Balkan countries.

are ready for increased competition in their own markets and also ready to take advantage of a much larger market potential in the EU. Thus, agricultural policies in these countries should enhance higher competitiveness and production of more competitive products.

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Review Article

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HOW TO MAKE THE RUSSIAN GRAIN MARKET MORE EFFECTIVE

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Summary

The Russian agribusiness has immense possibilities. At present it is vital to create such economic conditions under which the farming sector could develop dynamically. The increase in the grain production is of crucial importance for a take-off in all agricultural branches. In this respect, the grain sector is Russia's strategically significant economic segment.

This paper presents both potential possibilities and risk insurance in the Russian grain market. The purpose of the article is to outline an economic appraisal and a holistic analysis of this industrial sector along with elaboration of guidelines which are aimed at adjustment in this area, and commercial process optimization with the view to speeding up the grain production in the Russian Federation, which will enable to raise the export turnover. The practical importance of the paper is based on the fact that if the currently important problems are solved, there is a possibility of ensuring food security, stabilization, and sustainable development of the grain industry.

Key words*: grain market, grain export, agribusiness, risks of the farming sector, grain exchange, agro-industrial market efficiency.*

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Introduction

The basic sector of both Russian and embracing agro-food market is the grain market. The condition of the market is an important quality indicator of a country's economic reforms, and of how efficiently the agro-industrial policy is being implemented. In practice, the grain market includes all the elements of exchange relations. The development of grain market involves not only a wide range of issues, related to the grain farm-out performance, but also a country's overall grain industry.

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The agricultural development with its most essential element, the grain production and its processing, will make it possible for the country to achieve a more stable economic and political position on the world stage as nowadays the grain industry influences the food processing industry to a large degree. In the long view, the same influence will concern the energy industry.

The fact is that without the existence of the highly-developed grain production, it is impossible to increase productivity in animal industries, livestock keeping, agro-industry and related fields. At the same time, owing to different factors in the world, there is a reduction in land and increase in its non-farm uses, which results in food deficit. Also, mining operations, such as oil extraction and natural gas production, are in full swing. Depletion of resources leads to their shortages, so bio-fuel crops can make good for this deficit.

With due regard to overall economy- related elements, the grain market can be considered a peculiar development model for agricultural, primary commodity and food markets. Along with this, the grain economy, being a complex multi-functional and dynamic system, with a wide array of activities, demands top-priority attention to its development from government. It implies that the Russian Federation might gain a foothold both in the grain and bio-energetic world markets, which requires solving a number of domestic problems that prevent the grain industry from sustainable development. Land dispute, low-level production and poor product quality, and export-related issues are the main stumbling blocks. Inappropriate grain sale, limited possibilities of risk insurance, and lack of a grain exchange reinforce doubts of positive agricultural evolvement.

Research rationale

Grain farming, as the largest sector of the regional agribusiness, has traditionally been a basic building block of regional social-economic development. However, the slow pace of structural and technological modernization, as well as out-of-date capacity in the grain storage and processing, were distinctive features of this sector. Such factors as: shortcut agricultural methods, inaction in practical implementation of innovation production technology, omissions in grain processing and grain use, unbalanced disposition of sown area have resulted in a crop yield gap, i.e. a much lower level of crop yield in Russia than in agriculturally-developed countries. Currently, grain is by no means of high quality.

High product marketability and price maintenance for extended reproduction are key factors of grain production incentives. The state has been using one of practicable methods of grain market regulation: procurement and cash grain interventions that are powerful market regulation instruments. However, under current conditions in Russia, these instruments are not only inefficient but also cost demanding. As a result, it requires a transition to an integrated regulation of regional markets. Besides, the use of adaptable and timely market leverage is vital. Due to this fact, the elaboration of theoretical and methodological background and practical guidelines for the Russian grain market is of high priority.

Background of the problem

Such outstanding scientists as Abalkin, L., Atkinson, A., Barkem, A., Voelken, A., Jevons, W., Keynes, J., Kondratiev, N., Kotler, Ph., Porter, M., Samuelson, P., Smith, A., Tracy, M., Hayek, F., Schumpeter, J. and Schniper, R. were the first to contribute to scientific understanding of merchandise market grouping; research and forecasting effort of market conduct of manufacturers, sellers and buyers; and efficiency of their interaction in a competitive environment. Their scholarly works, dedicated to theoretical, methodological and systematic issues, are a scientific base for carrying out new research in the field of market economy development in the current economic environment.

Although economics writers dealt with many economic issues on grain market matters, theory, methodology and practice of grain market development were not properly considered. Similarly, there was a lack of attention to natural, economic, and geographical features of regions. Finally, state regulation of regions and methods of grain industry management were not a prime focus.

We have determined the theme of the paper for the following reasons:

- grain market as an entire integrated system with unsettled issues;
- grain market complexity and versatility;
- urgent need for a search for acceptable solutions to an array of problems.

Methods

Theoretical underpinning and methodological foundation of the research are based on fundamental works of Russian and foreign academic economists who have made a great contribution to the following problems: the evolution and regularity of development of market relations, strategic management of agricultural development, the agricultural market as a whole, and the grain market in particular. As a part of the study, the authors have used logical reasoning, economic-mathematical modeling, a constructive analysis, as well as statistical, descriptive, and comparative methods.

Hypothesis

Two years ago Russia pursued the policy of winning back the grain market as it had lost established customers in 2010, in the period of the exports ban. Since that time, the country has been trying to make its comeback.

According to statistics of the International Grains Council (IGC), Russia should step up grain exports to 20 million tons so that it may become a grain market leader.

Experts claim, demand for grain is increasingly rising throughout the world despite high prices. Top-ranking economists of the International Grains Council reckon we are in for a global economic rebound in 2013-2014. However, an insignificant rebounding of grain production is said to be absorbed by usage.

In accordance with the data from IGC, Russia's grain production in the 2012-2013 season amounted to 37.7 million tons, which was the lowest yield for the past decade. It resulted from bad weather conditions in 2003-2004 – on the one hand, on the other hand − from the grain export ban.

Therefore, we can hypothesize that if a number of issues in the Russian grain market are solved, there are all possibilities of a substantial increase in the grain production. It will allow raising exports, providing food security, and stabilizing the agricultural development.

Russia's grain market is still at the forming stage. At one extreme, it is characterized by irregular and unstable meeting demand for wheat throughout regions. At the other extreme, there is unregulated delivery of grain lots from grain-growing regions. Such factors as inadequate and insufficient submission of information to bodies of local executive power (which are responsible for predicting quantity demanded) generate lots of buzz. Logistics bottleneck at the regional market also triggers inadequate administrative action.

The first-level wholesale market (where farmers are main sellers of wheat) consists of a great number of backyarders or sole traders, whose relations between themselves − on the one hand, and wholesale intermediary firms − on the other hand, are characterized as highly-competitive.

As a rule, the geographical boundaries of such markets are the same as administrative border-lines. The first-level wholesale market is not highly-concentrated, and its entities' shares are balanced.

The second-level wholesale market (of wholesale intermediary firms) embraces the territory of the Russian Federation. The processing companies and other wholesale consumers are buyers, while wholesale intermediary firms are sellers. The market is moderately concentrated, and its entities' shares are balanced.

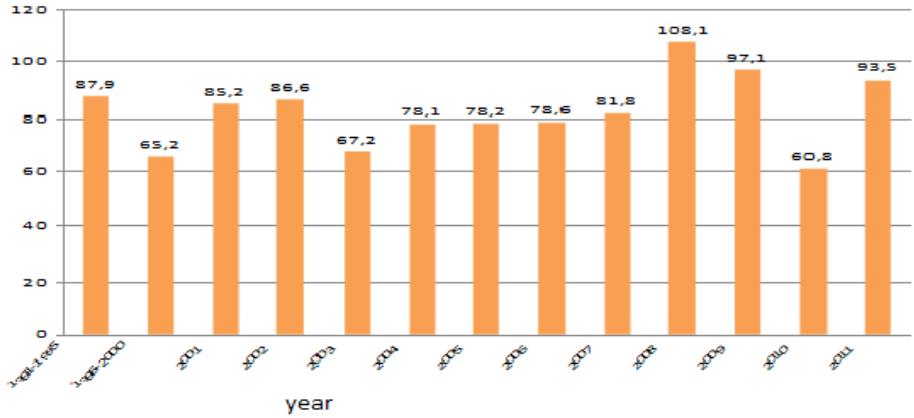
The state of the grain market is described in terms of planted acreage sizes, gross grain yield, and structural changes of certain farm produce. The Russian Federation possesses 115 million hectares of arable land and 78 million hectares of area under crops (Wegren, 2011).

Gross grain yield varies significantly from year to year, which occurs due to changes of climatic conditions. Last but not least, there are many blunders in material and technical resources supply, so farmers are not provided with everything they need, e.g. fertilizers.

On average, the gross grain / pulse yield in Russia amounted to 87.9 million tons from 1991 to 1995. However, in 1996-2000 it fell to 65.2 million tons, and in 2001- 2010 the average harvest amounted to 82.17 million tons. Due to droughts, the lowest volumes of grain production over the past decade were recorded in 2010, and the highest yield was in 2008. In 2011, yield amounted to 93.5 million t (Wegren, 2011; World Grain Statistics, annual).

On Chart 1 is presented the diagram of the dynamics of gross grain yield in all categories of farms of the Russian Federation from 1991 to 2011.

Chart 1. Dynamics of gross grain yield in all categories of farms of the Russian Federation from 1991 to 2011.



Source: Portal of the grain market; Site Institute for Agricultural Market conjuncture.

Under conditions of market relations transition (1996-2000), the decrease in gross yield of grain crops in the Russian Federation and the lack of provision of staple foods to the population, led to significant foreign purchases of food and fodder grain, as well as livestock products (Liefert, 2010).

Currently, the Russian Federation can be called a truly grain power. However, despite a gradual recovery of the market, there is a large number of recurring problems which complicate and sometimes deter the grain market from further development.

Under conditions of promotion of competition in the agribusiness and entrepreneurial activities, grain distribution channels have greatly changed. Before, agricultural products have been distributed centrally. New distribution channels have emerged, such as delivery of grain by means of tied credit, barter, exchange sale, auctions, and others.

One can claim that Russia's grain sector has already gone through a sore trial: the most difficult years of transition from the planned economy to the market economy. So far, there has been a restoration of the country's grain market, which helped to minimize the import of grain crops and establish robust exports.

Russian grain is a great success in the international arena, with the highest demand for it in the Arab countries (Liefert, 2010). The greatest progress in grain export occurred in the agricultural season of 2011-2012. It was the time of outlining a country's steady aspiration to be a leader in grain deliveries to the world markets, which changed the correlation of forces among grain-exporting countries. The total export volume of Russian grain in that season was a record year and amounted to about 26.5 million tons, including 21.5 million tons of wheat and 4.7 million tons of barley (World Customs Organization, Annual report).

Within the Table 1 is shown the list of Russia's top ten grain-importing countries (according to the data for 2011-2012).

Presently, the world grain market is significantly reshaping, e.g. in 2011-2012, the USA, Russia and Australia became the largest exporters in the global grain market, while several years ago the market was under total control of five exporting countries: the USA, Canada, Australia, Argentina, and the EU.

The total export supply of grain from the top three exporters is over 70% of the total world trade volume. The key indicators determining the degree of impact of a country in the world market include: firstly, the share in the global trading; secondly, a ratio of a country's carry-over stocks to average annual domestic consumption. According to both indicators, the USA is today's leader. The main grain-consumers are still APAC countries, such as China, Japan, Korea, Indonesia, and the Philippines.

A steady specialization has come about in the world grain market: the grain production is localized mainly in developed countries, whereas many emerging economies are not able to solve their grain problems and are bound to import grain widely. Hence, the world grain trade is booming. In addition, experts from the Organization for Economic Cooperation and Development (OECD) make it clear that amid the world's sufficient grain production, the problem of grain deficit will be particularly focused on the poorest countries, which are unable to provide money for grain imports.

At the present point in time, there are great changes in the world grain market, implying the following: reduced crops plantings in the USA and Canada diminished carry-over in major exporting countries, and a steady rise in prices. Additionally, new exporting countries, such as Russia, Ukraine, Kazakhstan and Argentina have entered the market and are going to win it actively. Likewise, Argentina quickly responded to the favorable market opportunities and increased wheat plantings by 10%.Various factors influence the global grain market. There is not only a reduction in sown areas in developed countries but also soil erosion, in particular, in many Third World countries. The world population is growing, which results in an increase in grain consumption. The role of wheat as a food crop is rising in the Third World countries (the Middle East, Africa, Latin America); wheat consumption is growing in traditional rice-growing countries, such as China, due to urbanization and a significant shift to Western food.

In the past decade there was a process of intensification of grain production in the embracing market. With the reduction in cultivated areas by 5.5%, the gross grain yield increased by 2.4%. On average, grain yield increased by 9%. Both consumption growth and increase in the world grain trade (5% and 8% respectively) have triggered a step-up in production.

Table1. The largest countries, importing Russia's grain (2011-2012)

Country	Share
Egypt	25%
Turkey	13%
Saudi Arabia	7%
Israel	4%
Kenya	4%
Italy	4%
Yemen	3%
Spain	2%
Azerbaijan	2%
Tunisia	2%
Ethiopia	2%
Georgia	2%
Djibouti	2%
Jordan	2%
Lebanon	2%
Others	25%

Source: Portal of the grain market; World Customs Organization.

Thus, from 2002 to 2011 the world wheat market developed under the influence of the following factors:

- production decreased by 1%, or 11.2 million tons;
- total of world trade increased by 3.3%, or 3.4 million tons;
- at the year end, residues of wheat decreased by 17%, or 26.8 million tons (Site "Agro-industrial complex online"; Site about grain "pro zerno").

As wheat is a dominant crop in the world grain market, the reduction in wheat residues implies a reduction in the amount of grain of the total world grain market.

The main factor that influences the state of the world market balance is the increase in grain consumption by 2.1%, which leads to a significant reduction in grain residues under conditions of a decrease in the world production. In addition, the increase-decrease ratio has the greatest influence on price changes in the world grain market. The increase in residues leads to a decrease in prices, while their reduction results in price development.

In principle, price performance evolves under the influence of residues variations at the end of the agricultural year. All indicators make it possible to forecast the consolidation of global wheat prices. On the assumption of mathematical relationship, the growth in mid-year wheat prices is likely to reach 12-15%.

The world grain sector is of great interest to agricultural producers and investment funds. This is due to the prospects of food price advances in consequence of population growth and intense consumption-production balance of agricultural products. In New York, at the conference on Agro-Investments (May 2011), the world analysts and representatives of funds claimed that 25-30 billion USD would be injected in the agricultural sector of the global economy from pension (Site Institute for Agricultural Market conjuncture), health care and private funds on an annual basis. It would happen if only the agricultural sector was ready to accept those investments. For funds, such financial assets are considered to be a distribution of risks in the investment portfolio, in accordance with geography, cultural diversity, profitability, etc. There are the following regions worth investing in today: South America, Africa, and Australia. Russia is also attractive for investment, especially due to its land resources and technological breakthrough opportunities, despite the fact that it may seem to be obscure and unpredictable. At the same time, Russia has robust reasons for taking a leading position in the world grain market, though it is necessary to solve serious internal problems.

The land question

In the Russian Federation, farmers are constantly facing problems related to the management of agricultural land. First of all, the owner is not sure that his land title is protected. Unfortunately, the secondary agricultural land market has still not been built up. Less than 10% of agricultural land has certificates of ownership. Vast areas are not surveyed and have no cadastral numbers. The processes of primary clearance of land are going in accordance with vague and ambiguous legislation, and the use of schemes that can often be disputed. Completion of paperwork can take many years.

The term «Land under control» has been widely practiced. This is the land cultivated by farmers who have agreements with local authorities about the use of land, but by virtue of law, farmers have neither a right to own this land nor a land rental agreement. It concerns practically all farmers. However, some of them have not been assigned a plot of land at all.

«The land under control » carries great risks for the farmer, because it may be confiscated at any time. Besides, this land is not supposed to be mortgage-able at the bank.

The legislative amendments to farmland transaction rules came into force on July 1, 2011. Some problems concerning transfer of farmland have been solved. The legislative act leaves many questions for officials' final explanation, though. They are officials of different levels whose role is reinforced. Thus, there is room for corruption, raiding, and doubts on the part of investors. All of these obstacles do not contribute to the fact that the farming industry will have a great appeal for investors. Also, it is essential to understand that farmers are reluctant to invest heavily in maximum tillage. Instead, they minimize fertilizing, whereupon soil may be impoverished, which leads to a considerable diminution in yield.

It is required that amendments to legislative acts, regarding transfer of farmland, should be drafted in the shortest possible time, with the aim of simplifying land registration procedures alongside with rigid regulation of this process, and minimizing the role of officials.

Corn market and risk insurance issues

One of the main problems for Russian farmers is demand for their produce. In the grain industry, farmers face the problem of excess supply, which happens every year.

It is commonly known that the "grain year" begins on July 1st, which is the beginning of the grain harvest. From mid-September till mid-October the largest quantity of yield is delivered to the market, which ultimately causes the lowest prices for grain. Afterwards, prices begin to rise steadily, which continues to the end of the "grain year".

Farms, which are not burdened with debts and with garners in possession, are able to resist price fluctuations. They affect the sale of grain as far as demand and supply stabilize (from winter to spring). The farms with debts and without garners have to sell grain at a very low price, which occasionally forces them into bankruptcy.

