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Адреса уредништва / Editorial office

Београд, Волгина 15; тел/факс (+381)11/6972-848; E-mail: economicsofagriculture@ea.bg.ac.rs
Belgrade, Volgina 15; phone/fax (+381)11/6972-858; E-mail: economicsofagriculture@ea.bg.ac.rs

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GOVERNMENT PROGRAMS FOR SUPPORTING AND PROTECTING YOUNG CONSUMERS – INSTRUMENTS OF FOOD POLICY IN ROMANIA

***Corina Ene*[1]**

Summary

In recent years, a number of preoccupations at the global, regional and national level have been aimed to find solutions to the current problems in the field of food consumption in children and young people, given the fact that both food insufficiency and food abuse generate negative effects on health.

In Romania, the economic context consisting of the existence of a large number of children whose diet is insufficient made European programs for granting food in schools, during class hours, to be useful and to have social relevance.

The article examines, starting from the Romanian legislative framework underpinning such programs, the coordinates of these efforts, concluding that they represent in the same time instruments of national food policy.

Key words: *children's diets, obesity, milk and fruit schemes, food and nutrition policy.*

JEL: *D18, H 53, J13, Q18*

Introduction

While most specialists and policy makers agree on the fact that diet is extraordinarily important in actual society, in the last years, alarming signals were launched at global level regarding two opposite tendencies: on the one hand, a large part of the world population still suffers from hunger and sub-nutrition and, on the other, in developed countries, food and inappropriate diets became a cause of illness: obesity, anorexia, cardiovascular diseases, diabetes and gastric problems – generating unaffordable expenditures in health systems and associated social costs.

A worrying fact is that, in most countries, children's diets tend to be oriented towards highly processed foods, while the amount of fruit, vegetables and milk included in daily food intake is decreasing below the recommended daily intake.

1 Ph.D., Associate Professor, Petroleum-Gas University of Ploiesti, Faculty of Economic Sciences, B-dul Bucuresti, no. 39, 100.680, Ploiesti, Romania, Phone: +40 72 62 59 030, E-mail: enecorina@yahoo.com

Studies conducted by the World Health Organisation (WHO) within the European Union show that obesity among European children is rising rapidly in all the Member States: one of three European children was overweight or obese in 2012, compared to one in three in 2008 (http://ec.europa.eu/agriculture/sfs/eu-countries/index_en.htm). It seems that this phenomenon is relatively recent (European Heart Network, 2006).

At present, young people in the EU (European Union, 2014):

- consume more fast-food and sugar-sweetened beverages;
- eat outside the home more frequently and spend less time eating family meals;
- are affected by harmful effects of television viewing and internet use on the eating habits, in terms of greater consumption of sweetened beverages and exposure to advertising of unhealthy products.

Considering that obese children are exposed to higher increased risk of various diseases (including cardiovascular disease, diabetes, liver disease and certain forms of cancer), besides the psychological distress (European Heart Network, 2006), social stigmatisation and mental health problems (European Union, 2014), in March 2004, the European Heart Network (EHN) started a project on "Children, obesity and associated avoidable chronic diseases". The project shown the imperative to act immediately through the collaboration of all parties involved, using a set of well-targeted policies. EHN issued a report which establishes *ten policy options* as a result of consultations (European Heart Network, 2006):

- Food and health education;
- Controlling sales of foods in public institutions;
- Controls on food and drink advertising;
- Subsidies on healthy foods;
- Change planning and transport policies;
- Improve communal sports facilities;
- Improve training for health professionals;
- Improved health education;
- Common Agricultural Policy reform;
- Mandatory nutritional information labelling.

EHN insisted that this approach should be sustained by different measures proposed by international organisations, national task forces on obesity and national Government policies, with an emphasis on food polices for schools and restriction of TV advertising and marketing of unhealthy foods to children (European Heart Network, 2006).

In 2007, as response to the challenge of overweight and obesity, The European Commission launched the White Paper on a Strategy for Europe on Nutrition, Overweight and Obesity-related Health issues, establishing the need action *in six priority areas*: better informed consumers, making the healthy option available, encouraging physical activity, developing

the evidence base to support policy making, developing monitoring systems and making children and young people and low socio-economic groups a priority (http://www.euro.who.int).

For the implementation of the Strategy, a range of policies have been developed at the EU-level, based on *two key-instruments*: the High Level Group on Nutrition and Physical Activity and the EU Platform for Action on Diet, Physical Activity and Health.

As a result of the collaboration between WHO and the EU, the "EU Action Plan on Childhood Obesity 2014-2020" was adopted at a high level meeting, mentioning that "childhood obesity rates at a worrying trend" and establishing specific objectives and areas of action (http://www.euro.who.int).

As childhood represents a decisive period for installing good habits and infusing healthy behaviours and knowledge, educational centres are areas in which effective action can be taken to generate long-term changes towards healthy lifestyle.

Many studies points out that dietary habits acquired in childhood can influence behavioural patterns, food preferences and choices which persist throughout adulthood, being a major component of a healthy lifestyle (Ene, 2008; European Parliament, 2013; Jensen et al., 2012; WHO, 2006).

As a consequence, in order to prevent or reverse the adverse health effects of overweight and poor eating habits, nutrition interventions should occur early in childhood and adolescence - as critical periods in terms of diets (WHO, 2006).

In the light of the declining trend in the fruit, vegetables and milk consumption, two schemes were set up at European level: the School milk scheme, starting 1977 and the School fruit scheme, starting 2009 (European Commission, 2014). Across the EU, around 30 million children benefit from these programmes each year (http://ec.europa.eu/news/agriculture/140204_en.htm), (over 20 million for the milk scheme and 8.5 million for the school fruit scheme (European Commission, 2014)).

The School Milk Scheme and the School Fruit Scheme were introduced by the Romanian government in schools starting with 2002 and 2010 respectively, being 75% financed by EU funds, aiming at the distribution of fruit and milk in schools and encouraging education on healthy eating.

In this context, in Romania there are a number of preoccupations and programs that reflect the interests of public institutions to promote healthy eating and adequate nutrition for children and adolescents - as major components of public health, reflected in the requirements for food and nutrition in schools.

In terms of institutional framework, the implementation and the success of these programs depend on the effective involvement of *relevant stakeholders*: Ministry of Agriculture and Rural Development; Ministry of Health; Ministry of Education, Research, Youth and Sport.

In terms of legislation, a series of specific regulations refers to the need to ensure a sufficient and balanced nutritional intake in the institutions for education and recreation for children and youth.

Legal regulations applicable to food in the institutions for education and recreation of children

As stated in the text of Article 17 of Order no. 1955/1995 for the approval of hygiene norms for institutions for care, education and training of children and adolescents (with subsequent modifications and completions), the management of all recreation and education institutions (nurseries and kindergartens with prolonged and weekly program, boarding schools with canteens, orphanage preschools and schools, higher education institutions with student dining canteens, summer camps) will provide a collective diet adapted to their age, health status, specific activity and season, ensuring daily caloric and nutritive needs as recommended by the Ministry of Health. These needs are set in tables establishing daily requirements of calories and nutrients for children and adolescents, respectively estimated daily requirements of various food groups to be included in dietary composition for children and adolescents (bruto commercial quantities).

The same normative act sets out the requirements that must be met for correct composition of the menu in the institutions for education and recreation of children and youth. According to Article 17 of Order no. 1955/1995, the following requirements should be observed for a correct menu:

- to avoid the association foods from the same group in the dishes served (for example, breakfast will not consist of tea with bread and jam, but with meat or milk derivatives; though, milk can be used along with bread and jam or biscuits; main dishes at lunch will not contain mainly carbohydrates – grains; for instance, soup with dumplings and steak will have a vegetables garnish instead of pasta);
- to avoid, at dinner, foods that require effort to digest, having a strong digestive stimulant effect or, if combined, generate adverse gastrointestinal effects (such as baked beans with yogurt or stewed fruit);
- to allow dishes such as stuffing or roasted schnitzel, only if they have been previously cooked by boiling or as sausage which were fried or prepared in the oven. Eggs are recommended to be served as scrambled eggs in the oven and not baked or fried;
- to enrich the content of vitamins and minerals through the use of raw food salads and leafy vegetables added to soups and borsches;
- to ban on using creams with eggs and sour cream, mayonnaise, regardless of the season, and also boiled eggs (uncut after boiling).

In terms of legal requirements necessary for ensuring healthy diets in schools, the Ministry of Public Health shall establish and update the list of foods not recommended for preschool children and schoolchildren, as suggested by nutrition experts. According to Article 10 of

Law no. 123/2008 for healthy eating in pre-university education, the preparation, marketing and distribution of any food contained in the list are prohibited within these institutions.

The list of foods not recommended for preschool children and schoolchildren (specifying products, criteria and limits) are provided in Annex 1 which is an integral part of the Ministerial Order No. 1563/2008 – which addresses the approval of the list of foods not recommended for preschool children and schoolchildren and the principles underlying healthy diets for children and adolescents.

The list includes foods such as: foods high in sugars (15 g sugars/100 g, e.g.: cakes, candy); high-fat foods (e.g. hamburgers, pizza, pastry type products, French fries); foods with high salt content (over 1.5 g salt/100 g, e.g.: chips, crackers, salted sticks, snacks); soft drinks (except for bottled drinking water or bottled mineral water); foods high in calories per unit of sale (over 300 kcal per unit of sale); unpackaged foods (e.g. bulk foods); unlabelled food (which do not comply with Government Decision No. 106/2002 on food labelling, with subsequent amendments).

This regulation (Order No. 1563/2008) also establishes the criteria for which specific foodstuffs or food items which should not be recommended. As a consequence, food items listed in the Order are banned from sale within schools in order to encourage schoolchildren to adopt healthy dietary habits (WHO, 2013).

In addition to the list of not recommended foods, banned from sale inside pre-university education institutions, the above mentioned Order provides:

- underlying principles of a healthy diet for children and adolescents;
- daily requirements of calories, nutrients and minerals for children and adolescents;
- food equivalents, the estimated daily requirement of various food groups necessary for meals planning for children and adolescents, indicative data on the caloric value of food and nutritional characteristics of the food groups used for compiling menus for children and adolescents (bruto commercial quantities);
- the food pyramid for nutrition of children and adolescents, according to caloric needs, food groups and age group.

Another measure aimed at protecting children and adolescents as consumers refers to prohibiting the sale of alcoholic beverages inside educational institutions. Thus, according to Article 1(1) of the Government Decision (G.D.) No. 128/1994 on measures for ensuring the physical and moral development of pupils and students, the sale or exposure for sale of alcoholic beverages is prohibited within educational units of all grades, boarding schools, places of accommodation for pupils and students, in the courts of such buildings, and also in the sidewalks or access paths to these units.

This requirement must be complied with, as provided for in Article 2 of the same act, also by the businesses servicing the in-house buffets/cafeterias or supplying pupils and students with bakery products and beverages, based on the operational specific acceptance of the school management.

Besides the mentioned requirements, Romania is among the Member States participating in the two European school schemes, the School Milk Scheme (known as the "Croissant and Milk" Programme - in Romanian: "Cornul si laptele") and the School Fruit Scheme (known as the "Apples in Schools" Programme - in Romanian: "Mere in scoli"), which are partially financed by the EU.

General coordinates of the "Croissant and Milk" Programme in Romania

According to Emergency Government Ordinance (E.G.O.) No. 96/2002 on providing dairy and bakery products for pupils in grades I-VIII of public and private education and for preschool children in private kindergartens with normal program of 4 hours (with subsequent modifications and completions), pupils in primary and secondary public and private schools, as well as preschool children in public and private kindergartens with normal program of 4 hours are given daily, for free, on condition they are present at the program, dairy and bakery products according to a daily limit value of 1.17 lei/ pupil or preschool child.

The limit value shall be updated by Government Decision, depending on the evolution of prices and tariffs, currently being established by G.D. No. 714/2008 on updating daily limit value on dairy and bakery products for pupils in grades I-VIII of public and private education and for preschool children in private kindergartens with normal program of 4 hours and for approval of content/technical specifications of procedures for the award of contracts for the supply of dairy and bakery products for school and preschool (with subsequent modifications and completions).

The text of Article 1 of E.G.O. No. 96/2002 requires that, in order to maintain the health of children included in the scheme, under this program will be distributed only milk and milk derivatives prepared in accordance with the requirements of Regulation (EC) no. 852/2004 on the hygiene of foodstuffs, with subsequent amendments, which will bear the identification mark provided for in Regulation (EC) no. 853/2004 laying down specific hygiene rules for food of animal origin, with subsequent amendments.

Regarding the types of products allowed to be distributed under "Croissant and Milk" Programme, Annex 1 to G.D. No. 714/2008 provides technical specification for the procedures for the assigning of contracts for the supply of dairy and bakery products for school and preschool.

Thus, regulation establishes that following products can be distributed within the scheme:

a) heat-treated milk, UHT and pasteurized milk and fermented milk products containing heat-treated milk at least 90% by weight: yogurt, buttermilk or kefir, which meet the specified requirements, packed in 200 ml units for milk and in packs whose weights is expressed in grams for fermented milk products;
b) bakery products: croissants or bars and derivatives: plain bagels or dry biscuits, in packs of 80 g/unit.

Products distributed within the "Croissant and Milk" Programme must meet several requirements for quality and hygiene, resulting in provisions, criteria and limits set out in the list in Annex no. 1 which is an integral part of the Ministerial Order No. 1563/2008.

Distributed products shall also comply with the technical specifications on quality, safety and perishability (deadline for consumption), the conditions for transport and distribution, packaging, labelling and marking. These requirements stipulate, inter alia, the following:

- the necessity to observe microbiological criteria for foodstuffs;
- a minimum protein content of 3.2% and a minimum of 1.8% fat in milk consumption in order to maintain the normal levels of health and nutrition of children;
- providing medical prescribed diets for special groups of consumers - children with diabetes, gluten and lactose intolerance;
- ensuring proper product storage until serving, using dedicated facilities with hygienic conditions, according to the specifications given by the manufacturer;
- food will be transported from the supplier to schools only by special vehicles, authorized under applicable law;
- food distribution will be made only by persons who have acquired basic knowledge of hygiene and passed medical examination performed according to applicable law;
- inscription of warnings indicating that the product is distributed for free, its sale being prohibited.

Regarding the responsibility for supervising the hygienic conditions related to the distribution of products included in the "Croissant and Milk" Programme, as required by Article 5 of the E.G.O. No. 96/2002, county councils and sector mayors have the obligation to monitor and verify the due process of supply and sanitary conditions on distribution to pupils of dairy and bakery products.

General coordinates of the Programme promoting the consumption of fresh fruit in schools

The Programme promoting the consumption of fresh fruit in schools, implemented in our country under the provisions of E.G.O. No. 24/2010 on the implementation of the program promoting the consumption of fresh fruit in schools (with subsequent modifications and completions), aims to simultaneously encourage the consumption of fruit in schools and establish healthy eating habits among school-age children, stimulating domestic production the fruit in the same time.

According to Article 6(1) of E.G.O. No. 24/2010, as in the "Croissant and Milk" Programme, only pupils present in class are entitled to the right to receive fresh fruit (an apple a day).

The main requirements on quality and hygiene of fruit distributed within the programme promoting the consumption of fresh fruit in schools can be found in Annex 1 (Technical specifications for the procedures for the assignment of contracts for the supply of fresh

fruit in schools) which is an integral part of the Order of Minister of Agriculture and Rural Development No. 243/2012 on providing fresh fruit in schools.

According to these requirements, the program will provide apples with a minimum weight of 100 grams, falling within the "Extra" and/or Ist Class, according to the Standard for apples sale provided in Annex I "Marketing standards referred to in Article 3 " - part B "Specific Marketing Standards " - part 1" Marketing Standard for apples" to Regulation (EU) no. 543/2011 of 7 June 2011 laying down detailed rules for the application of Council Regulation (EC) No 1234/2007 in respect of the fruit and vegetables and processed fruit and vegetables sectors.

Further specifications require that:

- apples must be whole, healthy, washed, clean and free of any visible foreign matter, free from pest and disease attacks, without excess external moisture, without foreign smell or taste, to withstand transport and handling;
- apples batches will be accompanied by test reports on the content of pesticide and heavy metals residues, delivery notes, certificates of conformity;
- transport and distribution vehicles will ensure the integrity of apples until the delivery to the recipient;
- for storage, schools will provide and will use dedicated facilities for preserving apples in hygienic conditions.

The responsibility for ensuring the provision, reception and distribution of fresh fruit and confirmation documents underlying payment rests directly, according to Article 6(2) of E.G.O. No. 24/2010, with the main loan authorizing body (presidents of county councils, respectively mayors of Bucharest districts) and school directors.

Also, according to Article 6(3), presidents of county councils and mayors of Bucharest districts are required to track and verify the proper conduct of the supply process and the principals of educational units are responsible for compliance with hygiene conditions on the distribution of fresh fruit to pupils.

For the current school year (2013-2014) the programme promoting the consumption of fresh fruit in schools in Romania consists of the free daily apple distribution to pupils in grades I-VIII and preparatory class form public and private schools and in implementing accompanying measures in the period 16 September 2013 - 20 June 2014.

According to provisions of the G.D. No. 800/2013, for the school year 2013 - 2014 granted apples will fit within the daily value of 0.37 lei/pupil for a period of 85 days of schooling, complying with the amount of each budget year. Besides fruit distribution, G.D. No. 800/2013 also establishes accompanying measures in the school year 2013 – 2014, according to Article 2, as follows:

a) organizing visits to fruit and vegetable farm, to fruit or vegetable research stations, to "Harvest Days", exhibitions, fairs and other events and/or activities;

b) organizing thematic contests with prizes – as educational practical ways to help pupils develop skills by gardening activities.

Prizes awarded on the occasion of the competitions include:

- individual awards: books, diplomas, atlases, DIY kits, baskets of fruit and vegetables, fruit trees seedlings, vegetables or flowers seedlings;
- awards for the educational unit: classrooms and laboratory equipment, teaching materials.

Penalties applicable in case of infringements of the provisions on food by the institutions for education and recreation of children

Violation of these provisions entails a series of sanctions, in accordance with Article 55 of Chapter XIII (Contravention to the rules on the organization and functioning of institutions for the protection, education, training, recreation and leisure for children and youth) of G.D. No. 857/2011 establishing and sanctioning offenses to public health standards. In this context, the following acts having impact in the field of food and nutrition are considered contraventions and are punishable by a penalty of 1,000 to 2,000 lei for individuals, respectively a penalty of 5,000 lei to 10,000 lei for legal persons:

- infringement of the principles underpinning a healthy diet for children and young people, considering the rules in force;
- lack of endorsement and approval of the menu developed for children and young people in both public and private education units, including camps, holiday centres, units and establishments providing similar services for hosting pupils after school hours, by a medical professional and the director of the unit;
- preparation, sale and distribution of food products that do not comply with the limits for which they become not recommended to preschool and school children, according to the list established by the Ministry of Health;
- failure to comply with the conditions regarding the composition, quality, labelling and packaging of dairy and bakery products distributed to pupils and pre-schoolers the rules in force;
- failure to comply with the conditions regarding the transport, distribution and storage of dairy and bakery products distributed to pupils and preschool children under the rules in force.

Other measures

According to a project for a Government Ordinance initiated by the Ministry of Education, it was proposed that starting school year 2008-2009, public and private kindergarten and primary schools (pupils in grades I-IV) distribute weekly to each pupil 60 grams of honey, as a dessert to the "Croissant and milk" menu, but the proposal was implemented only temporarily, within a small number of educational units.

Distributing honey as a nutritive supplement in schools would primarily aim at lowering dropout among children from poor families, but also would bring nutritional benefits.