As a rule, sizable enterprises have marketing outlets, as well as possibilities of exporting and selling grain by the agency of their own mills and bakery plants, whereby making grain prices go up. Conversely, small-scale farming units need to seek help from middlemen. So, grain is sometimes sold under cost.

For the past decade, government has played a key role in rendering help to small farmers in the matter of grain procurement. Government intervention in the grain market has contributed to financial backing and fair grain pricing.

In case of grain intervention, private companies fixed their purchase prices, being guided by state purchase prices. It means that they fixed prices at a little bit higher rate. In this respect, if state purchase prices rose, it made market prices increase.

The state, with the help of interventions, solved the task of updating the state resources of grain food to ensure food security of the country.

However, this instrument of regulation of the market is rather limited and has some negative sides. So, in the high-yield years state-owned grain elevators were working at full capacity, with enormous costs for their maintenance and doubts about where to use the purchased grain in an appropriate way. It should also be considered that in the face of rising energy costs, the increase in purchase prices for grain leads to higher costs of flour and bakery products, which will have an adverse effect on the poor.

It is necessary to develop a mechanism for adjusting prices for raw materials and products in order to ensure producers' profitability, which is necessary for its further reproduction. The establishment of an efficient grain exchange and auction sites is likely to play an undeniable role in the process of organizing sales of products both from large and small producers. So, there will be an opportunity for market participants to insure risks and take action against monopolism in the grain industry.

Problems of grain export

Another deterrent in the growth of the grain market in the Russian Federation is the insufficient level of infrastructure development aimed at grain exports, which causes a monopoly in the export grain market.

Expansion of grain exports is one of the conditions for sustainable development of the agrarian sector of the country. Indeed, in recent years, Russia has shown itself to be one of the most prominent players in the world grain market, expanding the volume and geography of deliveries. In consequence of the budget support, a number of new grain export terminals have been brought up to date, offering exporters a possibility of being actively involved in the preparation of exports.

For a dynamic increase in exports, it is necessary to push aside some obstacles, which will support internal prices and farmers' income. Therefore, it will give motivation to the expansion of grain production without large budget expenditures. The following measures will help establish and step up exports:

- Special attention should be paid to combating the practice of informal regulation of not only exports, but also of the market turnover of grain in some regions, which consistently manifests itself in the form of prohibitions on the export and extralegal collection requirements for different permits and certificates.
- There must be an increase in information transparency of the government in regards to the problems related to production, consumption, and regulation of the grain market. A lack of information creates a wide field for various speculative statements, and gives rise to rumors. As a consequence, it hinders farmers, exporters and other market participants from making rational decisions.
- Subsidy assistance is a very popular measure of export support, which is actively used by 35 member countries of the WTO. The use of various export subsidies will increase competitiveness and expand the export of Russian grain.
- While implementing export-related plans, it is suggested that the maximum amount of subsidy should come to 15-20 dollars per ton (Site Institute for Agricultural Market conjuncture). This being said, different directions of export subsidies must be taken into consideration: compensation of a part of expenses incurred by the exporter due to the underdeveloped infrastructure (collection of various documents in state bodies, transportation, transshipment, demurrage of vessel, and others); the provision of state guarantee and insurance support; loans with subsidized interest rate payments in advance purchases of grain from agricultural manufacturers, etc.

The quality of grain

A lot of attention should be paid to the quality of grain, as in recent years the requirements at the external markets have increased significantly. In a fierce competitive battle, only the producers, growing environmentally-friendly grain of high quality, will get the upper hand. The problem of quality of Russian grain is quite serious now, which mainly occurs due to lack of government control.

In accordance with the adoption of a number of Federal laws (№ 248-FA № 242-FA) in July 2011 in Russia, some innovations were introduced: the legal framework of the system of state supervision and control in the sphere of turnover of grain and products of its processing was liquidated; the unitary procedure of grain control (in such key grain industry infrastructure facilities as: elevators and grain warehouses) was discredited, and the state certificate of quality was abolished.

So far, the Russian Federation has turned out to be the only country, among the largest grain producers, that refused the state control over the quality of grain and products of its processing. This creates serious risks for the development of the domestic agribusiness and the economy of the country as a whole with the view to ensuring the food security of the Russian Federation and maintaining the status of our country as one of the main suppliers of grain in the world market. The idea of cancellation of grain quality control (with the aid of the administrative reform) was designed to get rid of a large number of control organizations, whose services are both expensive and time-consuming for market participants. However, such intentions can lead to negative consequences. At the time being, the lack of government control is likely to increase deliveries of substandard and hazardous grain on the part of dishonest exporters to foreign countries. For this reason, Russia may be driven out of the world grain market.

Bearing in mind the high social significance of ensuring food security of the country, the President and the Government of the Russian Federation gave a number of instructions to the Ministry of Agriculture, aimed at the revival of the system of public control over quality and safety of grain and products of its processing, preparation of legislative acts, including a new edition of the law «On grain».

To preserve the quality of grain products, as well as its increase in Russia, it is firstly significant to restore the state control over grain quality. Secondly, it is necessary to make use of new technologies at all stages of production. Thirdly, it is needed to introduce certifications according to international standards ISO.

Consequences of Russia's entry into the World Trade Organization

According to Aslund (2010), in the nearest time, Russian farmers may face new challenges associated with Russia's entry into the WTO. It will increase competition in the Russian food market; therefore, it may lead to a reduction in the demand for domestic agricultural products, which at present cannot fully compete with foreign ones.

The ambiguousness of WTO entry conditions affect market development adversely; or rather, it is a failure to understand the role of state backing towards farmers, which is more uncertain than the vagueness of the entry into the WTO. In principle, domestic food producers have a possibility of competing with foreign companies on equal terms: however, the lack of capabilities to predict market conditions for a 3-5-year period of time does not allow market participants to plan their activities in the mid- term period, which negatively affects the investment attractiveness of the industry.

According to the calculations of the Russian Agricultural Academy, the entry into the WTO, in terms of the current conditions, will lead to a reduction in Russia's share in the world exports from 1.3% to 1%, with a simultaneous increase in the share of imports from 1.9% to 2.3%. After entering the WTO, the total risk of a decline in competitiveness in the agricultural sector of the Russian Federation will amount to 4 billion USD (Aslund, 2010).

The experience of other countries shows that before entering the WTO any country needs to protect the agricultural market significantly, in order to avoid negative economic consequences after the entry. These effects are associated with the opening of the domestic market for imported products. Food markets of developed countries manifest a higher sustainability in comparison with the Russian market, as they are rigidly regulated and supported by the state. It is also important to mention that WTO member countries have gained considerable experience, and actively use it in applying protective measures in the framework of this international organization.

A generalized list of the main issues of Russia's grain market and the ways of solving them are given in Table2.

Table 2. List of the basic problems of the grain market of the Russian Federation and ways of solving them.

Problem	Ways of solution
Land question	• Elaboration of amendments to the legislative acts regarding the land turnover with the purpose of simplifying procedures for the certification of land and strict regulation of this process; • Minimization of the role of officials in this process.
Problem of grain marketing and risk insurance	• Establishment of an efficient grain exchange and auction sites.
Export problems	• Reduction in political risks and increase in the transparency of the state; • Export operations registration based on the principle of «single window»; • Development of transport infrastructure; • Promotional subsidy.
Problems of WTO entry	• State support by means of subsidies for farmers in the Russian Federation.

Source: compiled by the authors

As one can see, there are many problems regarding the Russian grain market. However, there are no unsolvable tasks. It should be emphasized that the political will is the most crucial factor to solve many of these problems in the mid-term period. One of the urgent tasks should be the solution to marketing and risk insurance problems of domestic grain market participants. This is a burning question due to the fact that the above issues are of vital importance, especially for the country's farmers. After identifying the key problems of the grain market, we will move on to the estimation of capabilities. It is commonly known that the USSR used to be a grain importing country. For the recent years Russia has evolved into a grain exporting country, and in the 2011-2012 agricultural season it became the second largest exporting

country, falling behind the USA only. And even the drought in the 2010-2011 agricultural season did not prevent Russia from restoring its export position in the international grain market the next year, moreover − it enabled to reach new heights, despite the fact that the government had imposed a ban on grain exports (World Grain Statistics, annual).

Table 3 presents five major exporting countries with their projected grain export rates for the 2011-2012 agricultural season. Table 4 informs about five major exporting countries with the volume of grain export deliveries for the 2010-2011 agricultural season. Table 5 shows five largest exporting countries with the volume of grain export deliveries for the 2009-2010 agricultural season.

Table 3. Five major exporting countries with their projected exports of grain for the 2011-2012 agricultural season.

No.	Exporting country	Volume (in mil. t)
1	USA	74,0
2	Russia	26,5
3	Australia	20,4
4	Argentina	19,5
5	EU	16,0

Source: Wegren, 2011; World Customs Organization.

Table 4. Five major exporting countries with their volume of export deliveries of grain on the 2010-2011 agricultural season.

No.	Exporting country	Volume (in mil. t)
1	USA	83,6
2	EU	27,2
3	Argentina	25,4
4	Australia	20,4
5	Canada	20,0

Source: Wegren, 2011; Site about grain "pro zerno".

Table 5. Five major exporting countries with their the volume of export deliveries of grain for the 2009-2010 agricultural season

No.	Exporting country	Volume (in mil. t)
1	USA	81,0
2	EU	24,0
3	Russia	21,2
4	Argentina	19,4
5	Australia	18,9

Source: Site about grain "pro zerno"; Site "Agro-industrial complex online".

Export turnover of the grain market of the Russian Federation can be compared with the export turnover of Russian timber and arms. According to the results of the agricultural season of 2009-2010, which preceded the drought in 2010-2011, (when the export of grain was closed), Russian grain exporters' proceeds came to about $5 billion 21.2 million tons of exported grain. Exports of timber totaled $7.3 billion, and exports of arms totaled $8 billion. Basing on the results of 2012-2013, it was planned to increase revenue for the exported grain by15-20% (Portal of the grain market; Site Agro-site review).

There is a developed infrastructure for cultivation, transportation, and storage of grain. The infrastructure still grows and increases the production of crops. At the beginning of 2012, the total storage capacity of grain in the country exceeded 118 million tons. In 2011, the yield accounted for 93,5 million tons. 26.5 million tons were supposed to be exported, while 67 million tons of grain had to be used for domestic needs (Site Agro-site review; Site "Grain Portal Central Black Earth").

We have a completely different situation with the port infrastructure. The operational capacity limits the increase in the export potential. But that is where a positive dynamics is observed. In 2010, a major terminal for transshipment of grain was put into operation in the port of Tuapse. In 2011 − in the ports of Taman and Astrakhan region. A possibility of developing a port infrastructure in the Far East is being considered.

Russia's agricultural market has a significant growth potential as, judging by the level of per capita consumption of staple foods (excluding bread), Russia lags far behind the developed countries. Moreover, a stable rise in incomes of the population creates prerequisites for further expansion of the domestic agro-food market. The external grain market is very promising due to the increase in food prices on the grounds that the population is growing, and the consumption-production balance of agricultural produce is intense.

Russia has a great potential for the development of grain production, land resources and yield capacity, let alone technologies. It implies that 120 and 150 million tons of grain are far from being unrealistic, which makes it possible to export about 50 - 80 million tons of grain (Site "Agro-industrial complex online"). The fact is that grain producers should benefit from it. Besides, grain prices must cover the costs, risks, and technological development.

With respect to the availability of readily available infrastructure, we can say that within the shortest possible period of time, the production of grain crops in the Russian Federation is likely to increase by at least 25% (up to 120-135 million tons of grain per year), which will make it possible to boost exports of grain (while preserving the current volumes of internal consumption) at a rate of 50 - 65 million tons of grain per year (increasing it 2-2,5 times) (Site "Agro-industrial complex online"; Site Agro-site review).

However, it should be taken into account that the availability of infrastructure does not fully guarantee the grain market development. The main problems lie in the fact that the majority of producers cannot enter sales markets, which occasionally makes grain production economically irrational. In this connection, it is vital to develop market

based trading tools for grain (both exchange and off exchange), which virtually remain unused at present (Trading platform IDK).

The exchange is a special kind of an organized grain market, a sort of tool, which determines prices by means of exchange transactions. They contribute to the formation of civilized grain market, specify the level of market prices, promote transparency, link prices with grain quality and insure producers and consumers against price fluctuations. Therefore, specialized grain exchanges or commodity exchanges should certainly be on hand in the grain distribution system.

It is necessary to expand sales of grain by producers by means of exchanges to such an extent that enterprises of the grain processing industry, procurement and sales organizations could become regular customers, and commodity exchanges should be able to quote market prices. Only then will the open grain market actually participate in grain market pricing, while average prices will become guideposts for negotiating contracts.

Nowadays, grain trade on the exchange is an intrinsic market demand. For example, if an agricultural enterprise has been a blue-chip producing and exporting company in the region for the past decade, it should be able to influence the price at which it exports one or another kind of grain products. It should also provide affiliates with a more accurate price indicator for the planning of its economic activities, and, first of all, for operational costs planning. World commodity markets adhere to such principles.

The main problems that Russian grain market participants face, entering the stock exchange, is a lack of both right promotion of this market instrument and security of payment (payment on deals), and also guarantees of physical grain deliveries (in case they are required). If the exchange does not provide a guarantee of delivery of physical goods on open (expose) positions, the grain market operator supposes that there is no point in going to such an exchange. It is a well-known fact: so far, there is no exchange in Russia to furnish strict guarantees of such a delivery. As a matter of fact, the unavailability of supply guarantees on the part of agricultural producers stultified futures transactions. In this regard, it is necessary to adjust enforcement mechanisms of fulfillment of obligations on the deals.

The solution to the existing problems of exchange and off-exchange trading platforms, together with their promotion among grain market participants, will give the country an option of coping with the problems related to grain pricing, marketing, as well as risk insurance.

Conclusion

Grain production potential is huge, but for an inflow of investments into the development of technologies, enlargement and recultivation of land, there is a great need for confidence in the final commercially-viable grain sales. The same concerns a reasonable and intensive support from the government.

In this regard, the governmental influence on the grain market must be more active through the creation and implementation of a multidisciplinary state adjustment policy, interconnected

and coordinated system of economic, organizational, innovative, lawful and other kinds of activities, and creation of effective and transparent instruments for supporting and regulating the grain market.

In the sphere of the grain market development, emphasis is put on promoting the infrastructure development of market exchange and off-exchange trading and promotion; ensuring efficient foreign economic and foreign policy support towards exporters; state financing aimed at the modernization of the system of technical regulation of the grain production; simplifying the procedures of registration of export operations, based on the principle of «single window»; creating a perfect and stable legislative base for regulating the grain market; implementing the certification of grain in accordance with international requirements, and solving the land issue. In view of the problems regarding grain market sale, faced by many farmers, as well as the lack of effective levers of risk insurance in the grain industry, we can say that an effectively operating grain exchange should become one of the most important elements of transparent grain market.

The formation of the exchange and off-exchange (auction) trading is one of the current issues in the grain trade. Despite the fact that Russia has become one of the biggest players in the world grain market, trading grain instruments are very poorly developed. Their development is important for both producers and the state as a whole, as it will allow small grain producers to enter the market and implement deliverable transactions on agricultural output at market prices, rather than at understated prices fixed by resellers, as it happens now.

In the mid-term period, the creation of efficient work instruments in the form of commodity: grain exchanges, auctions, and also promotion, together with the development of infrastructure, will allow the Russian Federation to become a leader in terms of grain exports.

Results

The research reveals the following results:

Firstly, theoretical and methodological background to the grain market performance has been established. Its main difference is that the consideration of the problem of an increase in the grain quantity and the improvement of selected grain quality should be related to grain production/processing, whereas the cross-industry exchange of products inside/outside the grain industry should be related to the grain market.

Secondly, development strategy of the grain production/market has been substantiated, with due regard to regional food provision. The strategy includes objectives, tasks and development priorities aimed at the competitive growth in the grain production, accelerated implementation of resource-recovery technologies, and technical modernization. In addition, there should be appropriate conditions for an efficient system of agricultural marketing, a rational geographical distribution and specialization of the grain industry.

Thirdly, a grain market development mechanism has been elaborated on an organizational and economic basis. By this mechanism we imply action framework, i.e. a system of organizational, economic, social and legal measures basing on priority guidelines. These

top-priority goals are: arrangement of general operating procedures, maintenance of fiscal sustainability and economic stability in the grain economy, and increased sales, which allowed using the multipronged approach to the implementation of a special-purpose program of managing the grain industry.

Fourthly, methodological procedures, dealing with grain cluster generation, have been improved and amended. A grain cluster is a market institution for realizing the development strategy of the grain industry and the grain market with the view to:

- coordinating its participants' performance;
- enhancing their investment appeal;
- reducing transaction expenses;
- reaching a synergistic effect.

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TRADING OF AGRICULTURAL PRODUCTS FROM AGROCOMPLEX BETWEEN COUNTRIES FROM BALKAN REGION

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Summary

Republic of Macedonia has solid trade relations with many countries in the world. The most important trade partners for Macedonia, when considering trading volume and value, are member states of EU and countries from Balkan region.

Trade value of agrocomplex products is on average 349,3 million EUR – 56% goes to food, 18.5% to beverages and 24% to tobacco. Import value exceedes export value by 117 249 EUR. In view of export value of agrocomplex, most export goes to Serbia and the least to Moldova, but when considering export trade value of vegetables, fruits and tobacco, most export goes to Greece, an the least again in Moldova.

In the same time, when considering export value per person for both aforementioned values, first place goes to Kosovo, and last to Romania. The highest import value of agrocomplex products and vegetables, fruits and tobacco in particulary comes from Serbia, and the least from Moldova. In general, Macedonia´s most important trade partner in Balkan region is Serbia, while trading with Moldova is nearly insignificant.

Key words*: Balkan, agrocomplex, export, import, cost, ranking list.*

JEL: *Q1, Q17*

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Introduction

Food production is the most important human activity, first for its own existence, and secondly for animal nutrition. Larger number of agricultural products are used in their basic form, while other products are processed in food industry. Also, some products are transformed into high-quality livestock products.

Agricultural production in the Republic of Macedonia has relatively high economic value. When expressed in current cost, agricultural production in Macedonia in 2010 reached 70,4 billion denars, out of which 74.5% goes to vegetable products, and the rest to livestock products.

Agricultural surpluses are subjects of national and international trade exchange. The Republic of Macedonia has import-export relations with almost every country in the world. Macedonian agrocomplex, i.e. food sector, continously has imbalance between export and import, according to Anakiev and Sekovska (2005). Blaževski (1999) suggests that efforts in restructuring the production and increasing export values should be directed toward integration and cooperation with larger foreign companies which are confirmed on the market. To increase export of agricultural and food products Vlahovic et al. (2011) recommend modernisation of agricultural and food industry as well as different attitude toward farm subjects in the agro-industry. The most important partner for the Republic of Macedonia is EU, and right behind are the countries from Balkan region.

Data source and working method

In this thesis, along with data from the literature, as well as official data from the state institutions, mainly from State Statistical Office, Customs Administration and Ministry of Economy in the Republic of Macedonia, there are also informations provided by web pages of statistical offices of countries in the Balkan region. Some of them are taken from FAOSTAT and EUROSTAT. When compared with national statistics, these information showed some differences. This is because national statistics and international institutions use different methods for interpreting the data.

Therefore, to provide objective researches, their tendencies, common corelations and validity, the following methods were used: description, interdisciplinary approach, analogies from history, comparative method and theoretical analysis.

The goal of this thesis is to provide an analysis of the structure of unprocessed agricultural products trade exchange with the countries in Balkan region, with an emphasis to vegetable, fruits and tobacco because the Republic of Macedonia has positive trade balance only for these specific products.

Results and Duscussion

Merchandise trade between the Republic of Macedonia and countries from Balkan region

Average value of export of agricultural products from agrocomplex in countries froma

Balkan region (2006-2010) is 247. 758 EUR, which is almoust 71% of total agrocomplex export (349.297.000 EUR). The good thing is that export value rises every year (Table 1).

Table 1. The export value of agrocomplex (in 000 EUR)

Country	Indicator	Year				
		2006	2007	2008	2009	2010
Albania	Agrocomplex	7.048	8.005	14.969	12.388	15.188
	Vegetable, fruits and tobacco	2.688	2.400	3.384	3.506	3.372
	% of share in agrocomplex	38,14	29,98	22,61	28,30	22,20
B&H	Agrocomplex	10.985	21.120	25.153	30.033	30.005
	Vegetable, fruits and tobacco	3.993	5.336	9.813	6.010	6.667
	% of share in agrocomplex	36,35	25,27	39,01	20,01	22,22
Bulgaria	Agrocomplex	18.396	22.962	21.851	30.316	31.945
	Vegetable, fruits and tobacco	5.072	17.912	19.445	27.817	28.156
	% of share in agrocomplex	27,57	78,00	88,99	91,76	88,14
Greece	Agrocomplex	49.964	55.404	49.985	44.637	39.975
	Vegetable, fruits and tobacco	42.016	45.803	36.901	33.499	28.635
	% of share in agrocomplex	84,09	82,67	73,82	75,05	71,63
Kosovo	Agrocomplex	0	0	0	35.512	48.158
	Vegetable, fruits and tobacco	0	0	0	9.247	12.903
	% of share in agrocomplex	/	/	/	26,04	26,79
Moldova	Agrocomplex	124	25	19	49	271
	Vegetable, fruits and tobacco	124	25	19	49	248
	% of share in agrocomplex	100	100	100	100	91,51
Romania	Agrocomplex	2.186	3.772	3.098	2.361	4.467
	Vegetable, fruits and tobacco	2.172	2.319	1.616	769	1.946
	% of share in agrocomplex	99,36	61,48	52,16	19,86	43,56
Serbia	Agrocomplex	48.752	102.098	125.949	78.935	84.952
	Vegetable, fruits and tobacco	24.725	27.563	32.595	27.077	30.015
	% of share in agrocomplex	50,72	26,69	25,88	34,30	35,33
Croatia	Agrocomplex	7.710	25.932	29.082	29.296	31.514
	Vegetable, fruits and tobacco	6.964	6.920	10.254	9.087	9.243
	% of share in agrocomplex	90,32	26,69	35,26	31,02	29,33
Montenegro	Agrocomplex	0	7.664	8.528	8.954	9.053
	Vegetable, fruits and tobacco	0	2.022	2.109	1.846	1.835
	% of share in agrocomplex	0	26,38	24,73	20,62	20,27
Balkan	Agrocomplex	145.165	246.982	278.634	272.481	295.528
	Vegetable, fruits and tobacco	87.754	110.300	116.136	118.907	123.020
	% of share in agrocomplex	60,45	44,66	41,68	43,64	41,63

Source: SSO (2011): Commodity international exchange of the Republic of Macedonia and authors own calculations.

The other good thing is that export of vegetable, fruits and tobacco also increases every year, but according to relative share in agrocomplex export, it has very weak intensity.

The most important trade partner for the Republic of Macedonia when considering export of agricultural and food products is Serbia with almost 36% share in total export

in the region (Table 1). On the other side is Moldova with which Macedonia has the least export value.

The value of agrocomplex products export betweem neighbouring countries of the Republic of Macedonia is on average 214.579 EUR or 86.6% of total export value in the region.

Table 2. Ranking list of the countries in the region considering export value

Rank	Country	Agrocomplex (000 EUR)	Rank	Country	Vegetable, fruits and tobacco (000 EUR)
1	Serbia	88.137	1	Greece	37.371
2	Greece	47.993	2	Serbia	28.395
3	Kosovo	41.835	3	Bulgaria	19.680
4	Bulgaria	25.094	4	Kosovo	11.075
5	Croatia	24.707	5	Croatia	8.494
6	B&H	23.459	6	BiH	6.364
7	Albania	11.520	7	Albania	3.070
8	Montenegro	8.650	8	Montenegro	1.953
9	Romania	3.177	9	Romania	1.764
10	Moldova	98	10	Moldova	93

Source: Authors own calculations based on statistical data.

According to the export value of vegetable, fruits and tobacco (group of products formed by SITC[5]) Macedonian most important partner is Greece with average export value of 37.371 EUR. Second place goes to Serbia, and Kosovo and Bulgaria switched places. Kosovo was on the third place by the agrocomplex export value, and this indicator shows that place on the ranking list now belongs to Bulgaria. Moldova is on the last place with average share of 0,08% in total value of vegetable, fruits and tobacco export.

Macedonian neighbouring countries also have great meaning according to this indicator, because their share in total value of vegetable, fruits and tobacco export goes as high as 90%.

When calculating the export value in EUR per capita for countries in the region, Kosovo becomes the most important trade partner for Macedonia. Every citizen of Kosovo in last period of time (2006–2010) buyed agrocomplex products from the Republic of Macedonia worth 24, 13 EUR and 6, 39 EUR worth products like vegetable, fruits and tobacco (Table 3).

5 Standard international trade classification.

Table 3. Ranking list for the countries in the region, accordin to export value

Agrocomplex			Vegetable, fruits and tobacco		
Rank	**Country**	**EUR/capita**	**Rank**	**Country**	**EUR/capita**
1	Kosovo	24,13	1	Kosovo	6,39
2	Montegro	13,83	2	Serbia	3,99
3	Serbia	12,38	3	Greece	3,46
4	B&H	6,11	4	Montenegro	3,12
5	Croatia	5,76	5	Bulgaria	2,67
6	Greece	4,45	6	Croatia	1,98
7	Albania	3,62	7	BiH	1,66
8	Bulgaria	3,41	8	Albania	0,96
9	Moldova	0,3	9	Moldova	0,2
10	Romania	0,2	10	Romania	0,1

Source: Authors own calculations based on statistical data.

On the other side, citizens from Romania spent at least money for buying macedonian agricultural and food products.

Import from countries in the Balkan to the Republic of Macedonia

Besides exporting agricultural surplus, the Republic of Macedonia imports agricultural products, mainly when natural (climatic) conditions are not in accordance with optimal values (for example during winter). The countries in the region are valuable trade partners because total value of agrocomplex products which are imported from this countries is on average (2006 – 2010) 206.735 EUR, or 44.3% of total import value in the country. In the period we researched, there is continous increase of import value. The import value in the last year in aforementioned period of time has rised by 58,8% in relation to first year researched (Table 4).

Table 4. Agrocomplex import value (in 000 EUR)

Country	Indicator	Year				
		2006	**2007**	**2008**	**2009**	**2010**
Albania	Agrocomplex	435	1.109	1.033	995	919
	Vegetable, fruits and tobacco	262	303	339	295	310
	% of the share in agrocomplex	60,23	27,32	32,82	29,65	33,79
B&H	Agrocomplex	7.714	7.474	7.480	12.029	10.754
	Vegetable, fruits and tobacco	230	114	359	1190	520
	% of the share in agrocomplex	2,98	1,53	7,80	9,89	4,84
Bulgaria	Agrocomplex	17.414	19.551	29.271	21.305	33.245
	Vegetable, fruits and tobacco	148	207	1.009	429	721
	% of the share in agrocomplex	0,85	1,06	3,45	2,01	2,17
Greece	Agrocomplex	31.900	37.682	36.944	32.028	30.258
	Vegetable, fruits and tobacco	6.940	4.154	9.256	5.021	5.662
	% of the share in agrocomplex	21,76	11,02	25,05	15.,68	18,71

Country	Indicator	Year				
		2006	2007	2008	2009	2010
Kosovo	Agrocomplex	0	0	0	2.435	4.351
	Vegetable, fruits and tobacco	0	0	0	392	393
	% of the share in agrocomplex	/	/	/	16,10	9,03
Moldova	Agrocomplex	60	27	22	265	45
	Vegetable, fruits and tobacco	0	6	0	27	10
	% of the share in agrocomplex	0	22,22	0	10,19	22,22
Romania	Agrocomplex	767	1.339	602	1.786	2.298
	Vegetable, fruits and tobacco	2	3	0	57	27
	% of the share in agrocomplex	0,26	0,22	0	3,19	1,17
Serbia	Agrocomplex	73.195	117.815	118.856	105.967	125.561
	Vegetable, fruits and tobacco	2.687	2.650	4.600	8.067	8.221
	% of the share in agrocomplex	3,67	2,25	3,87	7,61	6,55
Croatia	Agrocomplex	19.852	26.441	29.829	28.905	32.399
	Vegetable, fruits and tobacco	2.528	2.417	3.861	2.312	4.297
	% of the share in agrocomplex	12,73	9,14	12,94	8,00	13,26
Montenegro	Agrocomplex	0	207	209	303	600
	Vegetable, fruits and tobacco	0	39	68	73	42
	% of the share in agrocomplex	0	18,84	32,54	24,09	7,00
Balkan	Agrocomplex	151.337	211.645	224.246	206.018	240.430
	Vegetable, fruits and tobacco	12.797	9.893	19.492	17.863	20.203
	% of the share in agrocomplex	8,46	4,67	8,69	8,67	8,40

Source: SSO (2011): Commodity international exchange of the Republic of Macedonia and authors own calculations.

First place, obviously, goes to Serbia. But comparing import and export values from Serbia, import value exceedes export value by 22,9%.

Table 5. Ranking list of the countries in the region, according to import value

Rank	Country	Agrocomplex (000 EUR)	Rank	Country	Vegetable, fruits and tobacco (000 EUR)
1	Serbia	108.279	1	Greece	6.207
2	Greece	33.762	2	Serbia	5.245
3	Croatia	27.485	3	Croatia	3.083
4	Bulgaria	24.157	4	Bulgaria	503
5	B&H	9.090	5	BiH	483
6	Kosovo	3.393	6	Kosovo	393
7	Romania	1.358	7	Albania	302
8	Albania	898	8	Montenegro	56
9	Montenegro	330	9	Romania	18
10	Moldova	84	10	Moldova	9

Source: Authors own calculations based on statistical data.

When considering Greece, Macedonia imports vegetable, fruits and tobacco the most. But, import value exceedes export value by 83,4 %.

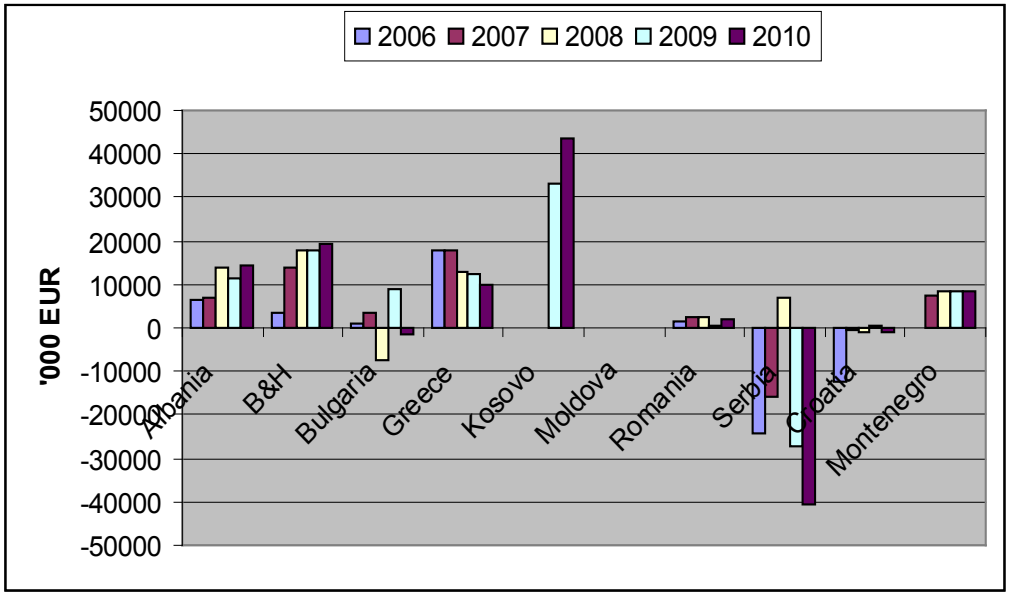
Vegetable, fruits and tobacco import value from Moldova is of minimum value, i. e. only 0,06% share of total import value from the countries in the region.

Average agrocomplex products import value from neighbouring countries of the Republic of Macedonia is 170.490 EUR, which is almost 82% of import from all countries in the region. If the meaning of trade partners is rated by relative share in total vegetable, fruits and tobacco import, then the most important are first neighbours (Albania, Bulgaria, Greece, Kosovo and Serbia) from where comes 77,6% of total import.

Exchange balance with countries in the region

When trading agrocomplex products with countries in the Balkan region, the Republic of Macedonia has positive trade balance (Chart 1). The analysis of balance by the country shows that there are countries from where Macedonia imports products with higher value than export value. This deficit has unstable caracter, i.e. it differs from year to year.

Chart 1. Balance of agrocomplex import and export (in 000 EUR)



Source: Authors own calculations based on statistical data.

Contrary to the agrocomplex composition, Macedonia has surplus as high as 95 bilion EUR from the exchange of raw vegetable, fruits and tobacco (Table 6). The higher positive balance is with Greece, opposite to Moldova.

Table 6. Balance of export and import for vegetable, fruits and tobacco (in 000 EUR)

Country	Year					Average
	2006	2007	2008	2009	2010	
Greece	35.076	41.649	27.645	28.478	22.973	31.164
Serbia	22.038	24.913	27.995	19.010	21.794	23.150
Bulgaria	4.924	17.705	18.436	27.388	27.435	19.178
Kosovo	0	0	0	8.855	12.510	10.683
B&H	3.763	5.222	9.454	4.820	6.147	5.881
Croatia	4.436	4.503	6.393	6.775	4.946	5.411
Albania	2.426	2.097	3.045	3.211	3.062	2.768
Montenegro	0	1.983	2.041	1.773	1.793	1.898
Romania	2.170	2.316	1.616	412	1.919	1.687
Moldova	124	19	19	22	238	84
Balkan	**74.957**	**100.407**	**96.644**	**101.044**	**102.817**	**95.174**

Source: Authors own calculations based on statistical data.

Conclusions

Based on the results from the research of the organisation of market of agricultural products in Balkan region, following conclusions can be made, as well as the recommendation for external exchange with foreign countries:

1. The market for agricultural and food products in the countries from the Balkan region is relatively high, because the region encompasses 7,9% of total teritory of European continent, and 9,8% of total european population.
2. The most interesting agricultural products import, considering degree of population are Kosovo and Albania, and then Moldova, Serbia and Greece, because in the country with higher population the distribution of the products is faster and cheaper.
3. In the countries from the region, the highest agrocomplex export (according to the value indicator) is with Serbia, and the least with Moldova. Vegetable, fruits and tobacco exports the most in Greece, and the least in Moldova.
4. If the total export is in corelation with the number of citizens in the import countries, then the first on the ranking list is Kosovo, and the last Romania.
5. According to the agrocomplex import, the first on the ranking list is Serbia, and Greece is the first in vegetable, fruits and tobacco import. The least import comes from Moldova.
6. Positive balance in the region comes from external trade exchange with vegetable, fruits, grapes, wine and tobacco, because of higher import and export value.