At the same time, the programme would generate positive economic consequences for beekeepers, stimulating them to deliver quality products on domestic market and not only for export; moreover, domestic consumption would increase, thus inducing benefits on children's health.

A Future trend for European School Schemes

A press release form the European Commission on 30 January 2014 informs the public that the Commission launched a proposal to combine and reinforce existing school milk and school fruit schemes under a joint framework, in a context of declining consumption among children for these products. The proposal builds on the findings of evaluation reports and the public consultation carried out in 2013.

The new scheme will have a budget of € 230 million per school year (€150 million for fruit and vegetables and € 80 million for milk) (European Commission, 2014). Participation in the new scheme will continue to be voluntary, and EU countries will have the flexibility to choose which foods to distribute.

As a result, combining the two schemes is intended (European Commission, 2014; http://ec.europa.eu/agriculture/sfs/eu-countries/index_en.htm):

- to address poor nutrition more effectively;
- to reinforce the educational elements of the programmes;
- to contribute in the fight against obesity;
- to put greater focus on educational measures to improve children's awareness of healthy eating habits, the range of farm produce available, as well as sustainability, environmental and food waste issues (European Commission, 2014);
- to reduce the administrative and organisational burdens of implementing them for schools and national authorities;
- to make distribution more cost-effective.

Preoccupations and contributions of The National Authority for Consumers Protection to support young consumers in terms of food consumption

Surveillance and controls - Through its representatives, The National Authority for Consumers Protection (NACP) monitors economic operators involved in the manufacture and distribution of food for children and adolescents within special schemes, ensuring that providing food implies utmost responsibility and does not put children's health at risk in any way. Periodically, NACP commissioners check the application of legal provisions regarding dairy and bakery products for both preschool children in kindergartens and pupils in primary and secondary public education, assessing the implementation of the program promoting the consumption of fresh fruit in schools.

Thus, in the period 16 September 2013 - 31 January 2014, 1579 control actions were performed, of which 1,014 in schools and 542 in kindergartens, on 11 manufacturers and 12 distributors (http://www.anpc.gov.ro/).

As a consequence of identified deficiencies, 5259 kg of milk, bakery products and apples – in amount of 14,483 lei - were withdrawn form distribution due to the fact they were unfit for human consumption, and 10 sanctions were applied, consisting of six penalties totalling 59,000 lei and 4 warnings.

Several infringements of legal provisions were identified during the controls, including (www.anpc.gov.ro/):

1. Exceeding the expiration date established by normative acts of imprinted on package (e.g., exceeding the limited date of consumption for croissants - 48 hours from the time of manufacture, as regulation provide);
2. Distribution of qualitatively and/or quantitatively non-conforming products (e.g. changes in taste and colour, negative deviations of the net amount);
3. Failure to the comply with the delivery schedule (biweekly and even weekly distribution instead of daily supply);
4. Failure to comply with conditions of transport, warehousing and storage (e.g. lack of dedicated facilities for receiving and storage of food until distributing it to pupils);
5. Non-compliance with the rules for labelling, marking and packaging (e.g. lack of required information on the label; incomplete, illegible use-by date).

The launch of the Code of Ethics regarding Food Marketing to Children

In the context of Romanian legislation created by Law No. 363/2007 on combating unfair commercial practices, unfair trade practices also refer to including in an advertisement a direct exhortation to children to buy advertised products or persuade their parents or other adults to buy for them the promoted products.

Taking into account the need to provide consistent legislation, a member of Parliament and NAPC, along with other stakeholders, launched the initiative to develop and publicly debate an ethical code regarding food marketing to children, which was later finalized and approved.

This code represents a significant step towards compliance with the general ethical rules of marketing and, in particular, with consumers' rights. The Code contains (Code of Ethics, 2008):

- general ethical principles of marketing of food and non-alcoholic beverages;
- ethical principles for marketing of food and non-alcoholic beverages to children.

The Code defines the Minimum Nutritional Criterion establishing requirements and limitations which foodstuffs intended for children should meet (Code of Ethics, 2008), in

order to not affect health and not predispose them to obesity, being the main landmark in establishing beneficial food for the harmonious development of the child.

Voluntary adoption of this set of rules means that economic operators cease to advertise - by any means of marketing - products not meeting the Criterion and respect the right of children not to be influenced or not to influence parents to buy certain products. Moreover, research suggests that banning ads targeted at children is a very effective policy tool for reducing fast-food consumption (Jensen et al., 2012).

Conclusions and trends

Young consumers' health, security and safety are among primary concerns, both at global, European and national level. Government responsible, specialists, policy makers agree more and more today that steps must be taken to provide better food and nutritional options for pupils in schools. In this context, *three directions of concern and action* are mostly relevant and should be reflected in food and nutrition policy at national level:

- the "food security" dimension; for many children, the foodstuffs granted through government programs in educational institutions represent an important meal. Children from disadvantaged families with low incomes are unable to acquire basic food intake every day, so that programmes distributing milk and bakery products, fruit and/or honey play a vital role in food security.
- the "food safety" dimension; government aid granted by these programs must fulfil both the nutritional role and the innocuity function, so that it should not induce any threat to consumers' health. Therefore, manufacturing, transportation, distribution, storage and allocation of such foods require constant monitoring of these programs and drastic sanction in case of breaches found.
- the "food and nutrition" dimension; actually, these programs represent food and nutrition policy instruments at national level. Where possible, it appears necessary to reassess of the distribution of these foods taking into account:
  - the proper way of combining foodstuffs;
  - the right time for consumption during the school program.

Moreover, further possibilities should be investigated in order to avoid the repetitive nature of the consumption of the same food every day, as it creates monotony and can lead to situations where targeted consumers waste, throw away the products or find other uses for them (e.g. play) thus compromising their purpose.

Currently, it is imperative that food and nutrition policies aimed at young consumers to focus on both sides of the problem: insufficient food intake, respectively excessive and unhealthy food intake, especially since research show there is a strong correlation between lower socioeconomic status, physical inactivity, food and nutrition insecurity and obesity.

In support of the children from low-income families, the "Croissant and milk" scheme could be replaced by a hot meal with two dishes, particularly in schools that own a canteen or

can cooperate with catering units. Nevertheless, milk distribution is sustained partially by European funding, so it is not possible to redirect these funds to canteens. In this context, the increasing involvement of mayors and local councils in funding school canteens is required, where it is a social necessity.

In order to avoid excessive or unhealthy food intake, adopting the voluntary set of rules contained in the code of ethics regarding food marketing to children by more and more operators involved in the promotion of products for children is of paramount importance. In this way, strong actions can be taken on the compliance with general ethical norms of food marketing to children, proving that food industry is equally interested in the health of citizens as consumers themselves.

Such approaches cannot be successful sustainable without proper education regarding diet and nutrition. This kind of education require the introduction of appropriate subjects of study (study of food, nutritional health and dietary habits) in school curricula and/or by programmes offered by local authorities or private bodies as a means of improving the health and wellbeing of children, ensuring better learning ability and academic performance.

Schools represent a relevant opportunity for prevention in this field, because they reach large numbers of people, including youth, school staff, families and community members.

It is critical that food and nutritional education starts early in consumers' life and different types of measures should be address directly to children and adolescents, involving the intervention and sustaining from all parties involved: local and national authorities, parents, school representatives, pupils themselves. There is a clear need for the public and private authorities working together to help youth attain their full educational potential and good health by providing them with both the skills and social support necessary for adopting long-term healthy eating habits – and this is indeed a matter of urgency.

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APPROACHES TO SUSTAINABLE RURAL DEVELOPMENT IN A PREDOMINANTLY NON-RURAL REGION

***Vasily Erokhin*[1]**

Summary

Paper aims at investigation of contemporary approaches to sustainable rural development in Russia with focus on predominantly non-rural areas, gravitationally attracted by such urban agglomerations, as Moscow. It includes the overview of current experiences in rural development, analysis of major economic and social indicators of rural areas in comparison with urban ones, characteristic of specific features of rural areas in Moscow Oblast, and elaboration of perspective ways to ensure sustainable development of those areas. Methods of benchmarking analysis, SWOT-analysis and program prognosis are implemented. The major results of the current research are discoveries of growth points for rural development and recommendations on perspective measures of state and local policies in rural areas, directed on increase of living standards of rural population and retention of labour resources in their traditional rural areas of inhabitation.

Key words: *sustainable rural development, region, rural areas, urban agglomeration*

JEL: *Q18, P25*

Introduction

Rural development, aimed at improvement of quality of life, is the key factor of sustainable growth of agricultural production effectiveness, as well as social stability in rural areas. Agriculture, as the primary industry in rural areas, is the major (and often the only one) source of employment and income for rural people. It directly influences economic, social, and demographic processes in rural territories, affects land settlement and reclamation, and ensures maintenance of territorial and cultural integrity of the country (Ivolga, Uryadova, 2010).

Consequently, state policy in the sphere of agriculture should be proceeded from sustainable development of rural areas, based on economic, social, and environmental approaches. One of the major threats to effectiveness of state policies in rural areas is the contrast between attractions of city life and negative appeals of rural life. State support and budget subsidies are necessary to decelerate stagnation, but not enough to ensure long-term sustainable development. People, attracted by higher living standards in urban areas, tend to leave

1 Ph.D., Department of Management and Marketing, Moscow University of Finance and Law, 8, build. 1, Presnenskaya Embankment, 115114 Moscow, Russia, Phone: +74999951963, E-mail: basilic@list.ru

traditional rural areas of inhabitation in favour of bigger urban agglomerations. In order to prevent this negative tendency and retain labour resources in rural areas, the state policy should be reoriented from the exclusively economic approach to a combination of economic, social, environmental, and cultural factors.

That is especially relevant for areas contiguous to big cities. On the face of it, such predominantly non-rural areas are in the better position in comparison to the rural ones, since the major economic indicators (income level, labour inflows, employment rates, etc.) are higher. However, that is primarily because of employment opportunities in the spheres, not related to agriculture (trade, services, etc.) or commuting of people from surrounding rural settlements to urban centres. In such a situation sustainable development of traditional agricultural production and rural way of life is even in a bigger danger, despite the higher attractiveness of those "pseudo-rural" areas. That is why the above-mentioned complex approaches should be applicable to the predominantly non-rural areas as well, in order to provide diversified and multipolar development pathways.

As the part of the current research we have studied the contemporary experience of Russia in the sphere of rural development in general, and the case of Moscow Oblast in particular. The region surrounds the biggest Russia's urban agglomeration of Moscow City (over 12 mln people as of 2014), which is the absolute centre of gravitational attraction for labour resources from its rural areas. Additionally to the overview of the contemporary state of rural areas in Russia (population, employment, income, etc.), we have investigated specifics of "urban-oriented" rural areas, discovered the major threats and challenges of their sustainable development, and elaborated the set of relevant perspective measures.

Material and Methods

For the purposes of the current research we have primarily addressed the works by Russian and foreign researches and experts, related to analysis of local specifics of rural development and unique economic, social and environmental features of certain regions (Merzlov et al., 2012; Rusinova, 2011; Lavrukhina, 2013; Vuković et al., 2012; Wiggins, Proctor, 2001).

We have also studied approaches to sustainable rural development through small and medium entrepreneurship in rural areas and intensification of agricultural production (Bondarenko, 2011; Trukhachev, Lescheva, 2010). The special attention was paid to integration of agricultural producers (Lescheva, 2007; Lescheva, 2008) and diversification of income opportunities in rural areas by means of alternative employments, rural tourism and related activities (Ivolga, Erokhin, 2013; Jelocnik, Ivolga, 2012; Ivolga, Belak, 2013; Kundius, Chermyanina, 2011; Ivolga, Mikhaylova, 2013).

International practices and success stories in the sphere of rural development had been obtained from the works of W. Heijman (regional competitiveness and regional issues of economic development), (Heijman, Schipper, 2010; Heide, Heijman, 2012; Bronisz et al., 2008), J. Andrei (cases of Eastern Europe in general and Romania in particular), (Erokhin, Ivolga, Andrei et al., 2014) and D. Cvijanovic and P. Vuković (investigations of perspectives of rural tourism in separate localities of Serbia and other Danube countries) (Cvijanovic, Vukovic, 2012).

Data are obtained from the reports of the Federal Service of State Statistics of the Russian Federation, Ministry of Agriculture of the Russian Federation, Ministry of Economic Development of the Russian Federation, administrative bodies of Moscow Oblast, related to agricultural production and rural policies (Ministry of Agriculture and Food Production of Moscow Oblast).

Results and Discussion

Rural population in Russia accounts 37.1 mln people, which is about 26% of total population. Working-age rural population is 21.4 mln people. There are 153.1 thousand settlements located in rural territories; over 133.7 thousands of them are permanently inhabited. Herein, 73% of rural settlements have less than 200 inhabitants, while settlements with over two thousand residents account only 2% (State Council of the Russian Federation, 2014).

Despite the serious structural changes, economic and social conditions of rural areas in Russia remain complicated. Levels of unemployment and poverty are twofold higher in comparison to urban areas; while rural labour compensations are twofold lower than the ones in other industries. Small and medium farming is being developed slowly; rural economy stays sector-specific; recreational potential is underutilized. Because of lower living standards, existing infrastructural problems and high unemployment people migrate to urban areas (Table 1). Number of rural settlements in 2010 (the latest census) decreased on 9.2 thousand in comparison to 1989, while the number of depopulated rural settlements increased twofold from 9.4 thousand up to 19.4 thousand. According to the All-Russian research institute of rural economy (VNIIESH), over one third of rural people consider an opportunity to leave rural areas in favour of cities. Among young people that share is even bigger – up to a half (Bondarenko, 2011).

Table 1. Number of rural inhabitants in Russia in 2000-2013, thousand people.

Years	Population, beginning of the year	Variation (+, -):				Population, end of the year
		gross increase	including:			
			natural increase	migration increase	territorial transformations	
2000	39470.6	-238.7	-274.2	-2.6	38.1	39231.9
2001	39231.9	-307.9	-271.7	-51.9	15.7	38924.0
2002	38924.0	-281.6	-281.9	-26.7	27.0	38642.4
2003	38642.4	-348.3	-281.5	-90.5	23.7	38294.1
2004	38294.1	324.8	-260.3	-108.8	693.9	38618.9
2005	38618.9	-200.9	-287.6	-117.4	204.1	38418.0
2006	38418.0	-287.0	-230.4	-109.0	52.4	38131.0
2007	38131.0	-248.6	-145.7	-50.9	-52.0	37882.4
2008	37882.4	-60.7	-113.3	-60.6	113.2	37821.7
2009	37821.7	-49.6	-88.9	-47.8	87.1	37772.1
2010	37772.1	-327.9	-81.7	-228.8	-17.4	37444.2

Years	Population, beginning of the year	Variation (+, -):				Population, end of the year
		gross increase	including:			
			natural increase	migration increase	territorial transformations	
2011	37444.2	-129.8	-42.5	-149.9	62.6	37314.4
2012	37314.4	-85.6	-6.3	-166.6	87.3	37228.8
2013	37228.8	-110.6	-0.8	-176.8	67.0	37118.2

Source: State Council of the Russian Federation, 2014.

That is not exclusively Russia's situation. Similar processes are observed in other countries. For example, USA and EU countries lose up to 5% of their rural population within 3-5 years (Lavrukhina, 2013). Low status value of rural life, high risks of agricultural production, and poor perspectives of rural activities in terms of career development and income lead to migration of people from rural areas worldwide. Over the last 14 years the number of rural inhabitants in Russia decreased on 2.4 mln people, whilst losses because of natural and migration factors were 3.8 mln people. Population decline was mainly caused by excess of mortality over fertility (63%). Activation of demographic policy in recent years decreased natural decline in the population. However, migration outflow grew substantially and became the main reason of depopulation in rural areas.

Nowadays problem of depopulation is the most severe in Kostromskaya, Tverskaya, Yaroslavskaya, Vologodskaya, Pskovskaya, Kirovskaya, and Magadanskaya oblasts. Over one fifth of rural settlements in those regions are depopulated and deserted (Merzlov et al., 2012). Only 18 regions of Russia out of 83 had migration increase in 2013. Four regions resulted with the coefficients of migration increase over 70: Kurskaya, Leningradskaya, Yaroslavskaya, and Moskovskaya oblasts.

Structure of economically active population in rural areas in 2012-2013 was improved; share of unemployed people revised from 9.6% in 2012 down to 8.5% in 2013 (Table 2).

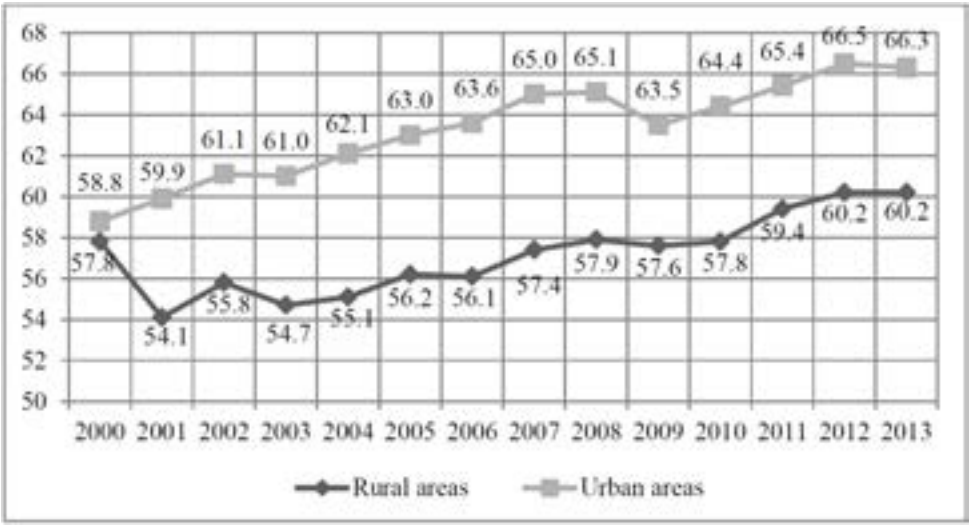
Table 2. Economic activity and employment of rural population in Russia in 2012-2013, thousand people.

Indicator	2012	2013	Variation (+,-)	2013 to 2012, %
Total population, the 15 to 72 age bracket , thousand people	27524	27524	-	100.0
Economically active population, thousand people	18100	18081	-19	99.9
including:				
employed, thousand people	16561	16579	18	100.1
employed, %	91.5	91.7	0.2	
unemployed, thousand people	1540	1502	-38	95.7
unemployed, %	8.5	8.3	-0.2	
Inactive population, thousand people	9424	9443	19	100.2

Source: State Council of the Russian Federation, 2014.

In 2000-2013 employment in rural areas was essentially lower in comparison to cities. There is an overall growth of employment rate, observed both in rural and urban areas in 2000-2013, however the growth rate for urban areas is threefold bigger, than in the rural ones. Employment rate for urban areas in 2013 gained 7.5 percentage points in comparison with 2000, while the one for rural areas – only 2.4 (Figure 1).

Figure1. Employment levels in rural and urban areas of Russia in 2000-2013, %.



Source: State Council of the Russian Federation, 2014.

Level of employment decreased in North-Caucasus and Privolzhsky federal districts to the utmost. North-Caucasus federal District has the highest unemployment rate – 14.3%. Unemployment levels in rural areas of Siberian and Far East federal districts exceed international standards as well (Table 3).

Table 3. Number of unemployed people and overall level of unemployment in rural areas of Russia, average of reference period.