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4. State Statistical Office (2011): *Commodity international exchange of the Republic of Macedonia*, Skopje, Republic of Macedonia, pp. 80-441.

Review Article

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REFORM OF LAND ADMINISTRATION IN THE REPUBLIC OF SRPSKA - TOWARDS UNIQUE REAL ESTATE CADASTER SYSTEM

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Summary

Topic of this article is the just started reform of land administration in the Republic of Srpska. The reform refers to the implementation of the unique Real Estate Cadaster (land and buildings registration), leaving behind the former land books system. The objective of this paper is to indicate the major reason for the reform of land administration and especially the reasons for the choice of cadastral instead of land books system. For this purpose, the historical, institutional and legal aspects are analysed and highlighted. Apart from that, public opinion is also taken into consideration by presenting the results of the short empirical survey. According to the results of the survey, the citizens of the Republic of Srpska regard the cadastral data as by far more accurate and reliable in comparison with the data from land books. Besides, European Union standards in the field of land administration are also taken into account, because EU recommends the member states to implement the unique Real Estate Cadaster system. Based on these considerations, the choice of the unique Real Estate Cadater system instead of land books system in the Republic of Srpska represents the reasonable and justifiable step toward the reform of land administration.

Key words*: land administration, the Republic of Srpska, real estate cadaster, land books*

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Introduction

The on-going land administration reform in the Republic of Srpska refers to the harmonization of cadastral data and data from land books into one unique registry, abandoning the concept of dual land administration system of Austro-Hungarian type. In the period from 2003 up to 2012 the Law on Land Books[4] was in force, which represented the legal basis for the implementation of land books system. During that period, the data about the properties were recorded in cadastre at executive public authority, whereas the data about property rights were recorded in land books at judicial authority. However, the concept of dual registry proved to be inadequate, because during its implementation the data about properties and property rights from the previous period were not arranged, nor the new, actual changes were recorded and updated. Eventually, this led to the substantial discrepancy between recorded and actual situation in the field of real estate and legal holders of property rights. The inaccurate and unreliable land administration record caused many problems for real estate market, land management and investments in the Republic of Srpska. Consequently, the reform of land administration has become one of the priority issues at the national level, especially because of the fact that accurate and reliable data about property rights has a significant impact on the future socio-economic development of the Republic of Srpska. In the year 2012 the Law on survey and cadastre of the Republic of Srpska[5] was passed, which became the legal basis for the implementation of the unique real estate cadaster concept, at executive public authority (the Republic Administration for Geodetic and Property Affairs of the Republic of Srpska). The concept of unique real estate cadaster means that the data about property and property rights are recorded in one place, within unique cadastre registry. The reform of land administration in Republic of Srpska has the aim to merge and consolidate various former records of land administration (cadastre, land books, land cadaster, deed book, cadaster records from the period of SFR Yugoslavia), in order to harmonize the recorded and actual situation in the field of real estate and property rights.

EU standards in the field of land administration

Aligning the system of land administrations among the member states of the European Union has become very important goal at the supranational level. At the conference in Brighton, which was hold in the year 1998, the decision about the strategy for harmonizing land administration systems at the European Union level was made. The same year, this strategy was officially defined in the document know as Cadastre 2014. Main goal of the common European strategy of cadastre management include the support to sustainable development, political stability, removal the conflict between the public and private interests, support to

4 Zakon o zemljišnim knjigama, Službeni glasnik Republike Srpske, br. 67 od 15. avgusta 2003; 46/04; 109/2005, 119/08 (Law on Land Books, Official Gazette of the Republic of Srpska, no. 67 from 15th of August 2003; 46/04; 109/2005; 119/08).

5 Zakon o premjeru i katastru Republike Srpske, Službeni glasnik Republike Srpske, br. 6/12 (Law on survey and cadaster of the Republic of Srpska, Official Gazette of the Republic of Srpska, no. 6/12).

economic development and achievement of adaptability and effectiveness.[6] In 2007 the European Union issued a directive (2007/2/EC) about the establishment of the infrastructure of spatial information in European Union (INSPIRE- Infrastructure of Spatial Information in the European Community), which came into force the same year. Apart from that, in 2002 member states made a decision to formally constitute permanent Committee for Cadastre in European Union, with the aim to make the network for exchange of information about cadastre systems at the supranational level as well as to link the cadastre institutions with the European Union authorities which have a need for the cadastre data for their activates. In addition, to support the common European strategy for infrastructure of spatial information the association Eurogeographics was established. Eurogegraphics gathers 56 European countries with the aim to develop European infrastructure of spatial information through the cooperation in the field of geographical data, including topographical information, cadastre and land information.

With the document Cadastre 2014 as well as the Directive INSPIRE, the European Union recommends the member states, actual and future, to apply the concept of unique real estate cadaster. However, the decision about which authority should be in charge for this record, executive or judicial authorities, is left to be defined at national level, within the framework of national legislation. With the document Cadastre 2014 concept of unique real estate cadaster is promoted at European level, and great number of European countries (Czech Republic, Slovakia, Hungary, Lithuania, Latvia, Sweden, the Netherlands, Greece, Cyprus, Malta and Belgium) has already applied it. Many European countries have gone through a phase of merging two land administration records (cadastre and land books), while the others made advancement in technical merging of these records, leaving them as legally and institutionally separate areas.[7]

Although a sufficient number of member states of the European Union have applied the concept of unique real estate cadaster within the public executive authority, still in Europe there are good, although rare, examples of successful functioning of land administration based on the concept of land books. The most well-known example include the Republic of Austria which has centuries of experience in keeping the record of property and property rights according to the dual concept of land books (Grundbüch). In 1811 in the Austrian legal order the General Civil Code was issued (Allgemeines Bürgerlichen Gesetzbuch- ABGB) which laid a solid legal basis for the development of a modern land registration system.[8] The explanation for efficient functioning of the land books system of real estate record in a country like Austria can be sought in the fact that in Austria there is a large and rich experience in managing property and property rights record according to the dual concept of land books. In addition, the land books in Austria have been regularly updated so the information in them

6 Kaufmann, J., Steudler, D. (1998): Cadastre 2014- A Vision of the Future Cadastral System, FIG, p. 30-31.

7 Prezentacija Svetske banke o prednostima i mogućnostima jedinstvene evidencije nekretnina, 2012, Republička Uprava za geodetske i imovinsko-pravne poslove, Banja Luka, p. 3.

8 Lukić, V., Begić, M., Imamović, J. (1991): Teorijski i praktični komentar Zakona o premjeru i katastru nekretnina, Sid Struka, Sarajevo, p. 32.

is completely reliable. However, the successful functioning of the land books concept in the area of Austria does not imply the conclusion that the same system of land administration and property rights can be equally efficient in other countries. The Republic of Srpska can serve as an example because in spite of one decade long implementation of land books concept, the role of the land books in the legal system was largely ignored, was not updated and eventually became an unreliable source of information about the real estate and property rights.

Land administration in the West Balkan region

When it comes to the West Balkan region, the concept of unique real estate cadaster is applied within the public executive authority in the Republic of Serbia, the Republic of Montenegro and the Former Yugoslav Republic of Macedonia. It should be noted that in these countries there has been a long tradition of the implementation of unique real estate cadaster system, because the pertinent legislation, which is necessary for the establishment of the unique real estate cadaster, was made at the time when these countries were parts of the SFR Yugoslavia.

The Republic of Serbia passed the Law on State Land Survey, Cadaster and Registration of Rights on Real Property in 1988[9] and established the concept of unique real estate cadaster. This process was meant to integrate existing but separated data from cadastre and land books. The Republic of Montenegro passed the Law on Land Survey, Cadastre and Registration of Rights on Real Property in 1984.[10] Since then the concept of unique real estate cadastre within the public executive authority in the Republic of Montenegro is in force. The Former Yugoslav Republic of Macedonia passed the Law on Land Survey, Cadastre and Registration of Rights on Real Property in 1986[11] choosing the same concept of unique real estate cadastre, with public executive authority being in charge of it. The dual land books concept has remained in the Republic of Croatia and the Republic of Slovenia that used to have this concept of land administration even during the period of SFR Yugoslavia. Therefore, in modern times, only Western Balkan countries where the concept of land books is still in force are the Republic of Croatia and the Republic of Slovenia.

Land administration in the Republic of Slovenia is organized according to the concept of dual recording of property and property rights, which mean that land books and cadastre are managed separately, within the judicial authority and within the executive public authority, respectively. Land books and cadastre are completely independent in terms of organizational, personnel and financial solutions, but they are united in a connected

9 Zakon o državnom premeru i katastru i upisima prava na nepokretnostima, Službeni glasnik SRS, br. 17/88 (Law on State Land Survey, Cadaster and Registration of Rights on Real Property, Official Gazette of SRS, no. 17/88).

10 Zakon o državnom premjeru, katastru i upisima prava na nepokretnostima, Službeni list SR Crne Gore, br. 25/84 (Law on State Land Survey, Cadaster and Registration of Rights on Real Property, Official Gazette of the SR Montenegro, no. 25/84).

11 Zakon za premjer, katastar i zapišuvanje na pravata na nedvižnostite, Službeni vesnik na SRM, br. 27/86 (Law on Land Survey, Cadaster and Registration of Real Estate Rights, Official Gazette of SRM, no. 27/86).

database. Each office or branch office of land books and cadastre maintains the data within its jurisdiction in the database.[12]

In the Republic of Croatia, where the separated system of land books (attached to the Ministry of Justice) and cadaster (attached to the State Geodetic Administration), good quality records however are generated only by a new cadaster survey. Practical experience shows that there are problems to implement the new data in the land books because the courts in charge of that often obstruct the process of updating the land books with the new data from cadaster survey.[13] Although the reform of land administration in the Republic of Croatia means the reestablishment or restoration of the land books and their connection with the cadaster data, forming a common database of land information, this has not yet been done for any of the cadastral municipality.[14] Consequently, it can be said that cadaster and land books system obviously do not have the common vision of the land database.[15] Therefore, even in the Republic of Croatia there are fewer of those who oppose the application of modern European Union strategy for spatial data infrastructure and management at internal market, which refers to the full withdrawal of land books from the courts and complete merge of land books and cadaster public services. Having in mind the current situation in the field of land administration in the Republic of Croatia it would be particularly useful to substantially improve the cooperation between land books and cadaster, since it represents the main prerequisite for successful land administration reform, which should be implemented as soon as possible and with the least cost.[16]

Generally, when the systems of property and property rights are managed separately, they tend to develop at different speed and on different technical platforms. The difficulties in regulating the flow of information and the lack of a formal exchange of data between cadaster and land books can result in repetition of activities and additional costs due to duplication of effort and complex process of land administration.[17] In comparison with that, land administration system based on the concept of unique real estate cadaster is simpler, faster and cheaper because all relevant information about property and property rights are recorded in one cadaster, in one place within the public executive authority.

12 Kain, R., J., P., Baigent, E. (1992): The Cadastral Map in the Services of the State, A History of Property Mapping, the University of Chicago Press, USA, p. 4.

13 Ivković, M., Džapo, M., Lasić, Z. (2005): Jedan od načina obnove evidencija vlasništva i nekretnina, III hrvatski kongres o katastru sa međunarodnim sudjelovanjem, Zbornik radova, Hrvatsko geodetsko društvo, Zagreb, p. 143.

14 Mačković, V. (2005): O reformi zemljišnih knjiga, III hrvatski kongres o katastru sa međunarodnim sudjelovanjem, Zbornik radova, Hrvatsko geodetsko društvo, Zagreb, p. 89.

15 Antonović, V. (2005): Što je baza zemljišnih podataka?, III hrvatski kongres o katastru sa međunarodnim sudjelovanjem, Zbornik radova, Hrvatsko geodetsko društvo, Zagreb, p. 9.

16 Mačković, V. (2005): O reformi zemljišnih knjiga, III hrvatski kongres o katastru sa međunarodnim sudjelovanjem, Zbornik radova, Hrvatsko geodetsko društvo, Zagreb, p. 86.

17 Land Administration in the UNECE Region- Development trends and main principles, 2005, Economic Commission for Europe, United Nations, New York and Geneva, p. 19.

The reasons for the reform of land administration in the Republic of Srpska and the implementation of unique Real Estate Cadastre system

By the Constitution of Bosnia and Herzegovina[18] ten responsibilities at the level of Bosnia and Herzegovina are defined. However, the issue of property rights and land administration record are not among them. These issues are left to be defined and managed at the level of both entities- Federation of BiH and the Republic of Srpska. So when it comes to the current overall situation of land administration in Bosnia and Herzegovina there are two different systems applied in practice. In the Federation of BiH, as well as in the district of Brcko, dual land administration system has been in force (cadastre and land registry), whereas in the Republic of Srpska unique real estate cadastre system has been officially in force since the year 2012.

The Law on Land Registry, which represents the legal basis for the implementation of dual land administration system, was in force in the Republic of Srpska from 2003 up to 2012. However, during that period the situation in the field of property registration in the Republic of Serbian was not improved. Although substantial amount of money was invested into the implementation of the land books system, only 5 % of reliable record was made.[19] Consequently, the approach to land administration based on the concept of land books proved to be not just expansive but insufficiently effective and efficient and thus non-functional for the future development of the Republic of Srpska. In fact, as many as 31 municipalities in the Republic of Srpska (Istočno Novo Sarajevo, Istočna Ilidža, Istočni Stari Grad, Pale, Rogatica, Trnovo, Drvar, Gradiška, Kneževo, Kotor Varoš, Kupres, Mrkonjić Grad, Drinić, Oštra Luka, Šipovo, Ribnik, Krupa na Uni, Derventa, Pelagićevo, Orašje, Vukosavlje, Osmaci, Novo Goražde, Berkovići, Čajniče, Foča, Istočni Mostar, Jezero, Ljubinje, Petrovo i Kalinovik) have not the land books at all. Furthermore, 16 municipalities (Banja Luka, Laktaši, Novi Grad, Srbac, Čelinac, Teslić, Prijedor, Bijeljina, Doboj, Han Pijesak, Sokolac, Srebrenica, Višegrad, Vlasenica, Rudo and Trebinje) have only partially arranged land books. [20] As a result of that, there are cases where in land books the property rights are assigned to Ottoman Empire, Austro-Hungarian Empire, Independent State of Croatia, The Kingdom of Yugoslavia, as well as to people who ceased to exist long time ago. The concept of land books proved to be inefficient in the case of the Republic of Srpska primarily because of the fact that property has undergone a number of ownership changes but most of them have not been recorded by land books. The inaccurate data in land books in the Republic of Srpska certainly do not reflect the on-going, real situation as far as the real estate and property rights are concerned, but can be used only in purpose of historical research. So, the main drawback of land administration based on land books system

18 www.ccbh.ba/public/down/USTAV_BOSNE_I_HERCEGOVINE_engl.pdf

19 The Republic Administration for Geodetic and Property Affairs of the Republic of Srpska, cadastral information.

20 Gligorić, T., Blagojević, M. (2011): Osvrt na nerazumijevanja Zakona o katastru Republike Srpske-Ustavnopravna analiza jednog slučaja, JU Službeni glasnik Republike Srpske, Banja Luka, p. 9.

refers to the inaccuracy of data entry in land books in most of the municipalities, which leads to significant discrepancies between the official data and actual state in respect of real estate in the Republic of Srpska.

On the other side, the Republic Administration for Geodetic and Property Affairs of the Republic of Srpska made on 98% of its territory a new survey with all the necessary technical and other data related to 4,041,406 million cadastral parcels and real estate that are placed on them. Public record of current real estate owners and beneficiaries which amount for 883.350 individuals has also been established. This public executive authority has been recorded in average 460.000 changes in property of the citizens per year, caused by various contractual and other obligations.[21] Thus, the cadastral data of the Republic Administration for Geodetic and Property Affairs of the Republic of Srpska reflect the real and the actual situation in the field of real estate in the Republic of Srpska. Although new cadastral survey data should have been taken by land books, it, however, had not been done on the regular basis so that the gap between the cadastral record and data in land books had further deepened. That is the main reason of low efficiency of land books system, which in case of the Republic of Srpska, amount for only 5% of updated and relevant data.

Very low level of data accuracy in land books in the Republic of Srpska can be explained by insufficient and inexperienced personnel and material equipment of the land books offices, as well as by general lack of expertise and long experience of real estate record in the Republic of Srpska. In comparison with that, within cadaster system in the Republic of Srpska firm foundation of real estate survey and record has been developed over time so that it functions well even today mostly thanks to long tradition, experienced and highly educated personnel from different professions (Law, Geodesy, Economics, and Informatics) required for successful performing of land administration.