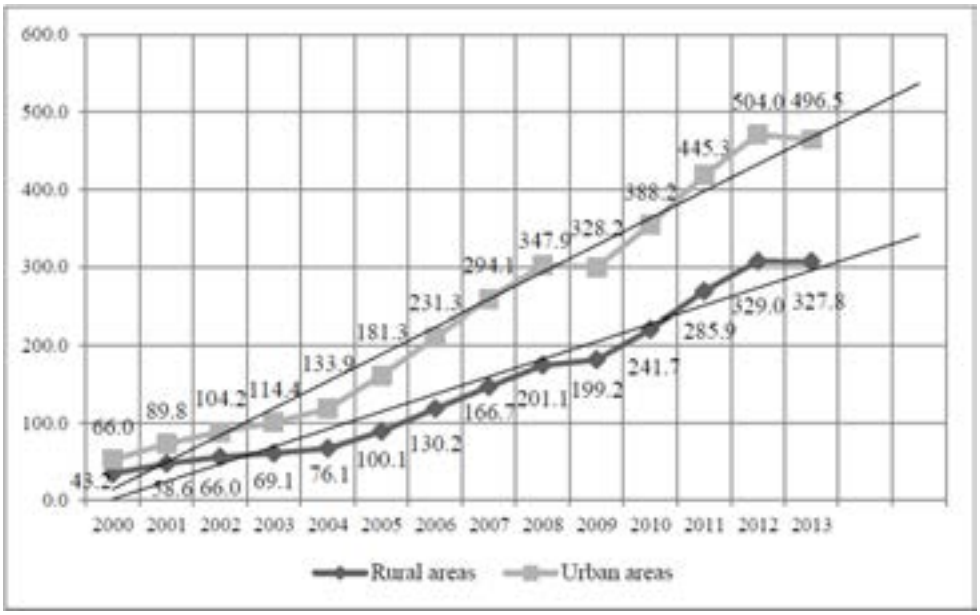
Federal district	Number of unemployed people, thousand people			Level of unemployment, %		
	2012	2013	2013 to 2012, %	2012	2013	Variation (+,-), p.p.
Russia, total	1540	1502	97.5	8.5	8.3	+0.2
Central Federal District	184	190	103.0	5.3	5.4	0.1
North-West Federal District	90	87	96.7	7.9	7.9	0.0
South Federal District	199	203	102.0	8.0	8.2	0.2
North-Caucasus Federal District	354	326	92.1	15.8	14.3	-1.5
Privolzhsky Federal District	281	264	94.0	6.6	6.2	-0.4
Ural Federal District	107	86	80.4	9.1	7.3	-1.8
Siberian Federal District	241	259	107.5	9.5	10.3	0.8

Federal district	Number of unemployed people, thousand people			Level of unemployment, %		
	2012	2013	2013 to 2012, %	2012	2013	Variation (+,-), p.p.
Far East Federal District	84	87	103.6	10.9	11.0	0.1

Source: State Council of the Russian Federation, 2014

Income gap between urban and rural territories is permanent over the referred period of 2000-2013– about 150% (*Figure 2*). Absolute amounts of per capita disposable incomes had been considered based on data of the State Council of the Russian Federation, 2014, adjusted for inflation (Rosstat, 2014) and recalculated in Euro (Central Bank of the Russian Federation, 2014). Despite its growth over the referred period, income level for rural areas is still very low. The linear trend developed to 2015 hardly reaches €350, while an average disposable income in urban areas is expected to excess €550 in 2015.

Figure2. Dynamics of average per capita disposable income in rural and urban areas of Russia in 2000-2013 and liner trends to 2015, euro per month.



* Presented financial numbers are real, inflation is considered (Rosstat, 2014). All financial numbers are calculated in Euro based on average Euro-Ruble ratios for each year.

Source: Author's development based on (State Council of the Russian Federation, 2014; Rosstat, 2012; Rosstat, 2014; Central Bank of the Russian Federation (2014)).

Overcoming differences between urban and rural areas in income level in particular and in economic, technological, and social development in general should become the strategic trend of rural policy in Russia. People will migrate back to rural areas from cities only in case they are aware of certain level of income, as well as infrastructure, comparable to urban conditions.

As of today, almost a half of regions in Russia (47%) are not favourable for sustainable rural development. Some of the regions are even considered as depressed ones, with various symptoms of economic downturn and social depression. Those regions concentrate about 64% of rural population of Russia (Merzlov et al., 2012).

According to the Agro2b Ranking (Agro2b, 2014), there are ten regions in Russia, which have more or less successful experiences in the sphere of rural development (Table 4). The research ranks regions on four sub-ratings (level of income, intensiveness of housing construction, quality of housing services and utilities, and access to nurseries and medical services in rural areas).

Table 4. Ranking of regions of Russia on quality of life in rural areas and level of rural development in 2013.

Rating position (total)	Region	Sub-ratings			
		income level	housing construction	housing services and utilities	nurseries and medical services
1	Krasnodar Krai	12	2	19	12
2	Leningrad Oblast	2	4	32	14
3	Tula Oblast	14	21	15	3
4	Moscow Oblast	20	1	25	21
5	Belgorod Oblast	1	9	8	50
6	Lipetsk Oblast	8	31	6	32
7	Stavropol Krai	13	24	7	35
8	Orenburg Oblast	57	23	5	4
9	Samara Oblast	56	19	12	9
10	Republic of Adygeya	5	52	21	19

Source: Agro2b, 2014.

It is worth noting that two regions of Russia, which are predominantly non-rural(Moscow and Leningrad oblasts), are still ranked among the leaders in rural development. Those regions are considered as attractive ones for incoming migration into their rural areas, with developed economic and social infrastructure, and high potential of rural development. According to A. Merzlov, Moscow and Leningrad oblasts have preconditions for development of rural areas of suburban type and poly-functional rural economy (Merzlov et al., 2012). Apart from most of the regions of Russia, they are characterized by high density of population in rural areas, developed transport, social and service infrastructure, high level of recreational utilization of available territories and resources, active housing construction, and high-productive farming (predominantly concentrated in big agricultural organizations and agri-industrial complexes). Moscow and Leningrad oblasts, occupying only 0.8% of overall territory of Russia, provide over 5% of national agricultural production. Potential of rural development in those areas is related to high migration attractiveness, proximity to the biggest economic centres of the country, easy access to urban infrastructures, better job opportunities in cities, developed and high-intensive agricultural production and food processing industries, and active involvement of local agricultural producers and processing companies into development of

rural infrastructure.

Moscow Oblast is the most advanced in Russia in terms of rural development and living standards of rural population. Rural population amounts to 18% of total population of the region, which is much lower, than in most of the regions of Russia. The average level of income in rural areas of Moscow Oblast is over €600, while the average level for Russia is about €328 (as calculated above). However, absolute amount is not always an indicator. If we compare the urban/rural income ratio, Moscow Oblast would be ranked only 20th out of 83 regions of Russia. That is because of Moscow City with its one of the highest average levels of income in Russia (€1200). In comparison to that amount rural people in Moscow Oblast have only a half of that level. In terms of the urban/rural ratio, the leading region of Russia is Belgorod Oblast, the only one in the country, where average income in rural areas excesses the one of urban territories (Table 5).

Table 5. Ranking of regions of Russia on level of income in rural areas in 2013.

Rating position	Region	Average monthly nominal wages per capita, euro		Agriculture / economy ratio, %
		all industries	agriculture	
1	Belgorod Oblast	471.86	492.23	104.32
2	Leningrad Oblast	620.66	556.95	89.73
3	Tambov Oblast	397.88	354.75	89.16
4	Kursk Oblast	440.91	381.45	86.51
5	Republic of Adygeya	394.32	340.61	86.38
6	Novgorod Oblast	502.42	425.34	84.66
7	Republic of Mary El	377.99	312.68	82.72
8	Lipetsk Oblast	458.05	376.91	82.29
9	Penza Oblast	451.20	366.81	81.30
10	Orel Oblast	398.40	317.24	79.63
…				
20	Moscow Oblast	842.18	605.42	71.89

* Presented financial numbers are calculated in Euro based on average Euro-Ruble ratios for 2013.

Source: Author's development based on (Agro2b, 2014).

Agricultural production provides 3% of GDP of Moscow Oblast. There are over 490 agricultural producers, 450 food processing enterprises, 6.6 thousand peasant farm enterprises, and 592 thousand rural households. Over 115.4 thousand people are involved into agricultural production, which is 8.2% of rural population of the region (Government of Moscow Oblast, 2012).

There is a special program adopted in Moscow Oblast in 2012, which is the Target program "Development of Agriculture and Regulation of Markets of Agricultural Commodities, Raw Materials and Food in 2013-2020" (Government of Moscow Oblast, 2012). The Program is aimed on complex development of local agri-industrial complex with allowances made for the recent Russia's accession into the World Trade Organization (WTO) and related

transformations of external economic and trade environment. It included several subprograms, one of which is especially related to sustainable rural development (Subprogram V). It aims at three major directions:

1. Housing improvements in rural areas, provision of housing for young families and young professionals in order to retain them in rural areas, improve demographics, and provide local employers with labour of high qualification.
2. Development and promotion of extension services, information, consulting and legal support of rural population and local agricultural producers;
3. Infrastructural advancement of rural settlements (transport networks, housing and public utilities, medical services, social and cultural facilities, etc.), (Government of Moscow Oblast, 2012).

Government of the Moscow Oblast and local Ministry of Agricultural and Food targeted the following results to be achieved by 2020:

1. Provision of rural population with major kinds of agricultural products and food in accordance with medical consumption criteria.
2. Growth of agricultural production on 30% by 2020 (in comparison to 2011).
3. Achievement of average profitability in agriculture over 25%.
4. Increase of investment attractiveness of regional agri-industrial complex.
5. Twofold growth of income level in comparison to 2011.
6. Development of rural infrastructure in the region.

The program assumes housing construction in rural areas (105 thousand square meters by 2020), including 69.3 thousand square meters for young families; introduction of 661.3 km of gas distribution networks and 336 km of local water pipelines; construction of new educational, cultural and medical facilities (Government of Moscow Oblast, 2012).

Such ambitious targets are directed on improvement of living standards of rural people, which is necessary in order to push rural infrastructures as closer to the urban ones as possible. However, to be able to ensure the long-term sustainable development of rural areas the region should not only retain people in rural areas, but also attract them. There should be no gaps between urban and rural people in income level, social protection, and infrastructure support. As we have already outlined below, one of the major threats to sustainability of rural areas is their proximity to urban agglomerations, which absorb labour and other resources. That is why the strategic goal to achieve is not only infrastructural development itself through construction. There should be the transformation of the existing radial (centripetal) system of settlement into the multipolar one, when people do not have to move to big city (Moscow) seeking for employment opportunities, but obtain comparable income and related opportunities in

the very place of their current location.

It is worthwhile to mention the second place of Leningrad Oblast in Agro2b Ranking on level of income in rural areas. Although Saint-Petersburg is threefold smaller than Moscow, Leningrad Oblast also has distinct features of a suburban region, where rural areas and rural population are gravitated by big urban agglomeration. The gap between income levels in urban and rural areas is not as severe in Leningrad Oblast, as it is in Moscow Oblast (89.73% and 71.89% accordingly), however the average monthly wages per capita is much lower in comparison to Moscow (€620.66 and €842.18 accordingly in general, €556.95 and €605.42 accordingly in agriculture).

Leningrad Oblast is the Russia's biggest producer of eggs; it is ranked second among other regions of the country on poultry meat production, and third on trout production. Total volume of agricultural production of Leningrad Oblast in 2013 amounted to €728.9 mln (4.4% of GRP).

However, despite certain successes of those regions in the sphere of economic development, such suburban regions, as Moscow and Leningrad oblasts, as of A. Merzlov, have common problems in terms of rural development, related to land relations (land conflicts and higher prices for land in comparison to other regions), shortage of environmental and rural landscapes because of industrial and residential construction, and environmental problems (Merzlov et al., 2012).There are certain shortages, common for all regions of Russia, related to agricultural production incentives, support of local producers of agricultural and food commodities, especially small and medium ones, effective management in agriculture and rural development, encouragement of investments, promotion of innovation-driven growth of agricultural production, and effective utilization of existing natural and environmental resources (Lescheva, Ivolga, 2006). There are specific threats to sustainable rural development as well, caused by proximity to such big urban agglomerations as Moscow and Saint-Petersburg. The main concerns of such "gravitational attraction" are:

1. exhaustion of the most qualified labour resources from rural areas in favour of cities;
2. conversion of traditional agricultural production into service industries and other non-agricultural types of economic activities;
3. absorption of rural areas by city suburbs and conversion of agricultural lands into lands acquired for public and commercial purposes;
4. growing social tensions because of huge migration inflows, particularly from neighbour countries of other languages, religions and cultures.

The abovementioned threats are additional to the existing weaknesses of agricultural production in Russia:

1. low rates of rehabilitation of natural and environmental resources and renovation of productive capacities in agriculture;
2. financial imbalance of agricultural production, caused by volatility of markets of

agricultural commodities, raw materials and food, insufficient investments and low development of agricultural insurance;

3. shortage of labour of high qualification, caused by low living standards in rural areas.

In order to ensure sustainable rural development in such predominantly non-rural regions, as Moscow and Leningrad oblasts, in the conditions, when urban employment opportunities are much more attractive and beneficial for people, while rural way of life is less prestigious, when cities absorb traditional rural areas and lands are withdrawn from agriculture, is it necessary to implement a complex approach to rural policies both on federal and local levels (Ivolga, 2006). After all, proximity of rural areas to urban agglomerations is not only a threat, but also an advantage. There is always a huge market for local agricultural commodities and food (especially organic ones, which are becoming more and more demanded in big cities in Russia); bigger pool of distributors potential investors; easier access to newest developments and technologies to be introduced into agricultural production; far more developed infrastructure (especially transport and distribution) in comparison to other regions; great potential of rural tourism and other non-agricultural activities (cultural, ethnographical, etc.), which may attract people from neighbour cities to rural areas and bring alternative income opportunities.

There are already several sustainable settlement systems existing on the territory of Moscow Oblast (Table 6). They are being developed according to the dominant characters of functional territorial management in order to implement perspective territorial transformations in Moscow Oblast. Those transformations are directed on accelerated development of middle and peripheral parts of Moscow Oblast (its rural areas) and strengthening of circular and bisecant linkages between rural settlements themselves, without much involvement of central agglomeration: labour migration flows, economic, production, social, cultural and recreational relations of rural people (Government of Moscow Oblast, 2012).

Table 6. Sustainable settlement systems of Moscow Oblast: types and labour.

Settlement system	Type	Pillar settlements	Number of workplaces, thousand		
			2004	2010	2020 (forecast)
Dolgoprudnensk-Khimky-Krasnogorsk	Urban	Lobnya, Dolgoprudny, Khimky, Krasnogorsk	164.5	175.1	192.5
Mytyschy-Pushkino-Schelkovo	Urban	Mytyschy, Korolev, Pushkino, Schelkovo	317.5	335.2	364.5
Balashikha-Lyubertsy	Recreational urban	Balashikha, Reutov, Lyubertsy, Kotelniki	260.6	277.0	304.6
Troitsk	Recreational urban	Troitsk, Pervomayskoe	52.1	70.7	102.1
Odintsovo	Urban	Odintsovo, Marfino	44.3	46.2	50.3
Istra-Zvevigorod	Recreational urban	Istra, Zvinigorod, Ruza	130.6	155.0	195.6

Settlement system	Type	Pillar settlements	Number of workplaces, thousand		
			2004	2010	2020 (forecast)
Klin	Recreational urban	Klin, Solnechnogorsk	101.8	135.4	191.8
Yakhroma	Recreational rural	Dmitrov, Yakhroma	28.5	38.6	55.5
Noginsk	Urban	Noginsk, Elektrostal	201.1	228.0	273.1
Vidnoe-Podolsk-Ramenskoe	Recreational urban	Scherbinka, Podolsk, Vidnoe, Ramenskoe, Zhukovsky, Gorki	338.4	406.3	519.4
Naro-Fominsk	Recreational rural	Naro-Fominsk, Aprelevka	62.6	72.7	89.6
Volokolamsk-Mozhaysk	Recreational rural	Mozhaysk, Vereya, Volokolamsk	84.8	94.9	110.8
SergievPosad	Recreational rural	SergievPosad, Dubna, Dmitrov, Taldom	206.7	222.5	249.7
Orekhovo-Zuevo	Recreational urban	Orekhovo-Zuevo, Lykino-Dulevo	120.3	138.9	169.3
Kolomna	Recreational urban	Kolomna, Egorievsk, Voskresensk	135.7	158.6	196.7
Chekhov	Recreational urban	Chekhov, Mikhnevo	67.8	73.2	82.8
Zaoksk-Meschersk	Recreational rural	Shatura, Kolomna, Zaraysk, Roshal	96.6	104.8	117.6
Serpukhov-Kashira	Recreational urban	Serpukhov, Stupino, Kashira, Kolomna	196.1	216.5	251.1
Total			2610.0	2950.4	3517.0

Source: Author's development based on (Government of Moscow Oblast, 2012).

There are five out of 18 settlement systems of Moscow Oblast referred to as recreational rural ones. Others have certain potentials in the sphere of recreational and rural way of development as well. Further development of such decentralized sustainable settlement systems will secure the natural and environmental resources, ensure territorial and functional development of rural areas, and restore their historical and cultural identities. Decentralization will let to reverse symptoms of continuing centripetal development of Moscow Oblast and provide new incentives to development of suburban rural areas.

Conclusions

As our analysis shows, many Russian experts (Lavrukhina, 2013; Lescheva, 2008; Bondarenko, 2011; Erokhin, Ivolga, 2012) acknowledge the systemic crisis in agriculture, which is partly a result of economic reforms, occurred in Russia in 1990-2000s, partly a consequence of global tendencies of growing population and issues of food security. Those issues stipulate increasing

attention to rural territories as a source of agricultural commodities and food. However, current situation cannot be changed at once. Attractiveness of rural areas and effectiveness of agricultural production cannot be increased with just a bigger amount of investments. Rural way of life is like a social paradigm, which is developed under an influence of a whole set of non-economic factors: social, cultural, historical, ethnic, etc.

Perspectives of sustainable development of rural territories in Russia, in view of accumulated international and domestic experience, had been considered in two major directions:

1. Development of "agricultural cities". Experience of Belgorod Oblast of Russia shows that rural settlements get bigger with natural movement of people from peripheral districts of the region, as well as from neighbour regions and even countries. From one point of view, such attraction of people into rural areas serves as a driver for economic development. However, conversely, bigger rural settlements mean urbanization, reduction of agricultural producers and rural households, development of non-agricultural activities, and finally decrease of traditional agricultural production, which is always a threat to sustainable rural development. According to E. Lavrukhina, such way causes further "demographic shrinkage" of depopulation of peripheral rural districts (Lavrukhina, 2013).
2. De-urbanization and attraction of urban people to rural areas. This way requires development of related infrastructure in rural districts, including housing, social and medical facilities, employment opportunities, transport, etc. Rural districts may become attractive for resettlement only in case of insurance of living standards at least equal to urban ones. Such way has led many countries to development of "satellite rural settlements".

Both ways may be adjusted for Russia taking into account specifics of its particular regions. Our research of predominantly non-rural regions, gravitationally attracted by big urban agglomerations, has shown the perspectives of decentralization as an alternative way to ensure long-term sustainable development of rural areas. In such regions decreasing role of agriculture and related labour saving cause the necessity of diversification of rural economy and provision of alternative employment. As of today, rural people seek for such an alternative employment in the cities, while it should be available in the traditional places of their inhabitation. Development of decentralized sustainable settlement systems in the suburban rural areas may ensure strategic sustainable development of rural areas and secure their historical and cultural identities.

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ON THE COMPETITIVENESS OF MEXICO'S DRY CHILI PRODUCTION

David Gaytán[1], Francisco Benita[2]

Summary

Mexico has become the sixth-largest dry chili exporter in the world and the largest chili (Capsicum annuum L) exporter, showing not only its production capacity but also giving it a decisive advantage over its main competitors. The aim of this paper is to describe the competitive structure and dynamics of chili exportations in Mexico over the period 1993-2008. In order to compare the export growth performance with the performance of similar exporter countries, we look at the behavior of the Revealed Export Advantage index and the Constant Market Share Analysis. For all countries included in the analysis, the study considers the U.S as the objective market due to the current dry chili export market participation. The result suggests that Mexico occupies an important place in the global production but not a leadership place in exportations of dry chili at worldwide level.

Key words: *competitiveness, exportation, capsicum annuum L, Mexico.*

JEL: *F14, N70, Q17*

Introduction

The agricultural sector has been demonstrated to contribute to improve the behavior of many economic activities, and at the same time it figures prominently in the development strategy of the countries. The participation of agricultural activities on economies is a system to enforce international trade competitive advantages, this fact is particularly interesting given the global economy where competition across manufactured products is generated by a high value-added supply chains. Most of this competition, based on the know-how, involves agricultural products that allow producers to capture greater value than would normally be secured through conventional commodity channels.

1 David Gaytán, Ph.D., Full Professor, Autonomous University of Zacatecas, Instituto de Investigaciones Económicas y Sociales, Preparatoria Avenue, 98068 Zacatecas, Mexico, Phone: +52 492 922 4223, E-mail: davidgaytan81@gmail.com

2 Francisco Benita, Ph.D. Candidate, Research assistant, ITESM (Tec de Monterrey) Campus Monterrey, Department of System & Industrial Engineering, Eugenio Garza Sada Avenue 2501 Sur, 64848 Monterrey, Mexico, Phone: +52 81 8158 2000, E-mail: francisco_benitahotmail.com

The above ideas raise interesting research questions, especially in countries such as Mexico where agriculture is one of the main economic activities. Moreover, agribusiness activities in the countryside provide an opportunity to farmers and other stakeholders to realize higher and more stable income. The agribusiness activities also provide a secure and safe food supply to people, filling the first requirement of any sovereign state. In doing so, a broad view of the production process could be analyzed by identifying strengths and weaknesses, and becoming an important tool for analysis of agricultural activities.

According to the Mexico's Agri-food and Fisheries Information Service (SIAP), the country is the biggest exporter of green chili in the world and the sixth largest one of dry chili. Among the main customers of dry chili we can mention the U.S., Japan, Germany, Canada and the UK (SIAP, 2010). The long tradition of Mexico's chili consumption and production started during the Mesoamerican context, and nowadays chili could be considered as one of the main sources of feed in the country. In view of this, it is necessary to recognize the strong impact of this product on the production structure of Mexico, particularly in employment generation, foreign exchange earnings, market access in potentially important markets and agricultural value chains.

In Contreras (1999) the competitive advantage in production and exportation of avocado is analyzed during the period 1986-1997, the author concludes that Mexico shows growing revealed comparative advantages in this product especially due to the important growth in the exports to France. In a similar study, Ayala et al. (2008) analyze the competitiveness of Mexican bean in trade openness context, despite the large production their results suggest that at macro level the competitiveness was negative due to the overvalued exchange rate, favoring the dumping of imports in local markets. Finally, using technology levels, production costs, profits and prices, in Reyes et al. (2006) is pointed out the performance of the dry chili production system in the state of Zacatecas, Mexico. The authors found that as property size and technology application increase, yields per hectare were bigger and profitability increased as well.

Although there are some previous studies that have addressed competitiveness issues for agricultural products in Mexico, there is a lack of evidence related to the dry chili in the international market. The combination of the previous features leads us to suggest as a main hypothesis of the paper that Mexico is losing competitiveness on its capacity to increase the exports of dry chili. On the other hand, we assume that China and India have been raising their comparative advantage in dry chili exports. However, we think that the important geographical position of Mexico as a neighbor of the U.S. and the increasing demand in spicy products are strong opportunities for develop the agri-food industry, especially regarding commercialization of many chili varieties.

Following the focus on trade openness, the aim of this paper is to analyze the dynamic of chili exports in Mexico in comparison with its main competitors over the period 1993-2008. Using the Revealed Export Advantage index (RXA) and the Constant Market Share Analysis (CMSA) this study outlines competitive advantages of the product where dynamic could be attributable to the characteristics of the region (competitiveness

effect). The results allow decision-makers to construct a rich understanding of the supply chain process.

Methodology

To capture the degree of specialization of a country, the RXS allow us to estimate revealed advantages of a country taking into account various characteristics. The concept of "revealed" export advantage was introduced by Liesner (1958) but redefined and popularized by Balassa (1965). Formally, the RXA of product *a* in country *i* is given by $RXA_{ai} = \left(\frac{x_{ai}}{x_{ni}}\right)/\left(\frac{x_{ar}}{x_{nr}}\right)$ where x_{ai} is the export value of product *a*, x_{ni} is the value of total exports (minus product *a*), x_{ar} is the world's export value of product *a* (minus country *i*) and x_{nr} is the total world's export value (minus product *a* and minus country *i*). On the basis of this index, a country is defined as being specialized in exports of a certain product if its market share in the product is higher than the average or equivalently, if the weight of the product of the country's exports is higher than its weight of the exports of the reference area. A country reveals comparative advantages in products for which this indicator is higher than 1, showing that its exports of those products are more than expected on the basis of its importance in total exports of the reference area.

The second level of analysis consists in exploring causes of changes in exports. In doing so, the CMSA allow us to investigate trade trends and laws in order to determine those factors affecting country's export-performance. The CMSA model was first used by Tyszynski (1951) for trade in industrial products where the basic model determines a country's share in the reference market. In basic CMSA the change in a country's exports is made up by the sum of three effects: scale effect, competitive effect and second-order effect. Formally, these effects are determined by:

$$\Delta q = S_0^j \Delta Q^j + \Delta S^j Q_0^j + \Delta S^j Q^j \quad (1)$$

where *q* is the quantity of exports, Δ express the change in the variable over a discrete period of time, *S* represents the proportion in the market of a specific country and *Q* contains the volume of exports by the group of competing countries that export to the reference market. The indexes *j* and 0 represent the reference market and the beginning of the period, respectively. Specifically, this study considers U.S. as the reference market due to its importance in imports, consumption and economic growth.

The first term in the right-hand side (scale effect) of equation (1) is the average of growth in dry chili exports if individual market shares are constant. If the effect is positive, growth in the product's demand will affect positively the variation of exports. The second term (competitive effect) can be interpreted as the average growth in dry chili exports if imports are fixed. The negative or positive sign indicates the loss or gain in competitiveness during the period of analysis. Finally the third term (second-order effect) reflects the average correlation between export growth and market share growth. However, the scale effect and competitive effect in the basic model can be further decomposed to provide insights

into whether they are due to the general growth in all markets or due mostly to the growth in some markets. This decomposition at the second level have been used for the case of Mexico with the intention to analyze the exports of avocado, fruits and vegetables, and strawberries, respectively, the extended technique have been used by Contreras (1999), Avendaño (2008), and Ávila-Arce and González-Millán (2012). Formally, the change in a country's exports is given by:

$$\Delta q = S_t^0 \Delta Q_j + (S_j^0 \Delta Q_j - S_t^0 \Delta Q_j) + S_t \Delta Q_j^0 + (\Delta S_j Q_j^0 - \Delta S_t Q_j^0) + \left(\frac{Q_t^1}{Q_t^{0-1}}\right) \Delta S_j Q_j^0 + \left[\Delta S_j \Delta Q_j - (Q_t^1 / Q_t^{0-1}) \Delta S_j Q_j^0\right] \quad (2)$$

where 1 represents the end of period *t*.

Hence, a total of six effects can be obtained from (2): 1. Growth effect $(S_t^0 \Delta Q_j)$: is the change in exports that occurs when an exporter's share remains constant. 2. Market effect $(S_j^0 \Delta Q_j - S_t^0 \Delta Q_j)$: is the change in exports that is observed if the exporter maintains its initial participation in the reference market during the period. 3. Pure residual effect $(S_t \Delta Q_j^0)$: represents the part of the change in exports that is attributable to changes in general competitiveness. 4. Static structural residual effect $(\Delta S_j Q_j^0 - \Delta S_t Q_j^0)$: measures the change in exports attributed to changes in competitiveness in the reference market. 5. Pure second-order effect $\left((Q_t^1 / Q_t^{0-1}) \Delta S_j Q_j^0\right)$: measures changes in an exporter's share in the reference market and changes in global demand. 6. Dynamic structural residual effect $(\Delta S_j \Delta Q_j - (Q_t^{1-1} / Q_t^{0-1}) \Delta S_j Q_j^0)$: contains the interaction between an exporter country's share in the reference market and the changes in its level of demand.

Finally, we produce a Strengths, Weaknesses, Opportunities, Threats (SWOT) analysis in order to identify the advantages, difficulties, but also areas of opportunity that can benefit producers. The intention of the analysis is to enhance their competitive qualities reflected in their export qualities.

Results

Figure 1 shows the dry chili export capacity of Mexico over the period 1993-2008, despite the significant fall in recent years, the export trends (tonnes and value) are positive. However, due to the downward trend since1999 it is difficult to know how to interpret Figure 1. The RXA and CMSA will provide us important information about the competitiveness behavior and thus, being able to know if the downward is attributable to competitive reasons.

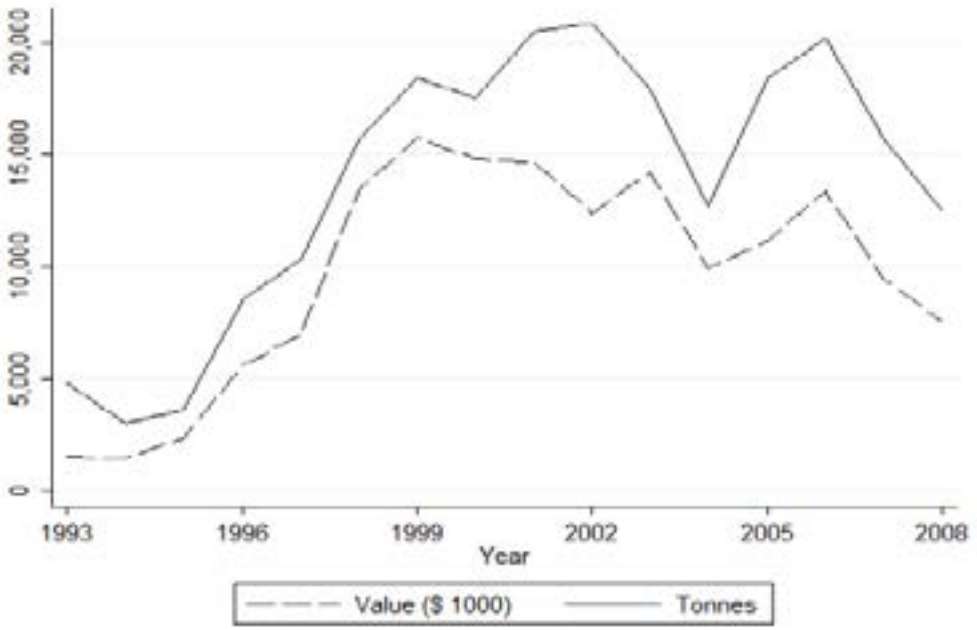
Considering all the varieties such as fresh and dried, the evolution of Mexico's chili exports has been even more encouraging. The dynamic growing of Mexican chili exports is showed in Figure 2, though, the relative weight of the dry chili on them have been really low, it is possible to appreciate a constant growing trend.

In addition, it is important to note that Mexico has been one of the countries most involved in the production of chili, especially considering in all its varieties. Regarding to the export levels (tonnes and value), the country has ranked between the eleventh and eighth place on

the list of major dry chili exporting economies. During the period 1993-2008, the countries that have occupied the first three places according to its export levels have been China, India and Spain. The result is particularly interesting since we can easily identify the main competitors to Mexico.

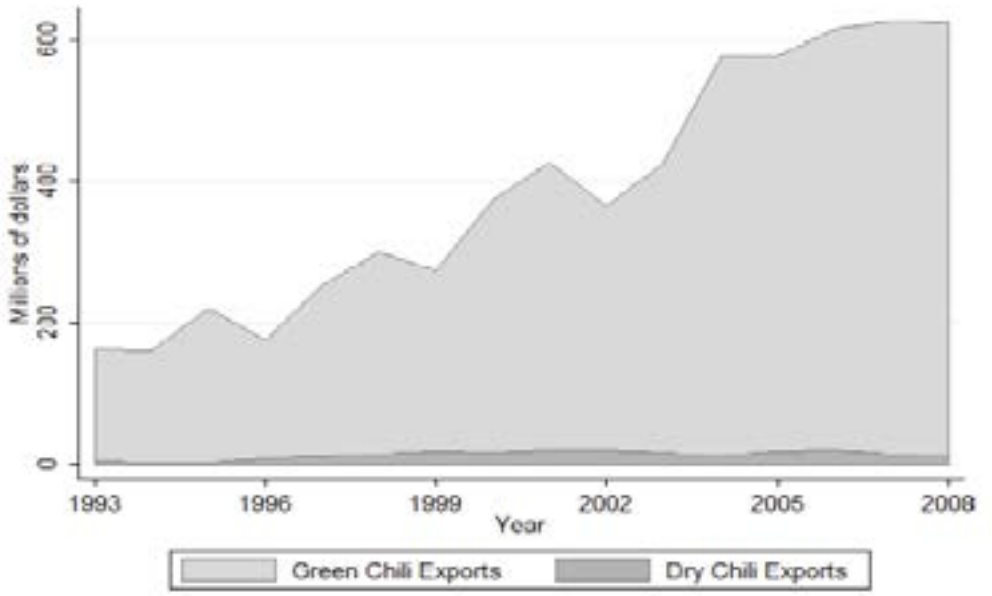
Extending the Mexico's comparative and competitiveness analysis, Table 1 shows the relative advantage derived from calculating the RXA of dry chili. We may expect that high levels of exportation volumes will correspond to high values on the index. However, the index behavior depends also in the relative weight of chili on the structure of agricultural trade industry. As a result, although China was the main producer in 1993, 1998 and 2003, India's economy reported the highest values on the RXA with exception of the year1998.

Figure 1. Mexico dry chili exports, 1993-2008



Source: Author's own elaboration based on data from the website of the Statistics Division of the Food and Agriculture Organization of the United Nations (FAOSTAT).

Figure 2. Mexico chili's total exports by variety, 1993-2008



Source: Author's own calculation based on data from FAOSTAT website.

In the case of Mexico, it is remarkable that during the whole period the country reported values on the index lower than one, therefore, the result could be interpreted as a lack of comparative advantage, possibly explained by the large proportion of green chili (and other agricultural products) in exports. However, this result is not a detriment to the competitive qualities of the dry chili production because the dynamic behind exports can reflect a positive trend once we disaggregate its main factors.

Table 1. Revealed Export Advantage: Major dry chili producers, 1993, 1998, 2003 and 2008

Year	China	Spain	India	Mexico
1993	1.75	1.32	2.32	0.54
1998	2.31	1.29	2.07	0.72
2003	2.75	0.76	3.08	0.53
2008	3.92	0.71	4.32	0.21

Source: Author's own calculation based on data from FAOSTAT website.

In Table 2 the detailed results of the CMSA are presented. From the magnitude of the exports change only Spain shows a negative variation, implying that with the exception of this country, the change in exports is attributable to a significant increase in demand. Despite in the case of Mexico, the effect of the change in exports is positive, its magnitude

is very low compared with China or India. Nevertheless, the reading of Table 2 should be done carefully. The second level of decomposition shows a high relative market effect in Mexico, explained by fixing U.S. as the weight of target market. The intuition behind this high-value of the market effect in Mexico can be somewhat related to the advantages of the geographical proximity to the U.S. market, the important number of trade agreements and the lower transportation costs compared with its competitors.

Table 2. Market share effect of Mexican dry chili exports, 1993-2008

Indicator	China	India	Spain	Mexico
Exports change	6181.06	6,463.51	-13.37	353.56
First level of decomposition Δq				
Scale	5,422.44	5,342.70	37.60	284.63
Competitiveness	318.97	298.85	-40.23	15.23
Second order	439.66	821.95	-10.74	53.70
Second level of decomposition Δq				
Growth	3,724.01	3,401.30	46.60	46.83
Market	1,698.43	1,941.40	-8.99	237.79
Second order	137.97	1,697.84	-62.53	10.74
Static structural residual	181.00	-1,398.99	22.30	4.49
Pure second order	554.95	1,549.69	-27.06	56.59
Dynamic structural residual	-115.29	-727.74	16.31	-2.88

Source: Author's own calculation based on data from FAOSTAT and EUROSTAT FAS-USDA.

Under this scheme, it is clear that Mexico is underutilizing existing natural opportunities to capitalize on competitive sales at least as far as the export capacity is concerned. Furthermore, in Mexico are grown over a hundred varieties of chili concentrated in 22 groups of green types and 12 groups of dry types, the varieties of jalapeño, poblano, serrano or bell pepper are the most consumed (SIAP, 2010). This natural advantage allows investors to earn higher returns by taking advantage of Mexico's strengths in chili production.

Table 3. Production and commercialization strategies for Mexico's dry chili/SWOT Analysis

STRENGTHS	WEAKNESSES
• Mexico occupies an important place in the international green and dry chili´s markets. • Increasing trend in exports (volume and value). • Stability on sales to the U.S market. • Stable revealed export advantage where the market is able to handle a large volume of trades without causing large shifts in price.	• Weak path in exports (volume and value). • Low share of participation overall total export volumes. • There is a short window opportunity of access to Southeast Asia's market and also a strong competition by India and China. • Weak upward trend in the revealed export. • Due to the evolution of the yield per hectare and total cultivation area, it is possible to infer the existence of problems related to low technology and poor quality levels. • Low value added.
OPPORTUNITIES	**THREATS**
• By exploiting the high demand for chili and improving the logistics distribution supply chain it is possible to increase in the participation rate of dry chili among the total exports (all varieties). • Mexico can take the place of Spain as an attractive source of dry chili supply, and moreover, to become a strong competitor to Peru in the U.S. market. • Important weight of the market effect. The result is largely explained by the increase in exports due to both, fixed U.S. as the main destination market and the large number of free trade agreements. • To promote greenhouse production in order improve quality levels, increase production and promote the early harvest. • Add value to the commodity before export. • Design a strategy with the intention of exploiting the benefits of its high nutritional value. • Be able to exploit the large number of chili varieties. • Take advantage of the U.S. Hispanic market. • The possibility to develop insecticides based on chilly with innocuous proprieties.	• The increasing participation of China and India in world dry chili exports. • Mexico could be displaced from the U.S. market. • China and India show an important component of the growth factor in exports volume, highlighting its competitiveness through comparative advertising countries. • The Market distortions generated by the large number of intermediates. • The producer's vision of export process is still limited.

Source: Author's own elaboration based on previous results.

Finally, Table 3 presents the SWOT analysis of the dry chills production in Mexico. It is important to remark that despite the low magnitude in the market effect (in comparison with China or India) the Mexican product has great potential to become a successful export item due to the size of the U.S. market and its high consumption.

As derived from the SWOT results, it appears that Mexico has a privileged geographic location, not only because it possess extensive areas where the climate and ground composition favor the cultivation of chili in all its varieties (fresh and dried), but also because its proximity to the U.S. market. The regional and natural advantages place Mexico in a unique category relative to the rest of the producers. Thus, there exist a real opportunity in order to increase the exports and promote competitive processes in the supply chain, especially in the value-added issues.