The consequences of low database accuracy in the area of property rights, among others, include: a serious threat to the real estate market and capital investment, the inability to create a database for the purposes of the tax system as well as for registration of illegal buildings and process of their legalization. In modern economic terms, the stability of the economic system depends on the clarity in defining land and property rights issues.[22] So, the unresolved question of ownership right prevents all the other matters that enter in the economic mechanism: market, productivity, profitability, environment and many others.[23] Disorganized and not updated system of real estate and property rights represents the serious barrier to the economic development of the Republic of Srpska, and thus prevents

21 Program of survey work and establishment of real estate cadaster for the period 2011-2015 (2010), Republic administration for geodetic and property affairs, Republic of Srpska, Banja Luka, p. 33.

22 Gnjatović, D., Ljubojević, R., Milutinović, I. (2012): Ownership changes on arable land in the Republic of Serbia in historical perspective, Economics of Agriculture, Belgrade, vol. 59, no. 3, p. 456.

23 Popescu, G. (2012): Postindustrial economy and the property, Economics of Agriculture, Belgrade, vol. 59, no. SI-1, p. 23.

the realization of goals defined by economic policy, especially in the area of attracting foreign direct investments. As a result of these considerations, the new draft of the Land Books Act (2010) had been withdrawn from the procedure of Laws passing. Considering the actual situation and possible solutions, the relevant stakeholders gradually achieved consensus that already well know system of unique real estate cadaster system of land administration should be returned and implemented again throughout the territory of the Republic of Srpska. Passing of the new draft legislation was preceded by a scientific expert and public debate on the issue of solving problems in the field of real estate and property rights registration.

One of the main arguments for the implementation of unique real estate cadaster record includes the past experience and already existing infrastructure, dated from the period of Socialist Republic of Bosnia and Herzegovina. Namely, in SR BiH, after 18 year of public debate, the Law on survey and Cadaster was passed in 1984[24], which became the legal basis for the implementation of real estate cadaster system of land administration within the public executive authority (the Republic Administration for Geodetic and Property Affairs). Ten-year period for alignment of data in land books with those in cadaster was provided by the Law. However, the turbulent events that followed in the territory of SR BiH in the last decade of the twentieth century prevented the realization of this project. In spite of the difficulties, the concept of cadaster system proved to be effective during the period of its implementation. After the establishment of the Republic of Srpska as a full entity within Bosnia and Herzegovina, achieving the results anticipated by that project had been additionally prevented by imposed Law on Land Books, which was in force from 2003 up to 2012. This legislative solution is considered to be imposed because of its insensitivity to cultural, historical and socio-economic conditions that characterize the situation in the Republic of Srpska. The decision to return to the concept of unique real estate cadaster system is considered as adequate step to address the problem of discontinuity in land administration in Republic of Srpska. Apart from that, this concept of land administration is in line with the European Union strategy for spatial information infrastructure and management, which enables the Republic of Srpska to integrate into the regional and European projects in the field of property management. The preparation for the land administration reform started in 2010 when the Program of survey and establishment of the real estate cadaster for the period of 2011 to 2015 was adopted by the National Assembly of the Republic of Srpska.[25] Two years after, in 2012, the Law on state survey and cadaster of the Republic of Srpska was brought into force and the implementation of the activities defined by the Program mentioned above has started throughout the whole Republic.

24 Zakon o premjeru i katastru nekretnina, Službeni list SR BiH, br. 22/84, koji je kasnije revidiran u tri navrata 12/87, 26/90 i 36/90 (Law on Land Surveying and the Real Estate Cadaster, Official Gazette of SR BiH, no. 22/84, which was amended three times 12/87, 26/90 and 36/90).

25 Program of survey work and establishment of real estate cadastre for the period 2011-2015, 2010, Republic administration for geodetic and property affairs, Republic of Srpska, Banja Luka.

Empirical survey of the citizens' attitudes about the accuracy and reliability of land administration concepts in the Republic of Srpska

The subject of this survey is to examine the attitudes of the citizens of the Republic of Srpska about which land administration records they consider as more accurate and thus more reliable - land books or cadaster. The respondents were asked two questions: "Which record do you consider more accurate in achieving your rights in regard to real estate in the Republic of Srpska?" and "Which record do you consider more reliable in achieving your rights in regard to real estate in the Republic of Srpska?"

The two questions survey was conducted using quantitative method. The short questionnaire was chosen as a research instrument. Primary data were statistically analysed and presented in tabular and descriptive manner. The research sample included 1705 respondents - citizens of the Republic of Srpska from 51 municipalities throughout the whole territory of the Republic, who own a certain property and had personally come to the Republic Administration for Geodetic and Property Affairs of the Republic of Srpska.

The research was undertaken from 1.11. up to 30.11. 2012 in the cadaster offices in 51 municipalities of the Republic of Srpska: Derventa, Vukosavlje, Rudo, Sololac, Srbac, Istočno Novo Sarajevo, Mrkonjić Grad, Ribnik, Istočni Stari Grad, Donji Žabar, Prijedor, Kostajnica, "PJ Srebrenica PK Skelani", PJ Petrovac i Drinić, Banja Luka, Kneževo, Lopare, Nevesinje, Čajniče, Šamac, Teslić, Novi Grad, Vlasenica, Rogatica, Šekovići, Doboj, Zvornik, Kalinovik, Gradiška, Ljubinje, Modriča, Foča, Laktaši, "PJ Zvornik PK Osmaci", Bileća, Kozarska Dubica, Gacko, Han Pijesak, Brod, Pale, Milići, Srebrenica, Bratunac, Petrovo, Pelagićevo, Istočna Ilidža, Višegrad, Prnjavor, Ugljevik, Čelinac, Bijeljina, Trebinje.

Table 1. The accuracy of data about the property rights in the Republic of Srpska

Which record do you consider more accurate in achieving your rights in regard to real estate in the Republic of Srpska?	
Cadaster	1201
Land Books	243
I do not know	157
Undecided	104
Total number of respondents	1705

Source: Authors' calculation

When it comes to the accuracy of land administration records, even 1201 of the total 1705 respondents consider cadastral data more accurate than the data in land books (71% of total sample). Land books data are considered as more accurate by 243 respondents (14% of total sample). The answer "I do not know" was chosen by 157 respondents (9% of total sample), whereas 104 respondents were undecided (6% of total sample).

Table 2. The reliability of data about the property rights in the Republic of Srpska

Which record do you consider more reliable in achieving your rights in regard to real estate in the Republic of Srpska?	
Cadaster	1047
Land Books	390
I do not know	154
Undecided	114
Total number of respondents	1705

Source: Authors' calculation

As far as the reliability of property rights records in the Republic of Srpska is concerned, 1047 respondents expressed their attitude that cadastral record is by far more reliable then the land books, which is 61% of total sample. Land books record is preferred by 390 respondents (23% of total sample). On the research question asked 154 respondents answered with "I do not know" (9% of total sample) and 114 respondents were undecided (7% of total sample).

Furthermore, based on the research from 2009 conducted in 39 municipalities (1000 respondents) in the whole territory of Bosnia and Herzegovina (cadastre and land books offices) it was concluded that the citizens are more satisfied with the work of cadastre offices then the land books offices.[26]

Based on the primary data of the empirical survey, backed also with the previous research and secondary data, it can be concluded that solid majority of the citizens of the Republic of Srpska consider the cadastral information as more updated, accurate and thus more relevant for the achievement of their rights in regard to real estate in the Republic of Srpska. This affirmative public attitude toward the cadastral system additionally justifies the decision to replace land books system with the unique real estate cadastre. Positive public opinion about the cadastre system also facilities the implementation of the whole range of activities needed for the full reform of land administration in the Republic of Srpska.

Conclusion

The implementation of the land books system, which was in force from 2003 up to 2012 in the Republic of Srpska, did not result in the improvement of accuracy and reliability of land administration records. Very low level of property data consistency between land books and cadaster caused over time serious problems in the domain of tax system, legalization of buildings, sales transactions in the property market, as well as domestic and foreign investments. The inefficiency of land books system in the Republic of Srpska represented the major reason for the reform of land administration. The reform began with passing the reforming Law on state survey and cadaster of the Republic of Srpska and its adoption in the National Assembly of the Republic of Srpska in the year 2012. Although first this step is very important because it sets the legal basis for the practical implementation of the

26 Reforma zemljišne administracije u BiH-društvena procjena 2010 - konsolidovani izveštaj, 2011, Prism research, Sarajevo.

unique real estate cadaster system. Based on the historical overview and the institutional background of the land administration system in the Republic of Srpska it can be concluded that there is solid experience, infrastructure and capacity for the implementation of the unique real estate cadaster concept. Apart from that, the results of the empirical research clearly indicate that citizens of the Republic of Srpska, as major users of public record services, consider cadastral data by far more accurate and reliable than those of the land books. Therefore, having in mind the historical, traditional, institutional and legal aspects together with the substantial public support, the choice of cadastral instead of land books system of land administration is considered to be fully justified. Apart from that, through its well-known INSPIRE Directive the European Union recommends the member states the implementation of unique real estate cadaster. Accordingly, it can be concluded that the reform of land administration in the Republic of Srpska is in line with the EU standards. The compliance of the land administration reform with the European Union recommendations enables the Republic of Srpska to join the European land management network, benefit from access to broader knowledge, expertise and information, and strengthen its cooperation with land administration institutions, both at regional and the European level.

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REFORMA ZEMLJIŠNE ADMINISTRACIJE U REPUBLICI SRPSKOJ - KA JEDINSTVENOJ KATASTARSKOJ EVIDENCIJI NEKRETNINA

Daliborka Petrović[27], Tihomir Gligorić[28], Dragana Gnjatović[29]

Rezime

Predmet ovog rada je tek započeta reforma zemljišne administracije u Republici Srpskoj. Reforma se odnosi na primenu koncepta jedinstvene katastarske evidencije nekretnina i prava na njima (prijava zemljišta i zgrada), i napuštanje prethodnog sistema zemljišnih knjiga. Cilj rada je da ukaže na glavni razlog za reformu zemljišne administracije i posebno na razloge za izbor sistema jedinstvene katastarske evidencije umesto sistema zemljišnih knjiga. U tu svrhu, analizirani su i naglašeni istorijski, institucionalni i pravni aspekti. Pored toga, mišljenje javnog mnjenja je uzeto u razmatranje prezentovanjem rezultata kratke ankete. Prema rezultatima istraživanja, građani Republike Srpske smatraju katastraske podatke daleko ažurnijim i pouzdanijim u odnosu na podatke iz zemljišnih knjiga. Povrh toga, pažnja je posvećena i standardima Evropske unije iz oblasti zemljišne administracije jer Evropska unija preporučuje državama članicama primenu sistema jedinstvene katastarske evidencije. Na osnovu ovih razmatranja, izbor sistema jedinstvene katastaraske evidencije umesto sistema zemljišnih knjiga u Republici Srpskoj predstavlja razuman i opravdan korak ka reformisanju zemljišne administracije.

***Ključne reči**: zemljišna administracija, Republika Srpska, katastar nekretnina, zemljišne knjige*

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PUBLIC-PRIVATE PARTNERSHIP IN SERBIA: LEGAL FRAMEWORK AND THE POSSIBILITY OF ITS ESTABLISHMENT IN RURAL AREAS AND AGRICULTURE

Milan Rapajić[1], Sveto Purić[2], Jelena Purić[3]

Summary

The aim of this paper is to present some legal solutions from this Law, particularly the legal forms of public-private partnership foreseen by the Law: institutional and contractual. One of the most significant positive results of public-private partnership in the future should be its application in rural areas and agriculture in order to support the natural predispositions, that is advantages of the Republic of Serbia in certain economic branches (particularly in agriculture).

The authors applied the legal method in combination with the comparative. Also, it was applied case study regarding to the establishment of public-private partnerships in agriculture. One of the purposes of this paper is to influence on the scientific community to prefer public-private partnership, in requirements for encouraging agricultural production, then pure privatization (the purchase of large agricultural areas). Land is the national treasures and should be owned by domestic residents and legal entities.

Key words: *public-private partnership, legal framework, rural areas, agriculture*

JEL: *Q15, Q18*

Initial considerations on public-private partnership

Public-private partnership is a new legal institute in the Republic of Serbia legal system. Unlike Serbia, in some countries the public-private partnership has been regulated in

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positive law for more than two decades[4]. In the EU states, this institute has started its legal life back in the 1990s. As for the countries which once formed Federal Republic of Yugoslavia, Slovenia enacted the new public-private partnership legislation in 2006 (the Law on public-private partnership, no. 127/2006).As for concessions, in Slovenia this area is regulated by the Law on economic public services (the Law on economic public services, no. 32/93 and 30/98). In the Republic of Croatia, the public-private partnership was regulated in positive law by the adoption of the Law on public-private partnership in 2008(the Law on public-private partnership, no. 129/2009).Before enacting this Law, this field had been covered by the Law on concession from 1992. "During the time when there were no direct legal norms regulating this field, the Republic of Croatia passed the guidelines for the application of contractual forms of public-private partnership in 2006. Also, there existed a Decree on giving the prior consent for signing the contracts on public-private partnerships according to the model of private financial initiative from 2007. This Decree was based on the budget laws and regulated the procedure of giving a consent for signing the contract on public-private partnership, but exclusively for its contractual form (the model of private financial initiative), while there were no norms regulating other forms of public-private partnerships" (Rapajić, 2013). The public-private partnership is the subject regulated by several laws in the Republic of Montenegro, such as the Law on participation of private sector in performing public services from 2002(the Law on participation of private sector in performing public services, no. 20/2002) and the Law on concessions from 2009(the Law on concessions, no. 8/2009). Given the fact that the first law also regulates the matter of concessions, *lex specialis* from 2009, which today regulates this matter in Montenegro, derogated the provisions refereeing to concessions from the first law. As for Republika Srpska, public-private partnership is regulated by the Law on public-private partnership enacted in 2009 (the Law on public-private partnership in Republika Srpska, no. 59/2009).

In European Union, public-private partnership is not recognized as a unified legal institute. Thus, there is no a single supranational law which either directly or indirectly binds the member states to apply the regulations related to public-private partnership. Given the fact that public-private partnership actually originated and is being widely applied in the EU countries, this institute could not escape the attention of its bodies. Thus, the European Commission adopted the Guidelines for successful public-private partnership in 2003 that serve as instructions for defining the issues of key importance for successful realization of this type of economic and legal linkage. The European Union offered significant support to public-private partnership by publishing Green Paper on public-private partnerships and community law on public contracts and concessions in 2004. Sustainability of public-private partnership as a legal institute for more than two decades, positive effects of its application and its spreading into legal systems of the countries which had not recognized it before, speak in favour of the fact that in certain economic areas public-private partnership remains the most profit-

4 The UK is among the first states of the European Union to introduce a public-private partnership in the legal system in 1992 during the government of Conservative Prime Minister John Major called Private finance initiative.

able form of economic activity. The preceding review on public-private partnership raises a logical question - what are the reasons for establishing public-private partnerships? Before we move on to theoretical definitions of public-private partnership from the aspect of positive law, we need to answer this question first. "Public-private partnership is a direct consequence of the country's need to, instead of obtaining a loan for building and development of the infrastructure and sustainable system for performing services of public interest, establish partnership relations with private capital" (Cvetković, Milenković Kerković, 2011). This partnership actually represents a unique market transaction which may be manifested in various forms within a wide scope of public services. There is a state or local government ordering services on one side and a private company providing services on the other side.

Some characteristics of public-private partnership make this relationship rather complex. First, the motives of service providers are different from those of their clients – public authorities. Second, when the public and private parties agree to cooperate, they have to develop adequate planning, supplying and managing practices, as well as organizational schemes and payment methods. These adequate planning and managing practices should lead to the achievement of goals that justify the establishment of public-private partnership and their mutual interests. For private subjects this relationship with public sector partner represents an economic endeavour aimed at gaining financial profit out of this business activity. The benefits of public sector cannot be measured as the benefits gained through a business activity. The realization of public sector goals is based on the activities that are presumed to bring realistic progress in achieving the public interest. The activities undertaken by the partner from the public sector in order to achieve its goal can be divided into several elements: defining an adequate legal structure that will deter the private sector party from wrongdoing, securing minimum risk in performing the activities of general interest, ensuring successful application of the public-private partnership enabling the realization of social goals since the responsible state that invests the budget resources into this partnership, must pay attention to the elements of social justice. The state organs, particularly, the government, as the chief subject of economic policy (the constituent part of the state's national policy) must ensure that the entire process of the establishment and implementation of public-private partnership is transparent, and that adequate control mechanisms are set up by the state, non-governmental organizations and the general public.