Therefore, the country has the potential to develop export strategies taking into account the geographical proximity to U.S. and the large Hispanic consumer segment in that country where chili occupies a central place in their diet. Finally, the intensification of international economic competition has been derived in savings in transport costs, and global mobility of capital, inputs and products. But at the same time, the new market conditions have nullified in somehow the advantages of location opening possibilities for distant producers such as China or India.

Discussion

The results derived from this paper show present competitiveness indicators for one of the most popular Mexican agricultural products. The competitiveness indicators are consistent with the comprehensive diagnosis presented in Ayala et al. (2008) about the loss of competitiveness on the Mexican agricultural sector during 1980-2009. Hence, according to the authors, represents a serious threat due to the implications that the agricultural sector has on the rural population welfare.

Considering the approach of Taylor (1997) the loss of competitiveness of Mexico in the dry chili exports can be partially explained by the sector internal conditions, in particular on its technological-productive structure. Moreover, the findings on the poor performance of competitiveness are consistent with the study of Gómez-Oliver (2008) where the author notes that the problem of low competitive capacity is multidimensional possibly explained by the low investment rates and the insufficient support from the government on the countryside. In addition, similar studies (Schwentesius et al., 2011, Avendaño, 2008) where other agricultural products are considered, suggest that Mexico requires a restructuring policy instruments applied to promote development in rural areas, especially regarding to the development of management skills, organization competencies, and technological innovation process.

This document is limited to describing the evolution of Mexico's dry chili exports by disaggregating its determinants. Thus, one of our main objectives is to derive regulatory elements in order to capitalize on opportunities for agricultural producers and local governments. In spite of this scenario, some alternatives to deal with, we can found the technical improvement of chili's production process, the adoption of new cultures in greenhouse cultivation, inspection and treatment of plants, and the added value with

respect to the traditional commodity (e.g. the production of sauces or chili powder for retail sale, snack manufacturing and Mexican cuisine). It is also relevant to consider possible small cultivation areas in order to reduce production cost, generate increasing returns to scale and obtain a higher level of productivity from ground optimization process. Furthermore, we should note that it is necessary to capitalize the advantages of international trade about Mexican chili products. Dry chili could take an important place in exports, especially to U.S., and also boost its competitiveness against the onslaught of Asian and South American producers.

In general, the current scenario provides some difficulties for the development of Mexican dry chili's production and trade. Policy measures to encourage producers to continuously improve and to invest in the development of their organization, their workers and their technical structure, may be recognized as a possibility to address the current limitations on exports. The improvements in these areas added to the natural advantages in production should lead to more effective and efficient trade, especially considering the current possibilities of export to U.S. The outlook, therefore, remains optimistic due to the market opportunities. Finally the country has several veins of opportunity that could place Mexico as production and trade leader of chili in all its varieties.

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ECONOMIC EFFECTIVENESS OF MECHANIZED HARVESTING OF CHAMOMILE[1]

Sanjin Ivanović[2], Miloš Pajić[3], Todor Marković[4]

Summary

Chamomile as a medicinal and aromatic plant is very important as a valuable product in the world market of medicinal plants. Regardless of that, there have been only a few researches so far concerning economic effects of its production. Costs of chamomile harvesting require special attention as these costs, as a rule, account for a major portion in the structure of total costs.

The aim of this paper is to show when it is economically justified to substitute hand harvesting by machine harvesting as well as to determine the largest possible investment in purchasing different harvesters for chamomile harvesting. For that purpose were used enterprise budgeting (analytical calculations) of chamomile production, calculations of costs of agricultural machinery, as well as dynamic methods for investment evaluation (present value method).

It was determined that it is economically justified to substitute hand harvesting with mechanized harvesting of chamomile on land area of over 2.5, i.e. 4 ha of chamomile, depending on the harvester type. If harvesters are used on land areas smaller than this economical effectiveness of the investments in purchasing them, i.e. their present value, depends on the harvester type and the land area on which chamomile is grown.

Key words: *chamomile, harvesting costs, hand harvesting, harvester, present value.*

JEL: *Q12*

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2 Sanjin Ivanović, Ph.D., Associate Professor, University of Belgrade, Faculty of Agriculture, Department of Agricultural Economics, Nemanjina 6, 11080 Zemun, Belgrade, Republic of Serbia, Phone: +381 (11) 26 15 315, ext: 426, E-mail: sanjinivanovic@agrif.bg.ac.rs

3 Miloš Pajić, Ph.D., Assistant Professor, University of Belgrade, Faculty of Agriculture, Institute of Agricultural Engineering, Nemanjina 6, 11080 Zemun, Belgrade, Republic of Serbia, Phone: +381 (11) 26 15 315, ext: 442, E-mail: paja@agrif.bg.ac.rs

4 Todor Marković, Ph.D., Assistant Professor, University of Novi Sad, Faculty of Agriculture, Department of Agricultural Economics and Rural Sociology, Trg Dositeja Obradovića 8, 21000 Novi Sad, Republic of Serbia, Phone: +381 (21) 48 53 419, E-mail: todor@polj.uns.ac.rs

Introduction

Chamomile is a medicinal plant of particular importance and wide use in different industries. Growing medicinal herbs can be an opportunity for farms to diversify the structure of their production, thus decreasing the risk of farming which exists when the usual cultures in sowing structure are grown. Apart from that, high profit per unit of land area is achieved in chamomile production, which enables farmers to significantly increase the total result of farm business.

On the other hand, medicinal plants have no share in the sowing structure of majority of the farms. The reasons for this are multiple, but the main ones are unregulated market, export issues etc. Apart from that, production of medicinal herbs requires specific knowledge from the field of production technology, and sometimes use of special machines and equipment. This is why it is so difficult for farmers to decide to start this production. Small participation of chamomile in the sowing structure of farms is the reason why economic effects of its growing have not been studied enough. On the other hand, because of Serbia's accession to the European Union it is possible to expect harmonization of the national with EU regulations and standards (Antevski et al., 2012), which will make it easier for Serbian agricultural products to appear in the European Union market. Based on that, some current issues regarding selling of chamomile could be solved.

One of the most important issues in chamomile production is mechanization of harvesting. The best quality of chamomile is obtained when it is harvested by hand, which is labour-intensive, causes high price of the product, it is difficult to organize harvesting process and it causes a series of other problems (Franke, Schilcher, 2005). Mechanized harvesting requires a forced compromise between the quality of harvesting and the degree of mechanization, just like with other cultures. There are a large number of harvesters for chamomile harvesting in the market, self-propelled, pull-type, semi-mounted and tractor mounted harvesters. They all differ according to their technical properties and construction, as well as the quality of harvesting and performance (Pajić, 2012). Considering specifics of using different types of harvesters for chamomile harvesting in the Republic of Serbia, researches so far performed have shown that semi-mounted and tractor mounted harvesters offer better economic effects (Pajić et al., 2011).

Taking into account the problem of chamomile production, Singh et al. (2011) state that chamomile harvesting requires significant employment of labour, which is the reason for having the greatest share in chamomile production costs. Santucci et al. (2013) analysed profitability of chamomile production, starting from the assumption that chamomile is harvested only by hand, which was considered to be justified in this research because they analysed the situation in which unemployment in rural areas was very high, while the labour costs were low.

Hand harvesting of chamomile in Serbia is typical for small farms and undeveloped or underdeveloped regions, while large chamomile producers choose only mechanized harvesting. In addition, harvesters which are used for chamomile harvesting have different technical characteristics and different operation qualities (Pajić et al., 2001).

Because of this, different harvesters influence different revenues, costs and profit in chamomile production. The choice of harvester for chamomile harvesting can be made based on different methods, and one of the methods is calculating current value of costs of these machines (Ivanović et al., 2007). In order to determine the current value of costs, the authors used different discount rates. They also established the limitary discount rate at which costs of competitive machines are equal. Stričík and Salamon (2007) studied the problem of investing in harvester for chamomile harvesting, as well as the optimum size of land for chamomile growing.

The aim of this paper is to determine whether it is more profitable for a farm to harvest chamomile by hand or by using mechanization, i.e. what is the limitary land area under chamomile for economically justified switching to mechanized chamomile harvesting from hand harvesting. Another aim of the paper was to evaluate which of the harvesters for chamomile harvesting (available in the market) is more economically acceptable. In order to do that, profit in chamomile production achieved on different land areas under chamomile will be calculated, bearing in mind different harvesting methods (hand harvesting, mechanized harvesting). The aim was also to calculate the present value of investments in specific types of harvesters.

Materials and methods

This research was based on the data obtained through experiments in production conditions. The researches were carried out in the research and production fields of the Institute of Medicinal Plant Research "Dr Josif Pančić" in Pančevo, during the production year 2006/2007. Field researches were carried out by split-plot method, in three repetitions, on the total land area of 7,200 m^2. During the experiment parameters of operation and performances of hand harvesting and harvesting of two types of harvesters were followed (harvester A – tractor mounted harvester, harvester B – semi-mounted harvester).

Harvester A was tractor mounted harvester "NB 2004", powered by tractor "IMT 560". Harvester working width was 2 m. This harvester had no container for the harvested chamomile, but operates with a tractor trailer. The tractor trailer was used for collecting of the harvested chamomile and it was replaced by another after filling up. This production system required at least two tractors, a mounted harvester and two tractor trailers in order to perform the entire process of harvesting without a significant delay.

Harvester B was a semi-mounted harvester "VB 2002", powered by tractor "MTZ 82.1". It had a container for the harvested chamomile (2.2 m^3). Working width of this harvester was 2 m. This harvester, from the perspective of tractor machinery, required: two tractors, semi-mounted harvester and one tractor trailer in order not to cause a significant delay in chamomile harvesting.

Analysis started from the assumption that chamomile is produced to be sold as dried flowers. Apart from this type of production, chamomile can be produced in order to obtain ether oil. There is also a combined type of production, in which a part of the product is used as dried flowers, while the rest is used for producing ether oil (Falzari, Menary, 2003). The

analysis of production of dried flowers has been chosen based on the fact that this type of production has the best economic effects (Pajić, 2012).

Quality of the harvested chamomile is defined by 4 quality categories, according to the standards recommended by the Institute for standardization of Serbia (2012). In order to determine profit in chamomile production, the appropriate analytical calculations (enterprise budgeting) were used, as well as calculations of costs of agricultural machinery according to the methodology suggested by Gogić (2009). Apart from that, for analysis were used data on the price of operation of agricultural machinery published by the Cooperative union of Vojvodina (2011).

The method of present value of investment was also used, which enabled calculation of the highest amount that can be invested in purchasing chamomile harvester. This method was used to evaluate whether investment in purchasing different harvesters is economically justified.

Results and discussion

The basis for further analyses was calculation of costs of chamomile production (Table 1). These costs are always the same, regardless of how the chamomile is harvested (by hand or with mechanization), and for what purpose it is used later (for obtaining dried flowers or production of ether oil). This calculation comprises only of costs, without revenues, as the revenues depend on a larger number of factors such as the use of chamomile, structure of yield according to quality classes etc.

Table 1. Costs of chamomile production (1 ha)

Type of cost	Unit	Quantity	Price per unit (EUR)	Amount (EUR)
I Seed	kg	2.00	50.00	100.00
II Irrigation	ha	1.00	120.00	120.00
III Machinery costs (1 - 5)				170.00
1. Ploughing of stubble field	ha	1.00	40.00	40.00
2. Deep ploughing	ha	1.00	80.00	80.00
3. Seedbed preparation	ha	1.00	20.00	20.00
4. Sowing	ha	1.00	20.00	20.00
5. Rolling	ha	1.00	10.00	10.00
IV Total costs of production (I + II + III)				**390.00**

Source: According to authors' calculation.

This calculation also lacks the costs for mineral fertilizers and plant protection means, which is in accordance with the intended use of chamomile as medicinal plant or in cosmetic industry. Accordingly, this calculation is focused on organic and integrated production of chamomile, in accordance with the export requirements of the EU countries. It should also be underlined that in this calculation labour costs were not separately listed, but that they are included into the agricultural machinery costs.

The value of chamomile production was determined for three different cases – when chamomile is hand harvested, or when harvesters A and B are used for harvesting (Table 2). In all three cases different technological yield was obtained, as well as different percentage of specific chamomile classes in the total yield. In all three cases prices of chamomile were determined under the assumption that after harvesting it would be used as dried flowers.

Table 2. Value of chamomile production for different harvesting methods

Indicators		Harvester A	Harvester B	Hand harvesting
Technological yield, dried, 12% humidity (kg/ha)		**893.00**	**881.00**	**932.00**
Class 1	Participation (%)	45.84	39.81	64.30
	Quantity (kg)	409.35	350.73	599.28
	Price (EUR/kg)	4.00	4.00	4.00
	Value of production(EUR/ha)	**1,637.40**	**1,402.90**	**2.397.10**
Class 2	Participation (%)	24.10	24.89	20.72
	Quantity (kg)	215.21	219.28	193.11
	Price (EUR/kg)	2.50	2.50	2.50
	Value of production (EUR/ha)	**538.03**	**548.20**	**482.78**
Class 3	Participation (%)	26.55	31.12	11.10
	Quantity (kg)	237.09	274.17	103.45
	Price (EUR/kg)	1.50	1.50	1.50
	Value of production (EUR/ha)	**355.64**	**411.25**	**155.18**
Class 4	Participation (%)	3.51	4.18	3.88
	Quantity (kg)	31.34	36.83	36.16
	Price (EUR/kg)	0.50	0.50	0.50
	Value of production (EUR/ha)	**15.67**	**18.41**	**18.08**
Total value of production (EUR/ha)		**2,546.75**	**2,380.77**	**3,053.14**

Source: According to authors' calculation.

In order to calculate the profit of chamomile production, all the costs occurring must be taken into account, not just those arising from its production, but also those arising in the course of harvesting, transport, drying, processing and packing. These phases cannot be separated from the production process because chamomile is sold as dried flowers, i.e. its market value is defined only when the processes of drying, processing and packing are finished.

In practice, chamomile is mainly hand harvested on small holdings, while on the large land areas the appropriate harvesters are used. There are two important reasons for switching from hand harvesting to mechanized chamomile harvesting. The first reason is the problem of providing and organizing sufficient number of workers in order to enable chamomile harvesting in optimal agro technical period of 7 to 12 days. The other reason is relatively low investment into harvesters (6,000 – 7,000 EUR), so that they can be purchased by means of bank loan or combination of equity and bank loan. One should bear in mind here all the limitations related to the loans for agricultural producers (Jolović et al., 2014).

In order to determine the profit in chamomile production, the calculations were formulated for hand harvesting (Table 3.), harvester A (Table 4.), and harvester B (Table 5). The calculations took into account different land areas for chamomile harvesting.

Table 3. Profit in chamomile production when hand harvested (EUR/ha)

Indicators	1 ha	5 ha	10 ha
I Value of production (revenue)	3,053.14	15,265.69	30,531.39
II Costs (1 to 6)	2,154.00	10,770.00	21,540.00
1. Production costs	390.00	1,950.00	3,900.00
2. Machinery costs (during harvesting)	0.00	0.00	0.00
3. Labour costs (during harvesting)	1,134.00	5,670.00	11,340.00
4. Transportation costs	10.00	50.00	100.00
5. Costs of drying	450.00	2,250.00	4,500.00
6. Costs of processing and packing	170.00	850.00	1,700.00
Profit (I - II)	**899.14**	**4,495.69**	**8,991.39**

Source: According to authors' calculation.

Table 4. Profit in chamomile production when harvester A is used (EUR/ha)

Indicators	1 ha	5 ha	10 ha
I Value of production (revenue)	2,546.75	12,733.73	25,467.47
II Costs (1 to 6)	2,371.28	6,926.42	12,620.33
1. Production costs	390.00	1,950.00	3,900.00
2. Machinery costs (during harvesting)	1,325.23	1,696.15	2,159.81
3. Labour costs (during harvesting)	21.05	105.26	210.53
4. Transportation costs	15.00	75.00	150.00
5. Costs of drying	450.00	2,250.00	4,500.00
6. Costs of processing and packing	170.00	850.00	1,700.00
Profit (I - II)	**175.46**	**5,807.32**	**12,847.14**

Source: According to authors' calculation.

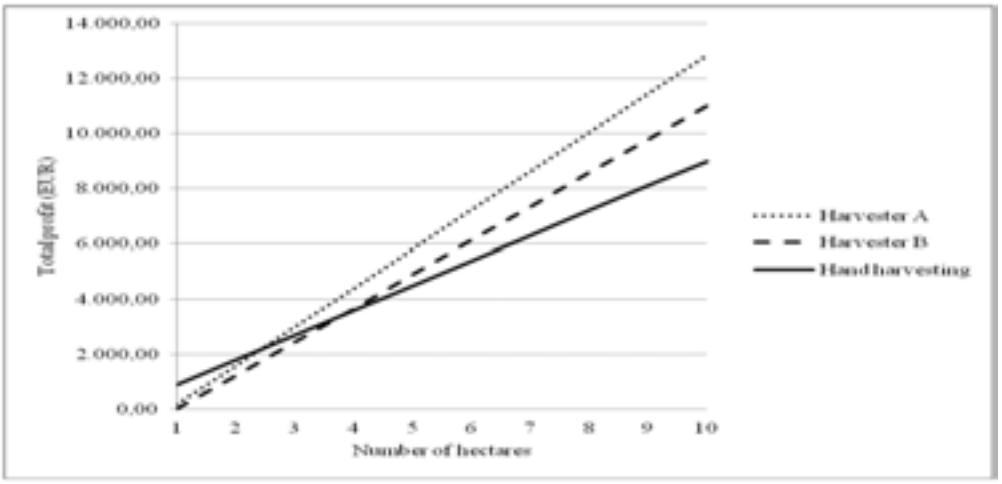
Table 5. Profit in chamomile production when harvester B is used (EUR/ha)

Indicators	1 ha	5 ha	10 ha
I Value of production (revenue)	2,380.77	11,903.85	23,807.70
II Costs (1 to 6)	2,375.57	7,009.86	12,802.73
1. Production costs	390.00	1,950.00	3,900.00
2. Machinery costs (during harvesting)	1,345.05	1,857.23	2,497.46
3. Labour costs (during harvesting)	10.53	52.63	105.26
4. Transportation costs	10.00	50.00	100.00
5. Costs of drying	450.00	2,250.00	4,500.00
6. Costs of processing and packing	170.00	850.00	1,700.00
Profit (I - II)	**5.20**	**4,893.99**	**11,004.98**

Source: According to authors' calculation.

The obtained results show that in all the observed cases there is profit in chamomile production. Comparing hand and mechanized harvesting, it is noticeable that profit is higher on small production areas in case of hand harvesting in comparison to mechanized harvesting. Higher profit in case of hand harvesting occurs for two reasons. The first reason is much higher percentage of the first class chamomile from hand harvesting than from mechanized harvesting. The other reasons are high fixed costs of the harvesters used for chamomile harvesting, which significantly increase the costs of chamomile production on small production areas. However, the total profit achieved is increased in this production with the increase of the area under chamomile, and higher profit is achieved by mechanized harvesting as average fixed costs are decreased (Graph 1).

Graph 1. Distribution of profit in chamomile production on different land areas

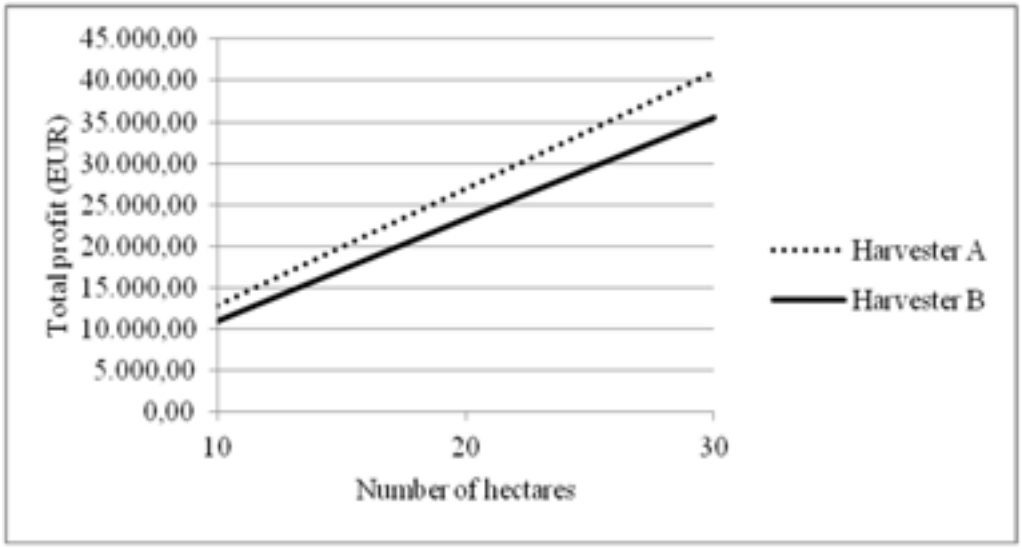


Source: According to authors' calculation.

Hand harvesting of chamomile is the most convenient on up to 2.5 ha land area because it provides the highest total profit. However, after that land area the first choice in economic terms is harvester A. As far as the harvester B is concerned, it gives worse economic results than harvester A. Nevertheless, if a farm would choose to buy harvester B, this harvester as the replacement for hand harvesting would have been profitable only if four or more hectares of chamomile were grown.

Apart from that, another problem is whether it is more profitable for a farm to buy harvester A or harvester B for harvesting chamomile on larger plots. Graph 2 shows that purchasing of harvester A is more profitable for farms because it provides higher total profit on all analysed production areas. Moreover, with the increase of the land area under chamomile, the advantages of harvester A rise compared to the harvester B as far as the total profit is concerned.

Graph 2. Comparing total profit for harvesters A and B for different land areas



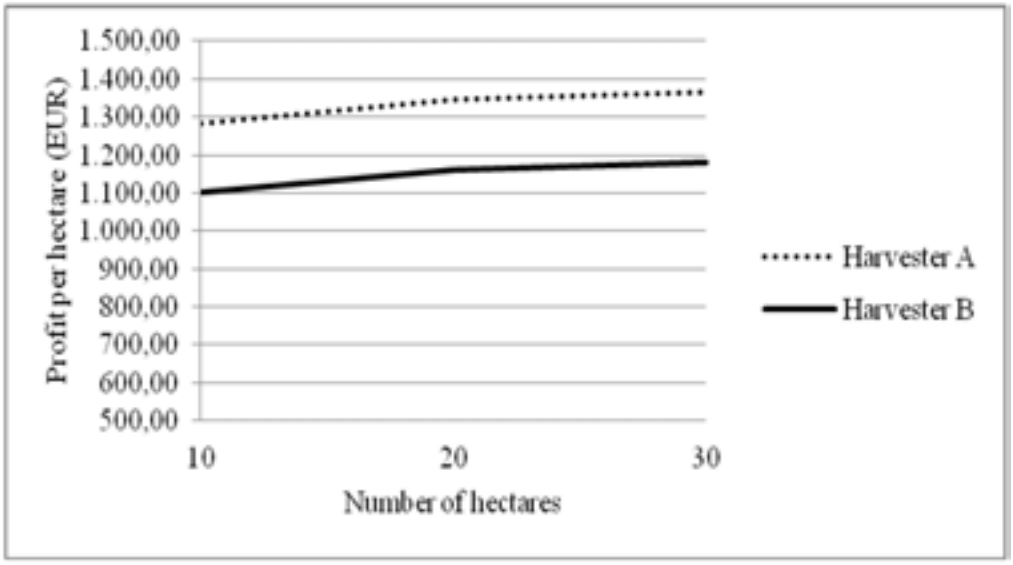
Source: According to authors' calculation.

Likewise, if profit per hectare is observed (Graph 3), it is possible to see that profit is higher when harvester A is used. The profit per hectare of chamomile rises with the number of hectares, but the increase is reduced gradually.

Although effects per working hour of harvester A and B are technically identical (harvesting of 1 ha of chamomile takes them 5.60 working hours), there are several reasons for which harvester A is economically more acceptable:

- The first reason is that harvester B has higher price in the market, and thus higher fixed costs (depreciation costs, interest etc.). Harvester B is more expensive because it has its own container for the harvested chamomile and the appropriate hydraulic system for that container.
- The second reason is that harvester B requires tractor of higher power, and thereby has higher variable costs.
- Apart from that, harvester A gives somewhat higher content of the first class harvested chamomile flowers than harvester B.
- On the other hand, harvester A demands somewhat more labour consumption during harvesting, as well as an additional trailer, but these costs still have no significant influence on the profit of chamomile production.

Graph 3. Comparing profit for harvesters A and B for different land areas



Source: According to authors' calculation.

If chamomile producers chose to purchase harvester for chamomile harvesting on small lad areas (in order to avoid possible organizational issues of labour force), the question is how much they could pay for these harvester at most. That is, what is the present value of the analysed harvesters if they are used on different land areas under chamomile. Table 6 shows present value of harvester A for land areas under chamomile on which it is most acceptable to use hand harvesting (for 1 ha and 2 ha). Table 7 shows present value of harvester B if it is used on land areas on which it is more economically justified to use hand harvesting (land areas from 1 to 3 hectares). The calculation started from the assumption that all cash inflows and outflows arise at the end of the year, that discount rate is 8%, and that maximum period of harvesters' utilization is 10 years. Salvage value of the observed harvesters is neglected.

Table 6. Present value of harvester A on different land areas on which it is used

Indicators	1 ha	2 ha
Average annual cash inflow (EUR)	2,546.75	5,093.49
Average annual cash outflow (EUR)	1,435.28	2,574.07
Net cash flow (EUR)	1,111.46	2,519.43
Discount rate (10 years, 8%)	6.7101	6.7101
Present value (EUR)	**7,458.03**	**16,905.61**
Investment in harvester (EUR)	**6,500.00**	**6,500.00**

Source: According to authors' calculation.

Table 7. Present value of harvester B on different land areas on which it is used

Indicators	1 ha	2 ha	3 ha
Average annual cash inflow (EUR)	2,380.77	4,761.54	7,142.31
Average annual cash outflow (EUR)	1,367.57	2,526.15	3,684.72
Net cash flow (EUR)	1,013.20	2,235.40	3,457.59
Discount rate (10 years, 8%)	6.7101	6.7101	6.7101
Present value (EUR)	**6,798.66**	**14,999.73**	**23,200.80**
Investment in harvester (EUR)	**7,000.00**	**7,000.00**	**7,000.00**

Source: According to authors' calculation.

It is possible to see that purchasing harvester A under the given conditions would be economically justified event if it was bought only for 1 ha under chamomile as its present value would be higher than the investment of purchasing it. Although purchasing harvester A would have been economically justified even for this small land area, hand harvesting would have provided higher total profit.

On the other hand, investment in purchasing harvester B would not have been economically justified if it was used only on 1 ha area under chamomile because its market value is 7,000 EUR, while it is possible to invest in purchasing it 6,798.66 EUR at most. If harvester B was used on 2 or 3 ha area, investment in purchasing it would have been economically justified. However, one should bear in mind that hand harvesting on these plots provides higher total profit.

Conclusion

Determination of profit in chamomile production is a complex process which should take into accounts not only costs of chamomile production, but also the costs of harvesting, transport, drying, packing etc. Moreover, the profit largely depends on harvesting method, since hand harvesting and mechanized harvesting generate different costs, but also different revenues.

The analysis showed that it is economically justified to switch from hand harvesting to mechanized harvesting on land areas bigger than 2.5 ha (in case of harvester A), or 4 ha (in case of harvester B). Analysis of the present value showed that investment in purchasing harvester A is economically justified even on land area of 1 ha, which is not the case with the investment in harvester B. The economic advantage of the harvester A relative to the harvester B increases even more with the size of the land area on which the harvesters are used.

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EKONOMSKA EFEKTIVNOST MEHANIZOVNOG UBIRANJA KAMILICE

Sanjin Ivanović[5], Miloš Pajić[6], Todor Marković[7]

Rezime

Kamilica kao lekovita i aromatična vrsta je od velikog značaja, jer predstavlja značajan artikal na svetskom tržištu lekovitog bilja. Bez obzira na to, do sada postoji samo mali broj istraživanja koja se odnose na ekonomske efekte njene proizvodnje. Posebnu pažnju kod gajenja kamilice treba obratiti na troškove ubiranja, koji po pravilu imaju najveće učešće u strukturi ukupnih troškova.

Cilj ovog rada je da utvrdi kada je ekonomski opravdano preći sa ručnog na mašinsko ubiranje kamilice i koliko se najviše može investirati u nabavku različitih kombajna za berbu kamilice. Da bi se to proverilo, korišćene su analitičke kalkulacije proizvodnje kamilice, kalkulacije rada poljoprivrednih mašina, kao i dinamičke metode za ocenu investicija (metod prinosne vrednosti).

Utvrđeno je da je ekonomski opravdano preći sa ručnog na mehanizovano ubiranje kamilice na površinama koje prelaze 2,5 odnosno 4 ha kamilice, zavisno od tipa kombajna. Ako se kombajni koriste na površinama manjim od prethodno navedenih, ekonomska efektivnost investicija u njihovu nabavku, odnosno visina njihove prinosne vrednosti, zavisi od tipa kombajna i površine na kojoj se gaji kamilica.

***Ključne reči**: kamilica, troškovi ubiranja, ručno ubiranje, kombajn, prinosna vrednost.*

5 Dr. Sanjin Ivanović, vanredni profesor, Univerzitet u Beogradu, Poljoprivredni fakultet, Odsek za agroekonomiju, Nemanjina 6, 11080 Zemun, Beograd, Republika Srbija, Telefon: +381 11 26 15 315/lok.: 426, E-mail: sanjinivanovic@agrif.bg.ac.rs

6 Dr. Miloš Pajić, docent, Univerzitet u Beogradu, Poljoprivredni fakultet, Institut za poljoprivrednu tehniku, Nemanjina 6, 11080 Zemun, Beograd, Republika Srbija, Telefon: +381 11 26 15 315/lok.: 442, E-mail: paja@agrif.bg.ac.rs

7 Dr. Todor Marković, docent, Univerzitet u Novom Sadu, Poljoprivredni fakultet, Departman za ekonomiku poljoprivrede i sociologiju sela, Trg Dositeja Obradovića 8, 21000 Novi Sad, Republika Srbija, Telefon: +381 21 48 53 419, E-mail: todor@polj.uns.ac.rs

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OVERVIEW OF CONTEMPORARY ISSUES OF SUSTAINABLE RURAL DEVELOPMENT IN RUSSIA IN TERMS OF EXISTING DIFFERENCES BETWEEN REGIONS

Anna Ivolga[1]

Summary

Paper includes analysis of current state in the sphere of sustainable rural development in the regions of Russia. Analysis included the set of indicators such as number of rural people, number of rural settlements, rates of births and mortalities, natural and migration increases and declines of population, rates of employment and unemployment, average monthly nominal per capita wages, and level of the subsistence minimum. Indicators have been measured separately for rural and urban areas; regions have been grouped in relation to the particular indicator. As a result, 82 regions have been grouped into aggregations according to their common characteristics and values of studied indicators. Such classification let to compare derived levels of rural development in particular regions, to analyze gaps between rural and urban areas, to discover common threats to sustainable development, and to elaborate local-oriented rural policies.

Key words: *sustainable rural development, rural areas, income level, employment, diversification.*

JEL: *Q18, P25*

Introduction

Sustainable rural development is one of the most important directions of contemporary social and economic policy of the country. That is especially relevant for such countries as Russia, where agriculture amounts to essential part of national economy and over one fourth of population live in rural areas. Effectiveness of rural policies directly affects living standards of those people, social and demographic situation in rural areas, national food security, social and economic control over rural territories, and development of traditional cultures and rural way of life.

Over 1990-2000s there were certain reforms implemented in agricultural production and land relations in Russia, including in the sphere of rural development. Those reforms let

1 Ph.D., Department of Tourism and Service, Stavropol State Agrarian University, 12 Zootekhnichesky Side-Street, 355017 Stavropol, Russia, Phone: +786 523 559 80, E-mail: annya_iv@mail.ru

to stabilize situation in rural areas during transition period. However, current conditions of economic development require new approaches to rural areas in order to ensure their economic, social and environmental sustainability. Rural areas lag behind urban ones in terms of living standards and quality of life. Gaps in infrastructural development between rural and urban (even suburban) areas are continuing to grow. Number of rural settlements goes down because of huge migration outflow from rural areas to cities. Migration brings together related negatives: ageing of population, lack of labour of high qualification, degradation of population, growing social tensions, abandonment of rural settlements and agricultural lands, lowering effectiveness of agricultural production, and growing environmental load because of outdated machineries and low culture of farming.

The research of contemporary issues of sustainable rural development was conducted on the case of Russia. Taking into account the essential differences between various regions of the country in terms of provision with natural, social and labour resources, development of rural infrastructure, and environmental conditions of agricultural production, such differentiated approach let us both to discover common threats to sustainable development and to investigate their specifics in every region of the country.

The set of indicators included into the analysis involved number of people, number of rural settlements, rates of births and mortalities, natural and migration increases and declines of population, rates of employment and unemployment, average monthly nominal per capita wages, and level of the subsistence minimum. The above-mentioned indicators have been measured separately for rural and urban areas. Further comparison of derived levels allowed analyzing the gaps between rural and urban areas.

Classification of Russia's regions on the level of rural development had been implemented, which let us to group regions into four major aggregates, to discover common features and threats to sustainable development, and to elaborate differentiated approaches to local rural policies.

Material and Methods

Data for the purposes of the current research had been obtained from the reports of the State Council of the Russian Federation (Report on Sustainable Development of Rural Territories of the Russian Federation), Federal Service of State Statistics of the Russian Federation, Ministry of Agriculture of the Russian Federation, and the Ministry of Economic Development of the Russian Federation.

Studying different issues, related to sustainable rural development, we have addressed works by L. Bondarenko and E. Lavrukhina in the sphere of employment in rural areas and diversification of rural economics (Bondarenko, 2011; Lavrukhina, 2013), M. Lescheva in the sphere of integration of agricultural producers (Lescheva, 2007; Lescheva, 2008; Trukhachev, Lescheva, 2010) and V. Erokhin in the sphere of international influences on regional rural entrepreneurship and cluster development of regional production integration (Erokhin, 2007a; Erokhin, 2011; Erokhin, Ivolga, 2012; Erokhin, 2009).

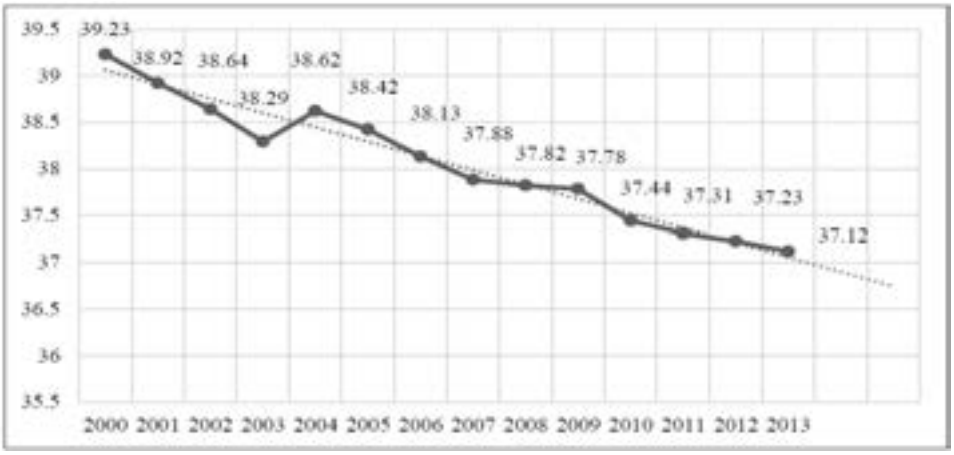
The special attention was paid to theoretic researches and practical developments in the sphere of sustainability of rural areas, performed by A. Merzlov (Merzlov, 2012; Merzlov et al., 2012). His approaches had been used for classification of rural areas on the level of their rural development.

Contemporary Russian approaches to rural policies and practices of rural development had been compared with the international experiences (Erokhin, Ivolga, Andrei et al., 2014) and internationally-recognized researches in the sphere in the sphere of regional economics (Heijman, Schipper, 2010).

Results and Discussion

The tendency of the last decade is shortage of rural population in Russia. Since 2000, it had been decreased on 5.4% (from 39.23 mln people down to 37.12 mln people), (Figure 1). The linear trend shows further population decline in 2014-2015 (down to 36.5 mln people by 2015).

Figure 1. Rural population in Russia in 2000-2013, mln people.

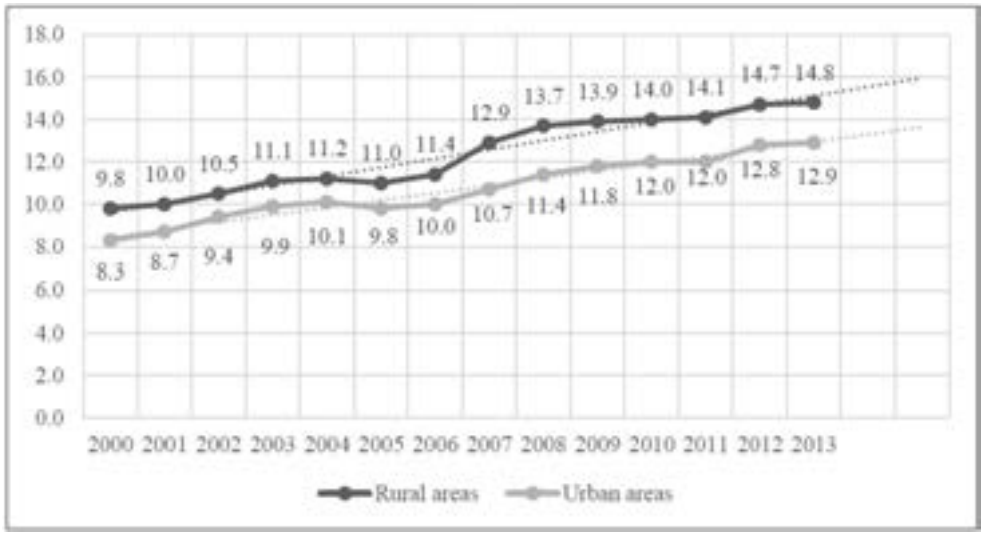


Source: Author's development based on (State Council of the Russian Federation, 2014)

In terms of the regions of Russia, the most essential rural population decline was observed in North-West and Siberian federal districts (NWFD and SibFD correspondingly). Share of NWFD in overall rural population of Russia decreased from 6.5% in 2000 down to 6.0% in 2013, share of SibFD decreased from 15.1% down to 14.3% correspondingly. However, the downturn trend was not true for every region of the country, since the share of North-Caucasus Federal District (NCFD) in total number of rural inhabitants in Russia grew from 11.1% up to 13.2%. The most part of rural population is concentrated in Privolzhsky Federal District (PFD) – 23.0%, while the least populous region is Far East Federal District (FEFD) with only 4.1% of Russia's rural population in 2013 (State Council of the Russian Federation, 2014).

Migration outflow is the major reason of depopulation of rural territories in Russia. Despite the certain natural increase (Figure 2), social and economic components dominate over the natural one.