Legal framework for public-private partnership in the Republic of Serbia

This legal and economic institute has been recently regulated in the Republic of Serbia by enacting the Law on public-private partnership and concessions which represents a systematic legal frame in this field (the Law on public-private partnership, no. 88/2011). Besides the Law on public-private partnership and concessions, this matter is also directly regulated by the Law on public procurement (the Law on public-private partnership, no. 116/2008). This Law does not treat public-private partnership as a legal institute, but it directly regulates it since the Law on public-private partnership and concessions calls for the application of the provisions of the Law on public procurement. In this way these provisions indirectly form the constituent part of the Law on public-private partnership. In addition, the institute of public-private partnership is also directly regulated by the Law on

utility services (the Law on public-private partnership, no. 88/2011), which was enacted at the same time with the Law on public-private partnership and concessions. Namely, the Law on utility services regulates the public-private partnership in the field of utility services. The public-private partnership is also indirectly regulated by the system laws which govern the economic system of the Republic of Serbia., the most significant being: the Law on public property(the Law on public-private partnership, no. 72/2011), the Law on foreign investment(The Law on public-private partnership, no. 3/2002 and5/2003), the Energy Law,(the Law on public-private partnership, no. 57/2011, 80/2011 – amended and 93/2012), etc. As for the Law on public property, it creates the preconditions for property relations in the field of public-private partnership. Mentioned legal acts, or the so-called special laws – lex specialis for this field of public- private partnerships in specific areas such as the case with the Public Utilities Law or is it a general law - the lex generalis of which must comply with the Public-private partnership Law as the Public Property Law. This legislation should be interpreted in practice as extensive or in favour of the conclusion of various forms of public-private partnerships with the aim of fostering economic development and improving the quality of public services. Incorrect interpretation of the provisions of these laws can lead to an incorrect application of the institute of public-private partnerships and to have any negative effects. Because of that they required special knowledge to implement the law on public- private partnership , therefore, the membership of the Commission for Public-Private Partnerships as condition requires a person is a member of the Commission in addition to the citizenship of the Republic of Serbia has at least a high level of education and has particular expertise knowledge in the field of public-private partnerships, public procurement and concessions, as well as the rights of the European Union. So can be said that the Law on public-private partnership and concessions indisputably represents a step forward in the harmonization of the Republic of Serbia legal system with EU law but certain time will pass before its effects could be measured . By enacting this Law, the old law on concessions from 2003 ceased to exist. The experiences with this old law were not positive since it was hardly implemented in practice, or its implementation was just partial. The reason for this can be found in the fact that many officials avoided this law fearing that they could be held liable for wrong decisions made in this field.

Also, there is a predominant public opinion that only privatization is the cure for the problems in public sector. It is rather an extreme opinion that every economic field can be privatized because it is only the private capital that has a necessary degree of flexibility to offer the most optimal solution for a certain problem. Therefore, the reason why the Law on public-private partnership and concessions was passed was to achieve the goals such as: enhancing the financial capacity for building the infrastructure, improving the quality of public services, allowing a transparent procedure for the use of public resources and harmonizing the national legal system with EU law and best practices. The subject matter of the Law on public-private partnership and concessions is broadly defined. The Law regulates the conditions and methods for defining, proposing and approving the partnerships, defines the subjects authorized to propose and realize the projects of public-private partnerships, the rights and duties of the public and private sector partners, the form and the content of the public contract, with or without the concession elements, the legal protection in the procedure of awarding

the public contract, the subject of concession, as well as all other issues which are significant for the realization of a public-private partnership (the Law on public-private partnership and concessions, no. 88/2011). In our further text we will confine ourselves to describing the forms of public-private partnership.

Legal forms of public-private partnership

Public-private partnership is achieved in two ways, that is, it is organized in two legal forms: contractual and institutional. Concessions form a special part of public-private partnership. Contractual public-private partnership is based on a contract which the parties sign to regulate mutual rights and duties in the realization of the project of public-private partnership[5]. This contract may also contain the elements of concession. The contents of this contract are legally prescribed and such a contract is called a public contract[6]. There is a possibility that the contents of this contract are regulated by contracting parties on the principles of will and autonomy and according to the provisions of Civil Obligations Law. It is a form of an administrative contract with prevailing element of public law. "An administrative contract shows that there is not only a division on public and private law, but it also makes a wide distinction between public-administrative and obligatory-private law" (Kavran, 1993).This type of contract should be regarded as long term and it is described by the following statement: "Not every transaction fits comfortably into the classical-contracting scheme. In particular, long-term contracts executed under conditions of uncertainty are ones for which complete presentation is apt to be prohibitively costly if not impossible"(Williamson, 1979). Institutional public-private partnership is based on a legal relationship between a public and private sector partner in the capacity of the members of a joint association, that is a company, which carries out the project activities related to public-private partnership. The legal relationship between the members of a joint association may be manifested in practice in two legal forms: as the joint founders of the company which bring their founding capital into the joint company or as the private partner's investment into the company in exchange for the ownership share that is the equity increase of the existing company. The joint association or the company which the Serbian legislator calls "the association for specific purposes" is founded for the purpose of the realization of the project of public-private partnership according to the Law on business associations - companies.[7]

5 Concessions represent a subtype of contractual public-private partnership and are based on public contracts that regulate commercial use. That is economic valorization of natural resources or goods in general use which fall under the regime of public property.

6 The legal definition of public contract, as the contract on public-private partnership, with or without the concession elements, states that it is prepared in a written form and signed by two parties (a public and a private sector party) for the purpose of realization of a project on public-private partnership and regulates their mutual rights and duties.

7 The Law on public-private partnership and concessions (Article 6.1.6) foresees that the association for specific purposes, as a business association, may be established by a private or a public partner even for the purpose of signing a public contract.

The possibility of establishment of public-private partnerships in rural areas and agriculture

In practice, public-private partnerships can cover a wide range of activities depending on the property relations, invested resources, partners involved, and a number of other factors. The projects themselves can be implemented in large infrastructural areas, but also on a micro level, in small local communities. Public-private partnerships are based on the distribution of risks and profit among the partners. They are particularly established in the field of infrastructure, in the projects which require large investments and long period of repayment. This type of business cooperation between public and private partners, which assumed a legal form in the Republic of Serbia positive law, was originally established in the sectors demanding big investments, such as transport infrastructure, utility services, and similar infrastructural endeavours. Before the appearance of public-private partnerships the participation of private sector on a legal scene and in business reality was traditionally restricted to planning, designing and building activities based on the contract on service providing signed with relevant state authorities. To translate this to the language of civil obligations law – this was a simple service contract (the contract for performed services), or a form of mixed contract which combined the elements of a service contract and a building contract. The new legal solutions bring new quality in the relationship between public and private partners. They assign a more active role to private sector, not only in the process of the realization of joint project activities, but also in decision-making process.

The social role of public-private partnership allows public entities, the representatives of business sector and civil society to assume the responsibility for development and to enhance their environment by joint action. In developing, and particularly in undeveloped countries, successful private sector, that is the representatives of "Large Cap" are expected to be socially responsible and the leaders in the battle against poverty and for social inclusion that would eventually lead to the improving of life quality on both the micro and macro levels. Before we proceed to discuss the possibility of establishment of public-private partnerships in rural areas, we will mention certain negative arguments which do not favour public-private partnership. The negative aspects of the cooperation between public bodies and private partners are reflected in the following: it is not easy to reconcile the interests of public and private sector. The public sector interest is manifested in the form of already mentioned battle against poverty and striving towards sustainable development. The private sector interest is governed by the incentive for profitability and income increase. Public-private partnership, as well as other forms of cooperation where there are multiple subjects of different legal status, bears the risk of increased corrupt behaviour. It can be manifested in the misuse of public funds for the purpose of subsidizing private and personal interests. In societies which strive towards stable systems governed by the rule of law, but in which these systems are just under construction and without prior experiences in this field, public-private partnerships can lead to favourable treatment of certain companies and unfair business conditions. This is particularly dangerous in the areas of public interest, such as energy, utility services, health protection that may be subjected to complete commercialization through the projects of public-private partnerships. Namely, if their services were charged at a market price, the principle of social justice would disappear, along with the principle of rule of law, not to mention the fact that

this would represent a wilful disregard of the interest of poor citizens. Regardless the criticism which has to be taken into consideration when applying the Republic of Serbia Law on public-private partnership and concessions, the economy wishing to be competitive on the world market should encourage the establishment of public-private partnerships in the field of service providing and infrastructure building.

Since Serbia is characterized by uneven regional development, the government policy should more insist on the implementation of rural development projects. The rural development itself "represents a complex development of a particular rural area on the bases of available natural, material, infrastructural and human resources carefully managed for the purpose of maintaining the balance between nature and human beings" (Zakić, Stojanoivć, 2008). This is an opportunity for the realization of the legal framework of the public-private partnership in practice. Since Serbia was predominantly agricultural country in the past, the future negotiations for the access to the European Union should focus on agriculture and agricultural products where Serbia has competitive advantages over the neighbouring countries. Serbia possesses unexploited potentials for enhancing the cooperation with private and business sector for the development of rural areas. The global food industry has increased its turnover and the food market has been liberalized to a great extent, yet in Serbia, rural infrastructure is undeveloped, and rich natural resources are not sufficiently exploited. The forms of global public-private partnerships related to rural areas are mostly focused on organic food industry, forest industry, promotion of rural tourism or certification of ecological products. Serbia should learn from foreign experiences and best practices in this field. According to these experiences, the cooperation between public and private sectors in the projects and activities related to rural areas has followed several paths. Thus, for example, the establishment of public-private partnership in the field of agriculture has been realized through contacts and cooperation leading to enhancing the efficiency and effectiveness of applied research, exchange of knowledge and new technologies in agriculture, enhancing the availability of new products and services to rural population , as well as encouraging of innovations in food industry and agriculture. The cooperation of private and public partners aimed at the advancement of agricultural production should also include the support in facilitating the international trade and access to foreign markets. The public-private partnership in rural areas of the Republic of Serbia should contribute to the improvement of the quality of life making medical and social services available for larger number of inhabitants in these areas. Besides the improvement of medical conditions in rural area, these partnerships can enhance the quality of education creating the ambient for larger competitiveness of rural labour force on labour market.[8]

Finally, we would like to underline that public-private partnership can have positive impact on the improvement of overall business conditions and entrepreneurial environment in local communities that would attract future investments. It is characteristic for developing countries that projects of public-private partnerships, such as building of infrastructure,

8 Public-private partnership in this area would assume that the private partner signs the contract with a health authority and is in charge of certain medical services in rural areas, such as certain preventive and educational activities, or offering assistance to elderly and disabled population.

promotion of local communities, etc., are also intended to solve large infrastructural problems in agriculture. Namely, agriculture, as the branch of economy should be given special attention - instead, it has been constantly neglected by the state" (Purić et al., 2012). In order to prevent the neglect of such an important economic field in Serbia, public-private partnerships (in all forms recognized by the Republic of Serbia Law on public-private partnership and concessions) can play the key role in the modernization and increase of agricultural production in Serbian rural areas that have natural predispositions for rapid development, but which, unfortunately have witnessed a decline of agricultural activities. Therefore, a Decision passed by the Nis City Council in June of 2013 on establishing public-private partnerships in the field of agriculture was a promising sign. The goals of this Decision were to encourage the economic and social development of the City of Nis, improvement of living standards and the material position of its inhabitants, development and growth of agricultural production on its territory, raising the revenue, that is the city budget and the development of other agriculture-related activities (trade, tourism, catering, crafts, etc.). By passing this Decision, the City of Nis, as the public sector representative has created the ambient to enter into partnership with private sector partner setting up an association for specific purposes pursuant to the provisions of Republic of Serbia Law on associations and companies. The goal of this association would be to implement the projects mostly related to the production of healthy food and organic seeds. The first step would be to build greenhouses for these purposes where the Israeli company MC GROUP appears as the private sector partner. This business association plans to build green houses on the land of 60 ha located in Gornja Toponica, near the city of Nis that will produce organic food for export. According to the Republic of Serbia Law on public-private partnership and concessions, the realization of this partnership between the City of Nis and Israeli company can start after the adoption of the City Council Decision by the City Assembly and after obtaining the approval from the Ministry in charge of agriculture.[9]

Serbia and the former Yugoslavia were rich in agricultural combines. The collapse of the economy based on the concept of self-management and the transition to a market economy in the last decade of the twentieth century, unfortunately, did not foster the development of agricultural production in Serbia until 2012. There have been many failed privatization. This is also related to agricultural combines. Thus, the sale of agricultural combine Sombor has repeatedly been unsuccessful, and there was not the successful transformation of the ownership of state property into the hands of private owners of capital. Just in the 2008 there were performed three unsuccessful attempts of auction privatization. Agricultural Combine Sombor was sold from the fifth attempt to Abrado the company from Zagreb. This data suggests that it was difficult to attract investment in Serbian agriculture. The situation, however, has changed for better. The company Al Dahra from the United Arab Emirates appears as a buyer of several Serbian agricultural combines such as Agrobacka - Bac, Bratstvo i jedinstvo - Neuzin, Dragan Markovic – Obrenovac, Jadran - Nova Gajdobra, Mladi borac - Sonta, Vojvodina - Starcevo. Buying a new company made mixed ownership structure and 80% will

9 Positive effects of this partnership are expected in the form of new job positions (around 400) and opportunities for subcontractors in the later phase of this public-private partnership.

be owned by Al Dahra and the rest will be owned by the Republic of Serbia and Belgrade City.[10] As we can see, here we talk about the privatization process, which was conducted on the basis of the Law on Privatization. We believe that the approach of the concept of public-private partnerships is more acceptable for long-term agricultural development in Serbia from the standpoint of the national economy (based on this concept, agricultural land remains in the property of the state). Public-private partnership requires a long-term cooperation between the public and private partners where different kinds of things that were the object of the rights of state or public property (and today it is a public property in Republic of Serbia) are transferred to long-term use (more precisely usufruct) to the private partner. In this case, it is agricultural land which the private partner, in the form of foreign or domestic investor, should use in such a way that raise the level of agricultural production, and during the project of public- private partnership, the greatest benefit in the form of extracts obtain private partner. The state with the natural predisposition for agricultural production such as Serbia could also have the use of the public private partnership in other industries. After the expiry of the contract signed form public-private partnerships, agricultural land as a subject of the contract, would be returned to the State as a public partner "because the state creates an economic policy that wants to help the development of certain regions, particularly those that legislator calls devastated" (Vasiljević, Dedeić, 2011). That shows previously mentioned privatization process, with a major partaker Al Dahra. The stated company will receive the right to use an area of 3.664 hectares of land currently used by the military establishment "Moravić" – section Karađorđevo for a period of 30 years. This land is owned by the state, and the Al Dahra will have to conclude the contract with the Ministry of Defense, which has the right of use over it. It is predicted that the new company will have to set aside 20 percent of the annual income achieved in this land. From the above it can be concluded that the public authorities of Republic of Serbia in the privatization process of agriculture combines, incorporated in it the elements of public-private partnerships through the institution of the land use right of the military institution "Moravić" – section Karađorđevo for a period of 30 years. Therefore in agricultural development, the concept of public- private partnership should have the advantage over pure privatization process because the agricultural land remains in state ownership and in privatization it is no longer an object of ownership of the public domain. Public- private partnerships and the possibility of establishing in agriculture can be viewed from the perspective of enlargement of agricultural land. It is thought on the way to a number of small farmers group their land to certain agricultural combine (part of the land of the agricultural complex) and create much larger agricultural land (for example a few hundred acres), which becomes the economic base of society for special purposes for the institutional form of cooperation between the two parties - the state, which owns the agricultural combine and private partners, which represents a collective of small farmers.

Conclusion

As we stated at the beginning of this work, public-private partnership is a new legal institute in the Republic of Serbia positive law. The Republic of Serbia Law on public-private

10 When we talk about Belgrade Agricultural Corporation, new company will buy land, from this corporation of the company 7. Juli.

partnership and concessions is the main system law whose content is focused on substantive law provisions governing the issues of the subject matter, actors and forms of public-private partnership, as well as the rules related to the contract on public-private partnership. The Law explicitly underlines the importance of the issue of public interest as a constituent and crucial element of this form of legal and economic association. However, this would be a simplified view of a very complex systematic legal act because its provisions are aimed at ensuring a relative equilibrium of public and private interests which are unavoidably present in every project of public-private partnership. Also, the objective of these provisions (and each law tends to incorporate the equity aspect in order to avoid the negative epithet of an unjust law) is to protect the interests of both contracting parties, so it is obvious that the principle of equality constitutes the essential principle of this law. The Law on public-private partnership and concessions foresees the realization of the principle of equality in the procedure for the selection of private sector partners underlying the principle of their equal and fair treatment in the phase of awarding the public contract and forbidding discrimination on any ground. This assumes the principle of open market competition which is in practice realized through the protection of competition in the private partner selection procedure. The legal framework of public-private partnership and concessions, mostly embodied in the mentioned law, forms a stable basis for the realization of such projects in practice. Yet, this legal framework is not flawless. We would like to underline the objection related to Article 26 of this Law. This Article foresees the possibility that private entities (both companies and individuals) may propose projects to public sector bodies (the state organs, as well as the provincial and local government organs) for the realization of public-private partnerships and the public sector bodies are entitled to take these proposals into consideration and for possible approval. If it is believed that a proposal of public interest and if a public body decide to approve such a project, this body acts in accordance to Article 26 of this Law. It is obvious that this procedure of awarding a public contract is not adequate, since the public sector may get information related to certain projects, and, yet, reject them. It should be noted that Serbia is not sufficiently experienced in applying the regulations related to public-private partnerships. We can mention the unsuccessful attempt to establish public-private partnership related to the concession for Corridor 10, although there have been many other examples of failure. Yet, in this paper we have attempted to provide information related to the first formalized initiative for the establishment of public-private partnerships in the field of agriculture, which is encouraging news. As we mention public-private partnership should be favoured in agriculture over pure privatization process. This means that we should not be hopeless at the beginning of the application of a new legal institute, but we should give it a full support for a successful implementation. The benefits of this form of cooperation between public and private sectors are obvious in the field of utility services, such as, for example, waste management, regional waste dumps, or waste recycling. This form of cooperation can also be successful in the exploitation of wind, sun and geothermal energy, as well as in the development of rural areas and agriculture. Public-private partnership is essential for the development of rural areas since, in Serbia, they face the problems of small-scale, non-competitive farming, decrease and aging of population and high unemployment rate. So far, rural development has concentrated on the improvement of agricultural performance, competitiveness, consolidation of soil and enhanced market orientation. The application of the projects on public-private partnership,

as one of new rural-oriented measures, would focus on, among other things, securing the principle of environment protection in agricultural production and sustainable exploitation of resources. The goal is to achieve a balance between agricultural production and other economic activities, environment protection and social development. It is necessary to apply the measures that will enable public-private partnership to achieve the diversification of rural economy by applying socially, economically and ecologically sustainable techniques in order to improve the quality of life in rural areas and to decrease poverty, and the destruction of environment and natural resources.