Figure 2. Crude birth rate indexes for rural and urban areas of Russia in 2000-2013, permille.



Source: Author's development based on (State Council of the Russian Federation, 2014)

However, despite the growing crude birth rates both for rural and urban areas of Russia, number of regions with natural rural population increase is only 34, which is about 41%. The rest 59% of Russia's regions (48 regions in total) experience natural decline in the rural population (Table 1). The most severe decline is observed in Pskovskaya Oblast, where mortality exceeds birth rate twofold.

Table 1. Grouping of Russia's regions on natural increase (decline) in the rural population in 2013.

Groups on natural population increase / decline	No. of regions	Regions
Natural increase	34	*Republics:* Adygeya, Altay, Buryatia, Dagestan, Ingushetia, Kabardino-Balkariya, Kalmykia, Karachaevo-Cherkessia, Komi, Yakutia, North Osetia-Alania, Tyva, Udmurtia, Khakassia, Chechnya *Krais:* Zabaykalsky, Krasnoyarsky, Permsky, Stavropolsky, Khabarovsky *Oblasts:* Astrakhanskaya, Irkutskaya, Kaliningradskaya, Murmanskaya, Omskaya *Autonomous oblasts and districts:* Evreyskaya, Nenetsky, Khanty-Mansiysky, Chukotsky, Yamalo-Nenetsky
Natural decline	48	
Including mortality/birth rate:		

below 120%	15	*Republics:* Bashkortostan, Mary El, Chuvashia *Krais:* Altaysky, Krasnodarsky, Primorsky *Oblasts:* Amurskaya, Volgogradskaya, Kemerovskaya, Novosibirskaya, Rostovskaya, Samarskaya, Saratovskaya, Sverdlovskaya, Moscow City
120-150%	16	*Republics:* Karelia, Tatarstan *Krais:* Kamchatsky *Oblasts:* Arkhangelskaya, Bryanskaya, Vologodskaya, Kaluzhskaya, Kirovskaya, Kostromskaya, Kurgansksya, Magadanskaya, Moskovskaya, Orlovskaya, Sakhalinskaya, Tulskaya, Yaroslavskaya
150-200%	16	*Republics:* Mordovia *Oblasts:* Belgorodskaya, Vladimirskaya, Voronezhskaya, Ivanovskaya, Kurskaya, Leningradskaya, Lipetskaya, Nizhegorodskaya, Novgorodskaya, Penzenskaya, Ryazanskaya, Smolenskaya, Tambovskaya, Tverskaya, Ulyanovskaya
over 200%	1	*Oblasts:* Pskovskaya

Source: State Council of the Russian Federation, 2014

Rural settlement systems are becoming more and more dispersed. Number of abandoned rural settlements is growing, together with the share of rural people living in bigger rural settlements of a suburban type, with access to the more developed economic and social infrastructures (Table 2).

Table 2. Number of rural settlements in Russia in 2002-2010.

Year	Total	grouping on number of inhabitants				
		abandoned	less 10 people	11-50 people	51-100 people	over 100 people
Number of rural settlements, thousand						
2002	155.3	13.1	34.0	38.1	14.9	55.2
2010	153.1	19.4	36.2	32.8	13.8	50.9
As percentage of total, %						
2002	100.0	8.4	21.9	24.5	9.6	35.6
2010	100.0	12.7	23.6	21.4	9.0	33.3

Source: Merzlov et al., 2012

As of Merzlov et al., 2012, number of rural settlement decreased on 2.2 thousand during 2002-2010. The share of abandoned settlements reached 12.7% (19.4 thousand) of the total number of rural settlements of the country, while the share of settlements with over 100 inhabitants went down to one-third (50.9 thousand). If abandoned/big ratio in 2002 was 1:4.2, in 2010 it turned to 1:2.6.

In 2013 migration outflow from rural areas has increased on 170% in comparison to 2000, and has amounted to 1.46 mln people, including 616.2 thousand (42.2%) people aged 15-29 (State Council of the Russian Federation, 2014). Number of regions of Russia with net migration gain was 18 as of 2013 (Table 3). The highest migration gain coefficient was observed in four oblasts: Kurskaya, Leningradskaya, Moskovskaya, and Yaroslavskaya, while 41 regions of the Russian Federation resulted with the highest migration decline coefficient (above 70).

Table 3. Grouping of Russia's regions on migration gain/decline coefficient in 2013, per ten thousand inhabitants

Groups on migration gain/decline coefficient	No. of regions	Regions
Regions with net migration gain	18	
including with net migration gain coefficient:		
below 20	6	*Oblasts:* Kaliningradskaya, Nizhegorodskaya, Ryazanskaya, Samarskaya, Smolenskaya, Tulskaya
21-70	8	*Republics:* Adygeya *Krais:* Krasnodarsky *Oblasts:* Belgorodskaya, Kaluzhskaya, Lipetskaya, Novgorodskaya, Pskovskaya, Moscow
over 70	4	*Oblasts:* Kurskaya, Leningradskaya, Moskovskaya, Yaroslavskaya
Regions with migration decrease	64	
including with migration decline coefficient:		
below 20	3	*Republics:* Tatarstan *Oblasts:* Vladimirskaya, Tverskaya
21-70	20	*Republics:* Altay, Bashkortostan, Ingushetia, Kabardino-Balkariya, Karachaevo-Cherkessia, Chechnya *Krais:* Stavropolsky *Oblasts:* Astrakhanskaya, Vologodskaya, Voronezhskaya, Ivanovskaya, Irkutskaya, Novosibirskaya, Orlovskaya, Penzenskaya, Rostovskaya, Sverdlovskaya, Tambovskaya, Tumenskaya, Ulyanovskaya
over 70	41	*Republics:* Buryatia, Dagestan, Kalmykia, Karelia, Komi, Mary El, Mordovia, Yakutia, North Osetia-Alania, Tyva, Udmurtia, Khakassia, Chuvashia *Krais:* Altaysky, Zabaykalsky, Kamchatsky, Krasnoyarsky, Permsky, Primorsky, Khabarovsky *Oblasts:* Amurskaya, Arkhangelskaya, Bryanskaya, Volgogradskaya, Kemerovskaya, Kirovskaya, Kostromskaya, Magadanskaya, Murmanskaya, Omskaya, Orenburgskaya, Saratovskaya, Sakhalinskaya, Tomskaya, Chelyabinskaya *Autonomous oblasts and districts:* Evreyskaya, Nenetsky, Khanty-Mansiysky, Chukotsky, Yamalo-Nenetsky

Source: State Council of the Russian Federation, 2014

Depopulation of rural areas is partly caused by unemployment. Two regions of Russia, Republic of Ingushetia and Republic of Tyva, have the most severe unemployment in rural areas, which is above 50%. In the majority of the regions, levels of employment are higher, but still very much below than in urban areas and non-agricultural industries. Employment in agri-industrial sector had been decreasing over the referred period of 2000-2013, while employment in non-agricultural industries had been increasing. As of 2013, number of people employed in agriculture-related industries decreased on 6% (244 thousand people) in comparison to 2012 (State Council of the Russian Federation, 2014).

Share of agriculture-related industries in rural employment is very much affected by natural and environmental factors. As environmental conditions for agricultural production get worsened, the share of agriculture in rural employment decreases (Table 4).

Table 4. Share of rural population employed in agriculture in total rural population in federal districts of Russia in 2009-2013, %.

Federal district	2009	2010	2011	2012	2013
Russia, average	24.2	23.4	22.9	22.3	20.9
Central Federal District	22.7	21.1	20.2	20.3	18.7
North-West Federal District	12.6	10.5	10.4	9.4	10.1
South Federal District	28.0	28.3	25.7	26.1	22.6
North-Caucasus Federal District	30.4	31.4	29.1	28.4	29.3
Privolzhsky Federal District	27.9	25.8	26.7	25.2	24.1
Ural Federal District	16.4	17.1	17.2	16.5	16.2
Siberian Federal District	23.7	23.7	24.0	23.0	20.7
Far East Federal District	12.6	12.3	11.6	11.5	8.9

Source: State Council of the Russian Federation, 2014

As of the employment in rural areas in general, regardless of agricultural or non-agricultural jobs, the situation is getting better. There are still three regions in Russia with severe unemployment among rural population: Republic of Ingushetia (46.3% of rural people are unemployed), Republic of Tyva (29.7%), and Republic of Chechnya (26.1%). The major part of Russia's region are able to secure unemployment rate in rural areas below 10% (61 regions out of 82 in 2013), while some of the regions have higher rates of unemployment (Table 5).

Unemployment adversely affects level of income in rural areas. In the regions of Group 3 (with level of unemployment in rural areas over 20%), the relation of per capita disposable income of rural households to the level of the subsistence minimum is even negative (77.3% in the Republic of Ingushetia in 2012), while in the regions form Group 1 it is much higher (up to 321.5% in the Republic of Bashkortostan) (State Council of the Russian Federation, 2014). Chukotsky Autonomous District also has a negative income-subsistence ratio, while other regions keep that indicator in a positive field.

Table 5. Grouping of Russia's regions on unemployment rural areas in 2013.

Level of unemployment in rural areas, %	No. of regions	Regions
Below 10	61	*Republics:* Adygeya, Bashkortostan, Buryatia, Kabardino-Balkariya, Kalmykia, Mary El, Mordovia, Tatarstan, Udmurtia, Khakassia, Chuvashia *Krais:* Kamchatsky, Krasnodarsky, Krasnoyarsky, Permsky, Stavropolsky *Oblasts:* Arkhangelskaya, Astrakhanskaya, Belgorodskaya, Bryanskaya, Vladimirskaya, Volgogradskaya, Vologodskaya, Voronezhskaya, Ivanovskaya, Kaliningradskaya, Kaluzhskaya, Kemerovskaya, Kirovskaya, Kostromskaya, Kurganskaya, Kurskaya, Leningradskaya, Lipetskaya, Magadanskaya, Moskovskaya, Murmanskaya, Nizhegorodskaya, Novgorodskaya, Novosibirskaya, Omskaya, Orenburgskaya, Orlovskaya, Penzenskaya, Rostovskaya, Ryazanskaya, Samarskaya, Saratovskaya, Sakhalinskaya, Smolenskaya, Sverdlovskaya, Tambovskaya, Tverskaya, Tulskaya, Tumenskaya, Ulyanovskaya, Chelyabinskaya, Yaroslavskaya *Autonomous oblasts and districts:* Nenetsky, Khanty-Mansiysky, Chukotsky, Yamalo-Nenetsky
10-20	17	*Republics:* Altay, Dagestan, Kalmykia, Karachaevo-Cherkessia, Karelia, Komi, Yakutia, North Osetia-Alania *Krais:* Altaysky, Primorsky, Khabarovsky Zabaykalsky *Oblasts:* Amurskaya, Irkutskaya, Pskovskaya, Tomskaya *Autonomous oblasts and districts:* Evreyskaya
Over 20	3	*Republics:* Ingushetia, Tyva, Chechnya

Source: State Council of the Russian Federation, 2014

Despite the positive income-subsistence ratio in the most of the rural areas, growth rates of nominal wage in agriculture fell. Average monthly nominal wage in rural areas in 2013 grew on 12.0% in comparison to 2012 (in 2012 growth rate was 13.4%), and reached €370. Taking into account inflation and faster growing nominal wage in non-agricultural industries, the actual relation of wages in agriculture to the average national level decreased down to 52.19% (Table 6).

Table 6. Average monthly nominal per capita wage in rural areas of Russia*.

Indicator	2000	2012	2013	Variation: 2013 to 2000, %, (+,-), p.p.	Variation: 2013 to 2012, %, (+,-), p.p.
Average national, Euro**	83.35	657.66	706.77	845.92	107.47
Average in agriculture, Euro**	36.93	348.95	368.88	998.86	105.71
relation to national average, %	44.31	53.06	52.19	7.88	-0.87
absolute variation, Euro	46.42	308.71	337.89	291.47	29.18

* Presented financial numbers are real, inflation is considered (Rosstat, 2014).

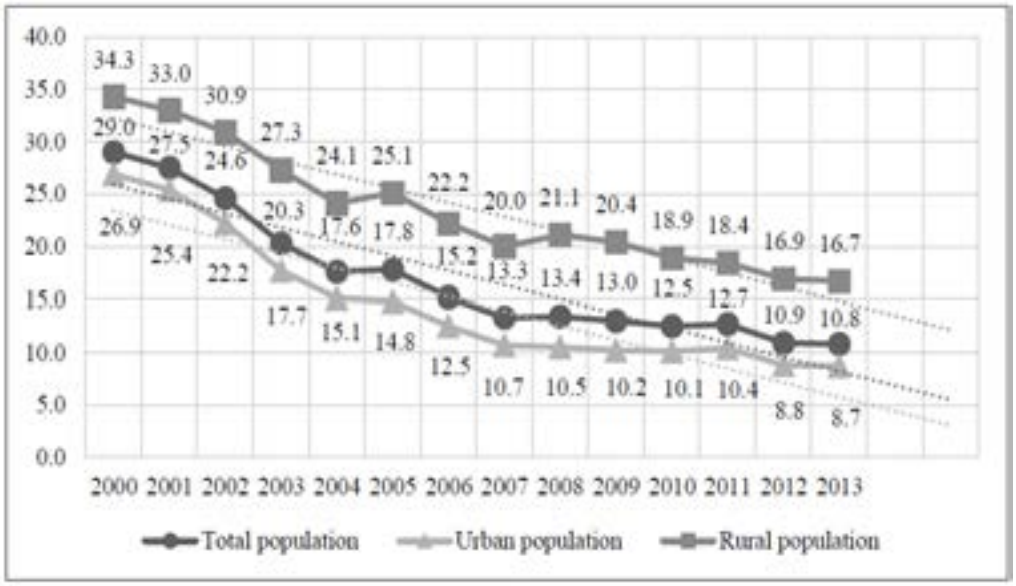
** Author's recalculation into Euro based on (Central Bank of the Russian Federation, 2014).

Source: Author's development based on (State Council of the Russian Federation, 2014; Rosstat, 2014; Central Bank of the Russian Federation, 2014).

As to the income-subsistence ratio itself, it increased over the referred period. In the majority of regions the per capita disposable income of rural households excesses the level of the subsistence minimum at least twofold. Leaders are Moscow Oblast (threefold), Belgorod Oblast (3.4 times), and Leningradskaya Oblast (3.8 times). Outsiders are Republic of Dagestan, Republic of Chechnya, and Republic of Tyva.

Total number of people living below the poverty line was 15.6 mln in 2012; share of those people in total population was 10.9% (State Council of the Russian Federation, 2014). Over 2000-2012 number of people with income below the minimum subsistence level decreased almost threefold. Rural people amount to 40.4% of all Russia's population living below the poverty line (Figure 3).

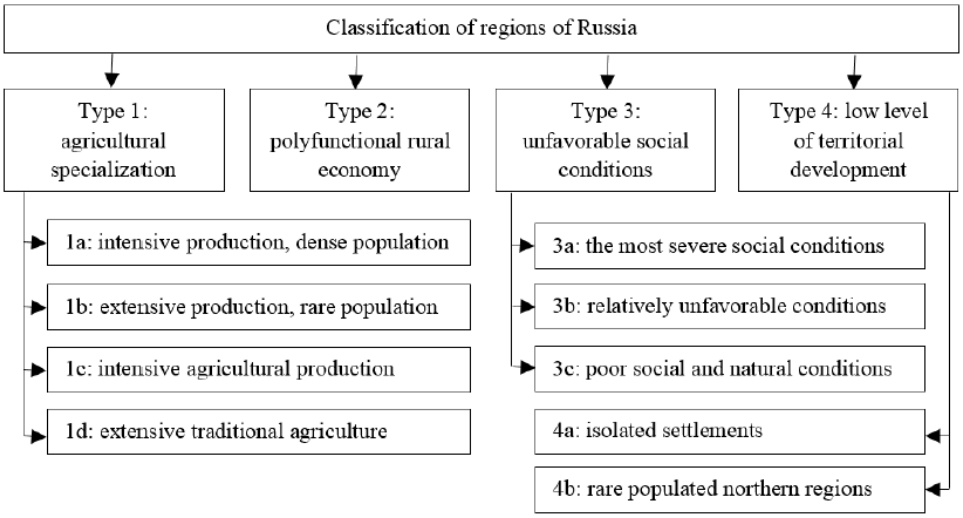
Figure 3. Share of population living below the poverty line in Russia in 2000-2013, %.



Source: Author's development based on (State Council of the Russian Federation, 2014)

Considering the existing essential differences between regions of Russia in the sphere of rural development, social and demographic potential, development of infrastructure, employment, income levels, and natural conditions, it is worthwhile to group the regions by types. As of Merzlov and other researches (Merzlov, Ovchintseva and Popova, 2012; Merzlov et al, 2012), there are four types and nine subtypes of the regions depending on the character of rural development, utilization of available agricultural and environmental resources, level of social and demographic development, and threats to sustainable development of rural areas. We have concluded those types and subtypes into the chart for the purposes of further investigations (Figure 4).

Figure 4. Classification of regions of Russia on the level of rural development.



Source: Author's development based on (Merzlov, Ovchintseva and Popova, 2012; Merzlov et al, 2012).

Regions of Type 1 are the major agricultural and rural zones of the country. They have predominantly agricultural specialization of their rural territories and favorable natural, environmental, and social conditions of sustainable rural development. Those regions, while accommodating 18% of Russia's territory, amount to 64% of total rural population of the country and about 60% of the national gross agricultural production.

Regions of the Type 1 are divided into four subtypes depending on the level of intensification of agricultural production and density of rural population. Thus, regions of the Subtype 1a are densely populated and develop intensive agricultural production. Those are the regions of the Central Black Earth Region (central part of the European Russia) and North Caucasus. Rural settlements are predominantly big, with an average size of over 100 inhabitants. Occupying only 2.4% of the Russia's territory, those regions amount to one fifth of total rural population of the country and one fourth of national gross agricultural production. The major characteristics of those regions are high level of land reclamation (70-80%), migration attractiveness, and high-productive agriculture. Rural development in those regions is based on favorable farming conditions, labor resources of proper qualification, high return on investments, intensification of agricultural production, and development of large-scale agricultural production (Trukhachev, Lescheva, 2010; Lescheva, 2008). However, regions of the Subtype 1a still have certain structural problem, which threat sustainable rural development: low regulation of land relations, growing unemployment in mono-functional rural areas (Bondarenko, 2011), low level of environmental management, and social and ethnic conflicts (Merzlov et al., 2012).

Regions of the Subtype 1b, on the contrary to the Subtype 1a, have predominantly extensive type of agricultural production and dense rural population. Those are the regions of southern parts of Volga River, Ural, and Western Siberia. They are less diversified in terms of agricultural

production when comparing to the Subtype 1a; their major specialization is grain production. Although those regions produce about 22% of national gross agricultural production, they do that on the much bigger acreage (7% of Russia's territory). Potential of sustainable rural development in those areas is related to favorable demographic structure (even taking into account the existing density of population), essential land resources, and development of small and medium farms, including in the sphere of animal production. The main concerns in terms of long-term sustainable rural development are low level of diversification of rural economy, underdeveloped and outdated rural infrastructure, and narrow market for local agricultural products and food because of rare population and long distances between settlements (Merzlov et al., 2012).

National republics of middle Volga River and Ural region are classified as Subtype 1c. They have intensive agricultural production (13% of national gross agricultural production with only 2% of territory of Russia). Those regions are characterized by essential regional support to local agricultural producers and rural development (especially in the Republic of Tatarstan and Republic of Bashkortostan), which makes them attractive for migration and secures employment and traditional rural way of life. However, as most of the regions in Russia, there are certain problems related to outdated production and distribution facilities, underdeveloped social and medical infrastructures in rural areas, and lower living standards in rural areas in comparison to cities.