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JAVNO-PRIVATNO PARTNERSTVO U SRBIJI: PRAVNI OKVIR I MOGUĆNOST ZASNIVANJA U RURALNIM OBLASTIMA I POLJOPRIVREDI

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Rezime

Cilj ovog dela rada je bio da se prikažu pojedina rešenja Zakona o javno-privatnom partnerstvu i koncesijama i vrste javno-privatnog partnerstva. Tu se misli na pravne forme javno-privatnog partnerstva koje Zakon poznaje – institucionalno i ugovorno. Jedan od najvažnijih pozitivnih rezultata javno-privatnog partnerstva u budućnosti bi trebala da bude njegova primena u ruralnim oblastima i poljoprivredi kako bi se podstakle prirodne predispozicije odnosno prednosti Srbije u pojedinim privrednim granama (misli se pre svega upravo na poljoprivredu).

U radu autori su primenili pravni metod u kombinaciji sa uporednim. Takođe, vršena je analiza slučaja vezano za zasnivanje javno-privatnog partnerstva u poljoprivredi. Jedna od svrha članka je da se utiče na stručnu javnost da u zahtevima za podsticanjem poljoprivredne proizvodnje se prednost da projektima javno-privatnog partnerstva nad čistim privatizacionim procesom odnosno kupovinom velikih poljoprivrednih površina. Zemlja je nacionalno blago i treba da ostane u vlasništvu domaćih fizičkih i pravnih lica.

Ključne reči: *javno-privatno partnerstvo, pravni okvir, ruralne oblasti, poljoprivreda.*

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THE EFFECTIVE PROCESSING MODEL OF THE BUSINESS PLAN FOR THE AGRICULTURAL PRODUCTS

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Summary

The global financial crisis is caused by the structural disturbance, sudden lack of capital and the huge mass of liquid funds for regular maintenance of economic trends in the world. Highly developed countries are threatened with the risk of long-term recession. In the less developed countries, like ours, the global crisis had a much greater risk than the general financial collapse, due to limited resources to quickly overcome the financial insolvency. For Serbia, the way out of financial crisis lies in a faster start-up of available unused national resource, where a relatively small investment with a new fresh capital can create new job positions in very short time, GDP growth and the fastest routing of new products and export services. New Economic Development Strategy of Serbia depends on the skill and speed of running the huge resources available in the agricultural sector and industries that rely on the agricultural sector. The existence of more than 400,000 registered farms and with several thousand small and medium-sized companies for the processing of primary agricultural products and logistical support represent a real opportunity for a faster exit from the crisis. However, available resources in the agricultural sector are still very limited with range of products and services with a higher degree of processing, which could be offered to our traditional foreign buyers. Even though there are conditions for development of new export-oriented business ventures in Serbia, there is a lack of business ideas, knowledge and skills necessary to start such a business. In order to start new business ventures hundreds of good business plans must be provided in a very short period. A business plan is an important document for providing the necessary financial resources from public funds or from commercial banks. In crisis conditions, it is difficult to choose an appropriate subject of a new business plan. Thus, the authors paid special attention to defining the optimal choice of subjects and a business plan in a crisis atmosphere. The expected effects of

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reducing unemployment and creating new jobs were not achieved with the activities of government institutions in underdeveloped areas in the agricultural sector with the financing from foreign grants. This is a limiting factor for the faster way out of the crisis and the promotion of rapid economic growth. It emphasizes the importance of implementation of previous positive solutions to check market mobility of new programs, selection of the best technology and equipment, with the lowest cost per unit, in order to achieve competitiveness in the market in a crisis situation. A good business plan is based on a credible budgeting for the necessary financial resources, without which there will be no successful business. Proper analysis of the investment and business risk should provide security to entrepreneurs and owners of capital for investment given in the business plan. This research is primarily intended for current needs and implement in practice, as a contribution to more rapid initiation of new economic activities in the agricultural sector for the country's rapid exit from the crisis that occurred.

Key words: *business plan, agricultural organizations, agricultural markets, financial incentives and new jobs.*

JEL*: M21, Q13, Q14*

The starting point for effective business plan in crisis conditions

An effective business plan (Dragojević, 2002) is usually prepared prior to the business and/or investment decisions. If this is done in critical conditions it is necessary to establish the main focus of activity of the crisis on the business entity (general illiquidity, an unfavourable investment climate, reduced purchasing power of population, significantly exceeding of the approved budget deficit, etc.). In such circumstances, an effective business plan seeks to use the best subject of future business activities, which will resolve the identified limiting factors for the successful continuation of business. Timely and proper selection of appropriate items of business plan provides the timely adoption of optimal business and/or investment decisions. This means that the business plan (Dragojević, Dikić, 2011) perceived correct directions of the projected business enterprise, and identified potential business and investment risks on time. Therefore it is possible to neutralize or minimize detected risks and set up adequate and safe business solutions.

In principle, an effective business plan is usually drawn in preparing loan applications submitted to banks or other lending institutions for timely provision of necessary short-term or long-term funding for the successful conduct of business. In the crisis situation other business purposes can be expressed, and primarily for financial and business faster consolidation of the business entity, and define the appropriate exit strategy from the created of financial and economic crisis.

The key characteristics of effective business plan

Business plan is a key document for determining effective business and financial skills of legally organized company (Zakon o registraciji privrednih subjekata, 2009) or its management in order to:

- start a new business undertaking or establish a new company,
- introduce the alternative business programme which is more competitive on the market and enables successful opposition to competition,
- enable business and financial consolidation of the existing company that sunk into financial difficulties due to the obsolescence of products or services, loss of markets, lack of funds and other weaknesses in the previous period, and
- conduct planned expansion of existing operations, increase the capacities in order to meet increased demand of their products or services in the market and increase exports of goods and services.

An effective business plan, as an important starting business document of well-organized business enterprise is both a "tool" and a guide for the on-going management of successful entrepreneurial venture or business organization and is intended for:

- the entrepreneur who intends to initiate and conduct a new entrepreneurial venture,
- entrepreneur or legal entity that intends to develop new products and services, according to a prior assessment of market demand and the perceived intentions and actions by competitors,
- a legal entity that has decided to extend or change a registered business,
- investors who intend to make investments in the purchase of new enterprises, plants, joint ventures, etc.).

An effective business plan is primarily intended for owners and management of the companies for reliable and secure planning of business activities and designing optimal business results. The aim of every business plan is to check the profitability of investment (financial) in business ventures, especially if they are subject to tough competition and difficult economic conditions.

How to get good business ideas for creating an effective business plan

In the currently difficult economic conditions and tough competition in other businesses it is important, both for individual entrepreneur and a company (Zakon o privrednim društvima, 2011), to possess the right knowledge and skills for organizing a successful business enterprise, if they want to survive in the market and make a profit. The main goal of any undertaken business is to gain profit.

Profit is realized when an entrepreneur or a company successfully operates (Gogić, 2005), which means the best use of its available resources, contained both in mental and business acumen, their employees, all the material and financial resources engaged, in order to

successfully place its products or services on the market at the lowest possible operating costs and by achievement of the highest possible income.

This includes well-designed and defined subject of a business plan as a starting point for achieving defined business objectives, particularly in the current crisis conditions. In the business plan, the limit point of return in a crisis atmosphere is best measured by establishing the relationship of fixed and variable costs in a planned and realized business. When defining the subject of a business plan, at the current difficult business conditions, this relationship is first to be checked. A company, whose total business organization is weaker, especially with inadequate market research, marketing and distribution, has higher fixed costs. Organization with higher fixed costs of its products and services per unit, will therefore increase its selling prices, become uncompetitive, lose its business arrangements, realize less revenue, operate with losses and quickly go into bankruptcy.

In crisis conditions, the definition of objects of a business plan is usually expressed as follows: Selection of an optimal subject of the business plan is correlated with the degree of successfully organized and achieved management of available resources, to become competitive on the market in order to achieve maximum sales impact and security of the long-term income and profit.

In practice this premise means that finding the product (s) or service (s) in the optimum extent based on previous market tests of demand volume and levels of sales price trends (sales) that could be placed under the best conditions, with the structure of the available resources (fixed and current assets), (Shi Huai Zhang, 2011), applied technology, expertise of employees and successful management.

Methodological differences in the preparation of a business plan

Business plan for new business ventures, establishment of new entities and so, while preparing and drawing up an effective business plan focus the attention on the market research and finding the proper object of the intended venture. For the preparation of this type of business plan it is logical that a beginner first examines the market to which it intends to focus its attention, particularly in finding the right somersault of business and checks the market demand. This is the basis for determining its capabilities and ability for achieving planned sales and production (Francaviglia et al., 2013) of defined products or services. In doing so, it especially checks whether this increase in market demand represents current or permanent condition. It is also necessary to further determine the level of development of existing capacity and level of sales prices of other similar market players (competitors) in the local and global environment from the intended operation of the new program.

The main reason for not achieving the goal is that the official factors, foreign donors and consultants engaged to train unemployed people, do not perceive significant differences in the methodology for training persons in the development and use of effective business plans for new entrepreneurial ship and the establishment of new businesses, in relation to the methodology used to prepare business plans for existing businesses that have financial difficulties or need of expanding existing facilities.

In practice, there are important conceptual and methodological differences of preparation and drawing up effective business plans, for:

a) New business ventures and the establishment of new companies,
b) The purchase of the partial or complete facilities and enterprises,
c) The change of the business venture orientation during downturns,
d) For the business and financial consolidation of existing businesses, entrepreneurs or companies, which have come to financial difficulty, insolvency and continuing blockade of the current account of erroneous conduct of its work in the past?

Business plan for the existing business ventures and existing companies is methodologically quite different from the initial entrepreneurial venture. The focus in this case is placed on analysis of current status, weaknesses and shortcomings of the existing organization. First, it is necessary to identify and analyse mistakes and perceived shortcomings in the use of available resources, then analyse the objective difficulties in placement of existing products or services, that occur due to technological obsolescence of products, tougher competition from other market players, adverse effects of economic measures that emphasize the import of products and restricting sales of national products, and the like. During preparation and assembly of this type of effective business plan attention is focused on research for alternative solutions to overcome arising difficulties, better use of existing resources (Nendel et al., 2013), and quick improvement of the existing production technologies, improved business efficiency, in order to end the crisis and ensure profitable operations in the future. After examining the causes of such a situation and finding alternative solutions for the rehabilitation of future business, the following procedure is to conduction of detailed market research, assessment of market demand in order to redefine the business case, which will be then processed in the new business plan.

Particular aspects of defining a business plan in case of crisis conditions

Some banks and other financial institutions (Development Fund and similar institutions) determine for their loan claimants specific methodology for the preparation and presentation of effective business plans as a basis (Žarkić Joksimović, 1995) for reviewing and approving loans. Before preparation of the Business plan, entrepreneur, business consultant, company management and others must first choose the institution to which they will address for securing the necessary funds.

In crisis conditions, providers of financial support (Gogić, 2005) require from the holder of an effective business plan to accurately describe the selected product or service (Vignjevic Đorđević, 2008), in order to test the comparative advantages of the offered items in relation to other market operators, subject to similar businesses. When describing the chosen item, the business plan should include, in particular:

- the main characteristics of products or services,
- the needs of customers for the selected product or service,

- the willingness of consumers to pay the projected cost of the product or service,
- preparation technology on which the selected product is based and others.

In order to determine the possibility or chance of the selected product or service, there should be included the analysis of the situation in the industry or sector in which it operates, in order to resolve potential risks with appropriate modifications and other marketing measures (Severova et al., 2011).

Market research (Đuričin, Janošević, 2011) very important and responsible task in preparing and drafting a business plan in a crisis conditions. Narrowed market demand due to reduced purchase options imposes more detailed examination and description of any significant market events that are related to the selected item of business plan. From the experience of good practice in critical operating conditions, careful market research should include:

1) Detailed assessment of characteristics of the selected product (service),
2) In particular, a detailed examination of the potential scale of market demand,
3) The verification of the formation of the selling prices of selected products or services,
4) Check the behaviour of competition:
   - Identify main competitors and their strength?
   - Identify their business strategy?
   - Consider the advantages and disadvantages relative to competitors in their own business?
   - Consider the production and sales capacity of competitors,
5) Check the selected sales methods and distribution channels that they intend to include in effective business plan,
6) Selecting the best advertising techniques to promote selected products or services provided in an effective business plan is one of the key elements for successful implementation of business ventures.

The necessity of prior analysis of competition in the business plan

An important feature for effective drafting of a business plan is to select the appropriate items of business enterprise, then determination of the appropriate scope of business activities and selection of the right methodological approach. The collected information relating to market share achieved in meeting the needs of customers needs to be fatherly analysed for the different market segments and key products, which are the subject of an effective business plan. It is also necessary to analyse the sales channels of competition, and how they cooperate with the customers, especially if they use discounts and the like.

Selection and price definition in the business plan

The selection and definition of price is not a simple economic category. The economic entity, as the market participant trough defined by price can develop two types of strategies:

a) A market strategy of price competition and

b) A market strategy of non-price competition.

If the total costs (Kaplan, Antony, 1998) of products or services (variable and fixed) represent a lower bound or "floor" price, then the level of market demand determines the upper limit or "ceiling" prices. Application of pricing strategy assumes that an entrepreneur or a company has mass production and low production costs. Sellers who implement this sales strategy are forced to have a policy of flexible sales price. Prices change due to changes in the structure of operating costs (increase of variable or fixed costs) or because of increased demand for particular products or services. Price changes are possible when the competition does so. The essence of pricing implies a good knowledge of market changes and the ways in which changes in market demand may influence the formation of different prices.

Strategy of non-price competition in the market applies to improving the quality of products or services over the competition, better and more attractive packaging, providing favourable conditions of sale, deferred payment or other services (free transport of goods or similar free installation and free services). In non-price marketing strategy vendors keep prices stable. Non-price market strategy is applied by entrepreneurs that previously positioned their products or services highly on market, using permanent maintenance of the high quality, better marketing promotions, additional services and other market activities.

Analysis of competition in the business plan

Competition (Randić et al., 2008) is a rivalry between alternative market entities that address the same group of customers, where each is trying in its own way to increase sales, marketing share and gaining higher profits. Competition is a latent (hidden) risk to a particular manufacturer and market subjects. Elements through which competition operates in the market are: volume, structure and size of bids, price and product quality, technology, capacity management, and financial and marketing power (Vignjević Đorđević, 2010) of the subject. The subject of research and proper analysis of competition in a crisis atmosphere directed primarily to offer their system (range, sale price, payment terms, the system of distribution and post sales service, display and use of marketing mix, market position). Based on the survey formed database includes: name of the entrepreneur or business entity, name of a competitor, location, program supply for market area in which it operates, technological capability and the like.

The financial segment of an effective business plan in crisis conditions

The main objective of the establishment, commencement and conduction of any business ventures or the company is profit. Previously reviewed key financial parameters (McGuigan et al., 2012) in the process of preparing an effective business plan (determined by structure of fixed and variable costs, marginal rate of income, the coefficient of possible sales charges, maintenance of the required coefficient of raw and finished products, materials, the coefficient of discharge of obligations to creditors, the expected rate of gross profit before taxation, financial liquidity and leverage, participation interest on the borrowed funds in the

total income, etc.) determine the feasibility of a business venture, as to whether one could expect average earnings and return on total assets invested in a new businesses or financial consolidation of the existing business entity.

At the beginning of the preparation of the financial segment of an effective business plan it is necessary to make a realistic pre-estimation of the total funds required for the realization of the projected business enterprise. This amount usually includes: the amount of the excess, and the amount of missing funds (these funds are most often provided through banks loans, borrowed). Planning is done from the total amount of required financial resources (Shi Huai Zang, 2011) - for which purpose it will be used. In this regard, it is necessary to:

- calculate the required fixed assets,
- calculate the necessary working capital,
- calculate the expected costs of all operations,
- estimate expected sales revenues,
- make cash flow forecast for the next 3 years.

To forecast the necessary financial resources it is very important to determine: the days for setting the time of sale, time of keeping the supplies and raw materials, reconciliation of accounts payable. In the following text we will present an example of model with integrated calculations of necessary financial resources, proven in practice for many years and accepted by many financial institutions that provide financial support to individually entrepreneurs and small companies.

It is assumed that the founders and co-owners of small company made the decision to prepare a business plan, to ensure the necessary resources for financing production of contemporary plastic packaging which will be used in the food industry. Previous market tests have shown that planned products are highly in demand due to the increased needs of industry for processing agricultural products intended for export.

After completing market research, major customers are defined, as well as their annual needs. Based on this, project of technology used for new plastic packaging is completed, and appropriate equipment was selected, and in connection with that, the technical, material and labour standards were established. An overview of the annual fixed cost for the company business is also determined. Based on the technical standards, the amount of material needed for productions are defined and preliminary contracts for the delivery concluded. According to the adopted technical, technological and labour standards, budget for necessary funds is being calculated (financial segment of the business plan), for the planned production volume. To calculate the necessary financial funds, for this example, we used defined parameters as follows:

a) Projected annual sales volume of finished products is RSD 15.000.000.
b) According to defined technical standards, direct costs are 40% of revenue from total planned sales.
c) Fixed costs amount to 20.40% against planned sales.
d) Planned Amortization of permanent funds on average should be 10% per year

e) Depreciation for the first year is covered by the planned fixed costs, and the rest is covered by the planned funds for the purchase of fixed assets.
f) Sales financing are planned to be 30 days on average.
g) Funding of material, in accordance with the production technology and the on the dynamics from the contracts with suppliers, should be 85 days.
h) Planed supplies of material for the beginning of the production are in amount of RSD 1.000.200.
i) Planned purchases for the period in amount of RSD 6.300.000
j) Provided supplies to the end of the period amounted to RSD 1.5 million, and are slightly increased due to the planned increase in production for the period.
k) The suppliers agreed to deferred payment terms for 20 days without interest.
l) The value of the acquisition of fixed assets in accordance to the business plan is RSD 2.5 million.
m) The planned interest rate on the requested amount of the loan is 12% per annum.

Based on the previous parameters, the financial segment of an effective business plan includes:

1) Preparation of the projected income statement (check of business profitability),
2) The preparation of the budget for total funds required in business plan,
3) Checking the profitability and feasibility of an effective business plan
4) Preparation of the planned balance sheet in order to review the financial position and the certainty of return on invested funds
5) The preparation of the cash flow forecast to determine the ability of management to manage cash and generate invested money.

Here is the example for the preparation of financial segment of the effective business plan (Table 1):

Table 1. The model of calculation of necessary financial resources

I) Planned income statement			
1. Projected sales revenue			15.000.000
Less direct costs:			
- materials (40% of No.1)		6.000.000	
- gross wages (20% of No.1)		3.000.000	
Total direct costs		9.000.000	9.000.000
2. Marginal profit			6.000.000
Less:			
- Fixed costs (20,40% of No. 1)			3.060.000
3. The planned operating profit (margin)			2.940.000
Less:			
- Borrowing costs (12% per annum, 60% of No. 9)			351.666
4. Net profit before taxation			2.588.344

II) Projection of necessary assets				
5. Financing the purchase of fixed assets (2.500.000 – 250.000)			2.250.000	
6. Financing sales (15.000.000 x 30 days / 365)			1.232.877	
7. Funding maintenance of supplies (stocks)				
- initial stocks	1.200.000			
- supply in the period	6.300.000			
total	7.500.000			
- final stocks	1.500.000			
Net consumption of materials	6.000.000			
(7.500.000 x 85 days / 365)			1.746.575	
			5.229.452	
8. Use of the funds from suppliers (6.300.000 x 20 days / 365)			- (345.205)	
9. The total planned engagement of the funds			4.884.247	4.884.247
10. Net funds needed				2.295.913

Turnover ratio for engaged funds	3,07	Equity	918.365	40%
The planned rate of net profit	17,26%	Loan	1.377.548	60%
The rate of return on total funds invested	52,99%			

III) Projected balance sheet		
A) Assets		
I. Fixed assets		
- Purchase value	2.500.000	
- Depreciation	250.000	
- Current value	2.250.000	2.250.000 (1)
II Current assets		
1. Stocks	1.500.000 (2)	
2. Receivables from debtors	1.232.877 (3)	
3. Cash	246.575 (9)	
Total current assets	2.975.452 (8)	
Less:		
III Current liabilities		
4. Supplies creditors	- (345.205) (4)	
Net current assets (NCA)	2.634.247 (7)	2.634.247 (6)
Total fixed assets + NCA		4.884.247 (5)
Less:		
IV Long-terms loan for business plan		1.377.548 (10)
Net assets of the owner		3.506.699 (11)
B) Liabilities + Equity		

1. Initial capital		1.280.731 (14)
2. Net profit after taxation (2.588.334 x 14/100)		2.225.968 (12)
Total owners' equity		3.506.699 (13)
IV) Cash flow forecast		
A) Cash flow from operating activities		
1. Gross profit from the planned operation		2.588.334
2. Non-monetary activities included in gross income		
2.1. Receivables from debtors	- (1.232.877)	
2.2. Stocks	- (1.500.000)	
2.3. Liabilities to creditors	+ 345.205	
Total	- (2.387.672)	- (2.387.672)
3. Net cash flow operating activities		+ 200.662
B) Cash flow from investing activities		
4. Investment in buildings	-	
5. Investment in equipment	- (2.500.000)	
Net cash flow of investing activities	- (2.500.000)	- (2.500.000)
C) Cash flow from financing activities		
6. Loan for business plan	1.377.548	
7. Equity	+ 1.280.731	
8. withdrawal of funds	- (112.366)	
Net cash flow from financing activities	2.545.913	+ 2.545.913
		+ 246.575
D) Increase- decrease in		
9. Opening balance		0
10. Cash at the end of period		246.575

Source: Vignjević Đorđević, 2008.
Source: USAID Programme No. TPW-1811 2012, Institute for Economic and Finance Belgrade, prepared by authors.

The presented methodological approach for processing the financial segment (Uredba o registraciji poljoprivrednih gazdinstava, 2005) of the business plan makes it possible to establish the first anticipated profitability of the business enterprise. In this example, the planned income statement states that the marginal profit rate is 40%, which corresponds to a highly profitable business. The production of contemporary plastic packaging for food products is therefore profitable venture.

After determining the profitability of the planned business venture, the next step is to make the projection of the required financial resources, as a key segment of the business plan.

From the above stated parameters, a relatively small number of sales financing days is determined, which requires verification of the actual situation regarding the degree of collection of revenue from product sales.

Preparation of the budget shows the existence of critical points of the items for required funds in the part relating to the financing of the volume of material production, due to the greater the number of days for keeping the stocks, prior to use in the manufacturing of the plastic packaging.

Number of inventory turnover days for the production of materials is determined by the structure of sources of supply of key materials. The total volume of stocks at highly automated production, such as the production of plastic packaging for the food industry, depends on the length of time for delivery of the last of components, especially those purchased abroad, with the prolonged delivery.

Checks and controls when developing and implementing an effective business plan include reading and mastering the skills of financial information. Introduction of accounting categories and logic, allows efficient evaluation of business projections made in the business plan, comparing the obtained results with those of other businesses, particularly in the following financial categories:

a) Relation of fixed and current assets (to avoid excessive immobilization of funds)?
b) Relation of long-term and short-term liabilities (to achieve greater financial liquidity)?
c) The structure of equity (in order to strengthen the equity and financial position)?
d) The structure of debt (principal and interest payments)?
e) Relations of fixed and variable costs (for maintenance of rational organization of entities)?
f) Relations of direct and indirect costs (for monitoring the efficiency of business)?
g) Analysis of the calculated costs of products or services (in order to maintain competitiveness)?
h) Analysis of the balance sheet for maintenance operations or financial position of the company,
i) Analysis of the income statement - revenues, expenses, profit or loss (to maintain profitability)?
j) The analysis of cash and cash management (to improve financial liquidity)?

What is not included in figures in the business plan

In financial calculations and financial information we cannot see, but, between the lines of a business plan, we can read following:

- the business skills of owners, entrepreneurs and management of a business entity,
- quality of organization and certainty of business success in the future,
- future demand for specific products and services company,
- The certainty or uncertainty of future operations (expected bankruptcy and bankruptcy).

Financial accounts are usually prepared in a manner that would be adapted and prepared for a tax audit, which has been recently very present and represents a limiting factor for the proper and accurate preparation of financial budgets, business plans and preparation of new strategies that should ensure faster emerging from the crisis and boost future business development, increase revenue, net income and dividends.

Conclusion

Competition is a rivalry between alternative market entities that address the same group of customers, where each is trying in its own way to increase sales, marketing share and gaining higher profits. Competition is a latent (hidden) risk to a particular manufacturer and market subjects. Elements through which competition operates in the market are: volume, structure and size of bids, price and product quality, technology, capacity management, and financial and marketing power of the subject. An important feature for effective drafting of a business plan is to select the appropriate items of business enterprise, then determination of the appropriate scope of business activities and selection of the right methodological approach. The collected information relating to market share achieved in meeting the needs of customers needs to be fatherly analysed for the different market segments and key products, which are the subject of an effective business plan. It is also necessary to analyse the sales channels of competition, and how they cooperate with the customers, especially if they use discounts and the like.

It is assumed that the founders and co-owners of small company made the decision to prepare a business plan, to ensure the necessary resources for financing production of contemporary plastic packaging which will be used in the food industry. Previous market tests have shown that planned products are highly in demand due to the increased needs of industry for processing agricultural products intended for export.

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BIZNIS PLAN – OSNOVE EFIKASNOG MARKETING MENADŽMENT I FINANSIJSKOG PLANA ZA POLJOPRIVREDNE PROIZVODE

Nada Vignjević Đorđević[4], Slavena Jevtić[5], Nemanja Jevtić[6]

Rezime

Globalna finansijska kriza je izazvana strukturalnim poremećajima, iznenadnim nedostatkom kapitala i likvidnih sredstava za redovno održavanje ekonomskih kretanja u svetu. Visoko razvijenim zemljama preti rizik od dugoročne recesije. U manje razvijenim zemljama, kao što je naša, globalna kriza imala je mnogo veći rizik od opšteg finansijskog kolapsa, zbog ograničenih sredstava za brzo prevazilaženje finansijske nesolventnosti. Za Srbiju, izlaz iz finansijske krize leži u bržem pokretanju slobodnih neiskorišćenih nacionalni resursa , gde relativno mala investicija sa novim svežim kapitalom može stvoriti nova radna mesta u vrlo kratkom vremenu, rast BDP – i najbržu tržišnu orijentaciju ka novim proizvodima i izvoznim uslugama. Nova Strategija ekonomskog razvoja Srbije zavisi od veštine i brzine primene ogromnih resursa u sektoru poljoprivrede i industrija, koje se oslanjaju na sektor poljoprivrede. Postojanje više od 400.000 registrovanih poljoprivrednih gazdinstava i sa nekoliko hiljada malih i srednjih preduzeća za preradu primarnih poljoprivrednih proizvoda, kao i logističku podršku, predstavljaju pravu priliku za brži izlazak iz krize. Međutim, raspoloživi resursi u sektoru poljoprivrede i dalje su veoma ograničeni sa asortimanom proizvoda i usluga sa višim stepenom prerade, što bi moglo biti ponuđeno, našim tradicionalnim inostranim kupcima. Iako postoje uslovi za razvoj novih izvozno - orijentisanih poslovnih poduhvata u Srbiji, postoji nedostatak poslovnih ideja , znanja i veština neophodnih za početak takvog posla. Za pokretanje novih poslovnih poduhvata stotine dobrih poslovnih planova mora se obezbediti u veoma kratkom rok. Biznis plan je važan dokument za obezbeđivanje neophodnih finansijskih sredstava iz javnih fondova ili od komercijalnih banak. U uslovima krize, teško je izabrati odgovarajući objekt za novi poslovni plan. Prema tome, autori su posebnu pažnju posvetili definisanju optimalnog

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izbor predmeta i planu poslovanja u kriznim uslovima. Očekivani efekti smanjenja nezaposlenosti i otvaranje novih radnih mesta, nisu postignuti aktivnostima državnih institutucija u nerazvijenim područjima u poljoprivrednom sektoru, finansiranjem iz stranih donacija. To je ograničavajući faktor za brži izlazak iz krize i promociju brzog ekonomskog rasta. Naglašava se važnost sprovođenja prethodnih pozitivnih rešenja za proveru mobilnosti tržišta za nove programe, izbor najbolje tehnologije i opreme , sa najnižim troškovima po jedinici , kako bi se postigla konkurentnost na tržištu u kriznoj situaciji. Dobar biznis plan je zasnovan na verodostojnom budžetu za potrebnim finansijskim sredstvima, bez kojih neće biti uspešan biznis. Pravilna analiza investicija i poslovnog rizika, treba da obezbedi sigurnost preduzetnicima i vlasnicima kapitala za investiranje u dati poslovni plan. Ovo istraživanje je prvenstveno namenjeno za tekuće potrebe i sprovođenje u praksi, kao doprinos bržem pokretanju novih privrednih aktivnosti u poljoprivrednom sektoru za brži izlazak zemlje iz krize, koja se dogodila.

Ključne reči: *biznis plan, poljoprivredne organizacije, poljoprivredna tržišta, finansijski podsticaji i nova radna mesta.*

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RULES FOR TECHNICAL PREPARATION OF ARTICLES

These Instructions will give all necessary information to author(s), as well as template for the articles preparation before their submission for publication in the journal Economics of Agriculture. We are asking you to use this document with a maximal attention, in other words to realize it as a set of instructions and practical example that will contribute to easier and more efficient operation under your article within the all phases of journal editing. Articles that deviate from mentioned template are not be taken into consideration.

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Anđela Marković[2], Petar Petrović[3], Mirko Mirković[4]

Summary

It is desirable that Summary contains up to 150 words, as well as to contain all essential paper elements, such as goal(s), used method(s), important results and general authors' conclusion(s).

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Please, avoid the use of the indexes and special symbols within the Summary, and define all abbreviations whenever they are used for first time. Do not cite references in Summary.

Author(s) from Serbia are submitting article title, summary, key words and information about themselves on Serbian language at the end of the article, after the list of used literature. Text of the Serbian and English version of Summary must match in every sense.

Key words: *note, maximally, five, key, words.*

JEL: *Q16, M24* (www.aeaweb.org/jel/jel_class_system.php)

1 Paper is a part of research within the project no. III 46006 - Sustainable agriculture and rural development in the function of accomplishing strategic objectives of the Republic of Serbia in the Danube region, financed by the Ministry of Education, Science and Technological Development of the Republic of Serbia. Project period: 2011-2014. ***This segment is not obligatory within the paper***.

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Introduction

Please strictly follow the instructions on article formatting, as well as styles provided in this template. Do not change font size, interspace between paragraphs and line spacing to insert more text into a conditionally limited number of pages.

Editorial Board organizes process of review of submitted articles and selects papers for publication based on the performed review, in other words according to estimated quality of the articles by the appointed reviewers. However, the ultimate responsibility for the views, originality and stands within the articles is exclusively on author(s) of manuscripts.

Please follow the basic principles of scientific papers structuring and try as much as possible to write a paper with next segments: Introduction, Paper goals, Data sources, Methodology, Results with Discussion, Conclusion (with Recommendations), Literature, etc.

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Table 5. The distribution cost of packaged goods from Subotica to retail-store objects

Indicators	Period			Total
	Month 1	Month 2	Month 3	
Distance crossed (km)	12.926	11.295	13.208	37.429
Fuel consumption (litre)	3.231	2.823	3.302	9.356
Value of fuel consumption (RSD)	242.378	211.790	247.653	701.821
Total time spend on touring (hour)	314	266	417	997
Value of total time spend on touring (RSD)	47.048	39.890	62.570	149.508
Number of tours	98	77	102	277
Toll value (RSD)	0	0	0	0
Number of pallets transported (piece)	1.179	976	1358	3.513
Total weight transported (kg)	602.600	429.225	711.116	1.742.941
Vehicle maintenance costs (RSD)	203.858	164.970	224.806	593.634
Lease costs (RSD)	480.938	454.214	565.784	1.500.936
Total sum (RSD)	974.222	870.864	1.100.813	2.945.899

Source: Petrović, 2012;
Note: Values within the table are calculated without Value Added Tax (VAT)

Graphs, dendrograms, diagrams, schemes and pictures should be entered within the text of article (do not use option Float over text) and numerated according to order of their appearance. Their titles have to be positioned immediately above the graph, dendrogram, diagram, scheme or picture to which they relate. Please, have in mind that all titles, sources and notes have to be written by identical style which was used for tables formatting. During the article writing please mark in the main text all calls to a certain graph, dendrogram, diagram, scheme or picture (*Graph 2*.). All graphs, dendrograms, diagrams, schemes and pictures within the paper have to fit the specified format of the page, as well as they have been centrally positioned. Photos and images are not desirable in the paper, but if they can not be avoided, please use an optimal resolution (low resolution can bring to pixelization and worn edges, while to high resolution only increase file size without any contribution to article readability).

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ŠABLON: NASLOV RADA (CENTRIRAN, TNR SIZE 12, BOLD, SVA SLOVA VELIKA, MAKSIMALNO DVA REDA)[1]

Anđela Marković[2], Petar Petrović[3], Mirko Mirković[4]

Summary

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Key words: *navesti, maksimalno, pet, ključnih, reči.*

JEL: *Q16, M24* (www.aeaweb.org/jel/jel_class_system.php)

1 Paper is a part of research within the project no. III 46006 - Sustainable agriculture and rural development in the function of accomplishing strategic objectives of the Republic of Serbia in the Danube region, financed by the Ministry of Education, Science and Technological Development of the Republic of Serbia. Project period: 2011-2014. ***Ovaj segment nije obligatoran u radu***.

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Introduction

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Table 5. The distribution cost of packaged goods from Subotica to retail-store objects

Indicators	Period			Total
	Month 1	Month 2	Month 3	
Distance crossed (km)	12.926	11.295	13.208	37.429
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Total sum (RSD)	974.222	870.864	1.100.813	2.945.899

Source: Petrović, 2012;
Note: Values within the table are calculated without Value Added Tax (VAT)

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