The last subtype of the Type 1 includes republics of North Caucasus and regions of Siberia with traditional extensive agricultural production. One of the major advantages of the regions of the Subtype 1d is high natural increase of population (average natural increase is 5.6%). Since those regions are predominantly mono-ethnic, social tensions in rural areas are lower in comparison to the regions of the Central Russia. Traditions are very important, that is why rural way of life is a kind of value even for young people (which are an additional factor of retention). Agricultural production amounts to 21% of gross regional production in the regions of North Caucasus (10-14% in Siberia). Density of rural population varies depending on the region, natural conditions, and development of agricultural production (from only 1.3 inhabitants per square km in Siberia up to 33 inhabitants per square km in the regions of North Caucasus).

Type 2 includes regions with diversified rural economy, agricultural production of a suburban type and favorable social conditions. There are only two regions in Russia, which are closely connected to the biggest urban agglomerations of Moscow and Saint-Petersburg (Moscow and Leningrad Oblasts correspondingly). Such proximity conditions strong orientation of agricultural production on urban markets, developed rural infrastructure of a suburban type, high migration attractiveness, growing share of services and non-agricultural activities in rural employment, and intensive utilization of recreational resources. Agricultural production is predominantly concentrated in big agricultural organizations and integrated complexes (Trukhachev, Lescheva, 2010). Potential of sustainable rural development is preconditioned by the highest migration attractiveness of those regions in Russia, opportunity to use urban infrastructures and to get better employments in the cities, proximity of high-capacity urban markets with developed distribution and transport infrastructures. However, those advantages

easily pass into threats to sustainable rural development, particularly to land tensions, shortage of natural and environmental landscapes, high pollution, high costs of production because of growing prices for land and labour, and migration of the qualified labor resources to cities.

Regions of the Type 3 have unfavorable social conditions for the purposes of sustainable rural development and vast zones with attributes of economic and social depression. The major common characteristics of those regions are depopulation and social degradation of rural areas, as well as the growing gaps between living standards in rural and suburban areas. The regions of Type 1 occupy one fifth of the Russia's territory and provide about one fourth of national gross agricultural production. However, this share in gross production is getting shortened.

Regions of the Subtype 3a have the most severe social conditions: rare rural population (4 inhabitants per square km), small average size of settlements (below 100), continuing depopulation, and migration outflow (net migration decline is 2.5 permille). Because of low employment opportunities in rural areas people move to cities. The major threats to sustainable rural development are also ageing, migration outflow of young people (up to 17 permille), social degradation and growing social tensions, underdeveloped rural infrastructure, bankruptcy of agricultural producers, low labour efficiency, high production costs, abandoned settlements, and derelict land. The way to increase effectiveness of rural economy in those areas may be related to diversification and development of alternative types of activities and sources of income.

Subtype 3b includes regions with better social conditions and higher density of rural population (11 inhabitants per square km in average). When comparing to the Subtype 3a, those regions have better economic and social preconditions for sustainable rural development; however, there are still tendencies of social and economic depression observed. Local agricultural organizations lack labour resources of high qualification, rural settlements suffer from migration outflow of young people and ageing of population.

Regions of the Subtype 3c are characterized by a combination of unfavorable social and environmental conditions. Those are the regions of Ural, south of Siberia, and Far East. Density of rural population is very low (2 inhabitants per square km in average). Agricultural production is not a predominant type of rural activities, since many people are involved into forestry and mining. As other rural areas of the country, regions of the Subtype 3c suffer from migration outflow and underdeveloped infrastructure.

The rest of the regions are related to the Type 4. Those are northern and eastern parts of the country with area of 62% of Russia's territory and population of only 6% of total population. The regions are not heavily involved in agricultural production, and their impact into the national gross agricultural production is very small. Subtype 4a includes regions of northern part of Russia and Far East. Rural people in those regions are employed in forestry and mining. Agricultural production is supported by regional and federal budgets. Bankruptcy of forest-industry enterprises, high unemployment and migration outflow create serious threats to development of rural areas.

The biggest territory out of all regions of Russia is occupied by rare populated regions of the High North. Occupying over 44% of the territory of Russia, those regions accommodate only 2% of rural population. Average density of population is extremely low – below 0.08 inhabitants per square km. Agricultural production includes traditional industries of indigenous Arctic ethnic groups, such as reindeer husbandry, hunting, animal breeding, and fishing. Apart from common problems of migration outflow and underdeveloped rural infrastructures, the serious threat to sustainable development of those regions is environmental pollution caused by mining enterprises.

Concluding the conducted classification, we have to emphasize, that regions of the Type 1 are characterized by the growing role of agricultural production in rural development (upon condition of modernization of traditional agricultural production). In order to ensure sustainable rural development in those regions it is necessary to promote introduction of innovation into agriculture, diversification of rural economy, infrastructural development of rural areas, and alternative sources of income for rural people, including in the areas, not related to agriculture.

Regions of the Type 2 are characterized by the highest convergence of rural and urban areas, outrunning growth of services and recreation up to supersession of traditional agricultural activities, and absorption of labour resources by urban and suburban areas.

Group 3 includes regions with the severest economic and social depression of rural areas. The biggest constraints of sustainable development of rural areas in those regions are shortage of labour resources and underdeveloped infrastructure.

Regions of the Type 4, occupying the biggest territory, have the smallest share in total rural population and national gross agricultural production. Those regions are very rarely inhabited, and are very risky for any kind of agricultural production, except traditional hunting, fishing and animal breeding of local ethnic groups.

The above presented classification, however, still does not reflect the whole range of differences between rural areas in Russia. Local regional differences are sometimes even stronger, than the interregional ones. That very much depends on a number of factors, including economic, social, environmental, geographic, historic, cultural, and ethnographic. That is why elaboration of strategic directions of rural development and related state and regional policies has to consider both existing interregional differences and internal identities of every district and even settlement.

Conclusions

International approaches to sustainable rural development include such categories as conversion of agricultural production into the organic one, preservation of biodiversity, and involvement of local societies into elaboration of rural development policies and their implementation. Russia still lacks those directions in its rural policies, at least in practices of rural development. There are no sufficient support of small farms and rural households, promotion of diversification of rural economy, and

development of information and consulting services for local agricultural producers and relevant infrastructure.

As our research has shown, regions of Russia are very much diversified in terms of current economic and social situation in rural areas, contemporary rural policies and potentials of sustainable rural development. The currently introducing national concept of innovation development and modernization of agri-industrial sector may increase those gaps even further, since rural areas with favorable conditions will continue developing, while depressed territories will continue suffering from growing migration outflow and degradation of rural settlements.

That is why "industry-based" approach should be transformed into a "regional-based" approach in order to eliminate gaps between regions and promote economic development of rural territories in the stagnated regions. The existing state policy of rural development, particularly the Federal Target Program "Sustainable Development of Rural Areas in 2014-2017 and to 2020" recognizes regional specifics (provision with natural, social and labour resources, development of rural infrastructure, environmental conditions of agricultural production, etc.). However those specifics do not very much affect the actual budget allocations, since volumes of financial support often depend on political issues and loyalty of local authorities.

Classification of regions on the level of rural development is necessary in order to determine priority zones for development and directions of support. Permanent structural shifts in rural employment and drain of skilled labour resources from rural areas call for diversification of rural economy, support of small and medium businesses, development of cooperation of farmers and integration of big agricultural producers, and promotion of non-agricultural job alternatives in rural areas (tourism, services, etc.).

The set of measures to be considered by the next Rural Development Strategy 2030 includes implementation of rural development issues into the national and regional development strategies; consideration of tasks of sustainable rural development in the rural area planning schemes; improvement of rural infrastructure, including transport and communications; analysis of environmental problems and existing threats to sustainable environmental development; elaboration of measures to secure biodiversity; expand special support measures, such as for young people and families, in order to retain them in rural areas; increase of investment attractiveness of rural areas in general and rural settlements in particular as local centers of rural development.

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WAREHOUSE RECEIPTS FUNCTIONING TO REDUCE MARKET RISK[1]

Daliborka Jovičić[2], Ljiljana Jeremić[3], Lazar Milićević[4], Aleksandar Zeremski[5]

Summary

Cereal production underlies the market risk to a great extent due to its elastic demand. Prices of grain have cyclic movements and significant decline in the harvest periods as a result of insufficient supply and high demand. The very specificity of agricultural production leads to the fact that agricultures are forced to sell their products at unfavourable conditions in order to resume production. The Public Warehouses System allows the agriculturers, who were previously unable to use the bank loans to finance the continuation of their production, to efficiently acquire the necessary funds, by the support of the warehouse receipts which serve as collaterals.

Based on the results obtained by applying statistical methods (variance and standard deviation), as a measure of market risk under the assumption that warehouse receipts' prices will approximately follow the overall consumer price index, it can be concluded that the warehouse receipts trade will have a significant impact on risk reduction in cereal production. Positive effects can be manifested through the stabilization of prices, reduction of cyclic movements in the production of basic grains and, in the final stage, on the country's food security.

Key words: *warehouse receipts, market risk, variance, standard deviation.*

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2 Daliborka Jovičić, M.Sc., Coordinator of Statistical Reporting Service, Dunav Insurance Company, Kolarceva Street no. 7, 11000 Belgrade, Serbia, Phone: +381 11 3037 233, E-mail: daliborka.jovicic@dunav.com

3 Ljiljana Jeremić, Ph.D., professor at University Singidunum, Danijelova street no. 32, 11000 Belgrade, Serbia, Phone: +381 11 3093 220, E-mail: ljjeremic@singidunum.ac.rs

4 Lazar Milićević, Coordinator of Assets and Liabilities Risk Management Operations, Kolarceva Street no. 7, 11000 Belgrade, Serbia, Phone: +381 11 3037 233, E-mail: lazar.milicevic@dunav.com

5 Aleksandar Zeremski, Ph.D., Scientific Associate, Economics Institute, Kralja Milana Street no. 16, 11000 Belgrade, Serbia, Phone: +381 11 3613 049, E-mail: aleksandar.zeremski@ecinst.org.rs

Preliminaries considerations

The creation and development of the warehouse receipts concept is related to the USA. Warehouse Receipt Financing in the USA dates back to the mid-19th century, whereas its importance and further development was inspired by the adoption of the 1913 Warehouse Act. During the last 15 years, significant efforts were made to build-up this type of financing in the EECA[6] countries as well, by the support of donors, such as the USAID, EBRD and the World Bank.

At the beginning of 1990-ies, in the EECA countries, the banks were experimenting with various types of financing: "The farmers assigned to the banks their right to income from the future corn sales and, in return, the banks granted them funds for immediate financing and/or financing through the particular types of warehouse receipts". In some countries, warehouse receipt financing was based upon the Soviet ere Form 13 Warehouse Certificate[7] (See more at: Hollinger and Rutter, 2009) and the collateral management by banks and/or their agents.

The banks and merchandisers found their way of using the warehouse receipts as a part of financial structure. In the past 10 years, the banks granted large funds based on the "quasi-warehouse receipts" (Form 13 – Warehouse Receipts dominant in Russia, Ukraine and Kazakhstan). With these receipts, the banks were able to control the goods; however, the depositor had too wide authorizations in handling the goods, which made the loan uncertain for the bank.

The Public Warehouses System has shown especially successful in the EECA, where farms have no loan history and only poor funds to offer as collateral. The EBRD has promoted the development of the relevant regulatory and institutional framework, and they invested into the banks that were willing to use the warehouse receipts based on the stored agricultural products as collateral for granting loans to the local agricultural producers.

The defined Support Programme, developed by the EBRD, has two following main goals:

- Passage of experience and knowledge from the Central Europe, regarding the warehouse receipts issued on the basis of stored agricultural products;
- Analysis of the current legal frameworks of a country and suggesting and requiring their improval.

In favour of the above mentioned, there are some successful examples in the countries like Bulgaria, Hungary, Slovak Republic and Ukraine. These countries recorded a permanent recovery of the agricultural production as a result of implementation of the Warehouse Receipts Programme (WHRP) but also, to a large degree, thanks to the improved macroeconomic situation, political stability and favourable weather conditions.

6 *EECA - Eastern Europe and Central Asia.*

7 The Warehouse FORM 13 existed in the countries of the SSR, in the form of the store notes certifying that the goods were received on store. The basic relevant law did not allow for the receipt to be used as collateral.

The implementation of the licensed warehouses concept and the adoption of the necessary laws are of multiple importance and they affect more than one sector (directly or indirectly included in the system). We shall mention only a few most important effects bellow (Stanković, 2010):

- Secure storage for the agricultural products, allowing the farmers to define the most favourable period for selling their products without being blackmailed by the wholesalers,
- Possibility for the farmers to get a more favourable loan for the procurement of row material and machinery and to purchase land by offering the warehouse receipt as collateral,
- Multiple protection of depositors, ensuring the quality and quantity of the goods placed on store,
- Increased liquidity of the agricultural system in the cases where the land cannot be used as collateral,
- The Integration of domestic market into the regional and world markets, the enhancement of daily trade of stored goods and attracting more investors,
- Providing basis for the financial derivatives market development,
- The System enables the banking sector to enter a broader market at a smaller risk (high level of collateral protection).

The basic aim of introducing the System of Licensed Warehouses and Warehouse Receipts is to offer the alternative to producers and processors in deciding about the short term financing, since they would be able to offer the stored goods as collateral (warranty, means of insurance). In the previous practice, the farmers had no much choice in financing the sowing and the agro-technical measures. Often, the land could not be used as loan collateral, because of the outdated land registry and the difficulties in determining the rights of land ownership. Alternatively, the farmer could exchange his goods for the materials needed to continue the production or sell them, in a need, at any price offered. Such long-term practice covered up the actual costs and values of the products, i.e. the farmers did not get the real market value for their products; instead, their potential profit was redirected to other people.

In that sense, the System of Licensed Warehouses and Warehouse Receipts proposes a different practice, which should contribute to the development of agriculture by offering the goods collateral as a solution for the long-standing problem of short-term financing. On the other hand, the System of Licensed Warehouses is important for the firms dealing in buying and further processing of agricultural products, because it allows them to protect against the risks of unexpected cyclical price fluctuations of agricultural products by buying goods in advance and, in this way, efficiently plan the cost price of final products. The farmers, on the other hand, would get the money in cash and not rely upon the bank loans to prepare for the next sowing.

The multiple protection of depositors is inevitable, in a sense of ensuring the quality and quantity of the goods placed on store. Under the adopted Act on Licensed Warehouses for Agricultural Products, a licensed warehouse shall be obliged to compensate a holder of a warehouse receipt for the damage incurred upon the goods on storage; if they fail to do so, the compensation shall be paid by the Compensation Fund. The basic aim of the Compensation Fund is to provide, through the additional insurance coverage, the additional guarantee to the owner of goods and/or creditor that they will collect their claims. The licensed warehouses shall also be obliged to take out the insurance coverage, with the authorized insurer, for the basic assets and the goods on store against the risks of flood, fire and theft.

The spreading of bank credit lines to include the financing of activities of small agricultural producers has, up to now, been very modest, due to the high costs of acquiring the borrower's credit history and the lack of movable collateral, as well as the non-regulated land ownership structure. The problem has become more complicated due to the non-existence of loan investments and the lack of educated staff in banks, able to assess the credit rating of the potential borrowers. On the other hand, a small number of farmers and/or farmlands own the expertise to compose the investment plans needed to get the loans. The System of Licensed Warehouses stimulates banks to grant loans to farmers, by using the warehouse receipts as collateral, as well as by forming the Compensation Fund (to fulfil the commitments of the public warehouses). The precondition for this is to adopt a clear legal framework, which would, among other things, regulate the compulsory liquidation of stocks on the basis of a warehouse receipt if the loan becomes uncollectable in due time, thus allowing the banks to properly invest their funds at a minimum risk.

By means of warehouse receipts, the system of licensed warehouses stimulates the development of the commodity-based financial markets; this is very important for Serbia, because of a long tradition of agricultural production. In this way, a large number of financial institutions, broker and dealer companies and investment funds are allowed to make the risk dispersion by investing into the commodity credit instruments.

Warehouse Receipt as Security Paper

The commercial bills with commodity coverage and/or warehouse receipts represent the securities which guarantee that the goods in question are of the claimed quality and quantity on storage.

Depending on whether the warehouse receipt consists of one or two parts (the docket and lien warrant), there are two concepts. The first concept applies under the Anglo-American legal system (USA, Great Britain), while the second is present in the countries with continental legal system (including Serbia). The essential difference between the two concepts is in proving the ownership over the goods, i.e. whether any one or both documents (the docket and lien warrant) are needed to that purpose. Speaking about the warehouse receipt consisting of two parts (the docket and lien warrant), the holder of the docket has no right to take the goods from the warehouse (it is protected by the

lien part of the warehouse receipt), until the full repayment of the loan secured by the goods collateral and/or the lien warrant. The holder of a lien warrant is entitled to the value of collateral equalling the amount of debt and the accrued interest. The docket and/or the lien warrant can both be the subject matter of a separate trade (i.e. they can be traded with independently); this refers to the exchange business, as well. The warehouse receipt can be issued in both written and e-form.

The warehouse receipt is divisible, i.e. can be divided into multiple warehouse receipts in exchange for the already issued warehouse receipt and vice versa. The depositor may require of the warehouse to split the goods into particular portions and issue a separate receipt for each portion. The warehouse receipt is usually valid for up to one year, i.e. its validity cannot exceed the life of the agricultural products.

In case of a two-part warehouse certificate, the warehouses can issue the goods only after the reception of both its parts (the docket and lien warrant). The holder of the docket can be issued the goods only if the debt has been fully repaid, pursuant to the contract, which must be supported by adequate documentation. The holder of the docket may require that he be sold the goods if the actual selling price can cover the debt and/or pay off the holder of the lien warrant and cover the storage expenses, provided that he gets back the realized surplus. The warehouse receipts can be traded with both at the stock exchange market and outside it, in a public auction and/or through a direct offer.

The following securities are used in commodity exchange, as instruments in the goods trade:

- commercial bills with commodity coverage or warehouse receipts,
- time sales contracts (forward contracts, futures contracts and option contracts).

Warehouse receipt can be widely applied as an instrument of ownership transfer in transactions with futures contracts and in the spot trade. In this way, the creditor is insured i.e. he has a secure collateral in a form of warehouse receipt.

In order to protect against the product price fluctuations, the warehouse receipts may be combined with hedging instruments. *Hedging is a method of using derivatives (derivative securities) by means of which an individual or an enterprise ensures a minimum price for its products (as well as maximum purchase price), by using a set of transactions, available on the financial market* (Stojanović, 2000). Classical example of hedging is the purchase of a particular time contract for the delivery of a particular commodity at a precisely defined future date. IMF recommends, above all to the developing economies, to use the hedging instruments in their export arrangements, in order to keep the risk of fluctuation of the basic product price, interest rate and foreign currency exchange rate under control (Mathieson et al., 1989). Kenya and Uganda are among the countries that often use the combination of warehouse receipts and hedging, especially in financing the coffee exports.

The most important form of exchange business is trading with futures. Actually, trading with futures represents the link between the commodity and financial markets, enabling the control of the possible risk occurrence due to the fluctuation of interest rates, foreign

exchange currency, price of shares and bonds etc. The agricultural producers have a natural aversion towards the price fluctuation risk and they find it very attractive when it is possible to agree on the price of agricultural products in advance and ensure a minimum return on the sales contracts. On the other hand, the producers who use the agricultural products as the production inputs can include their expenses, in advance, into the cost price of final products.

By concluding the time contract, the market risk and/or the price fluctuation risk is not fully avoided, only minimized. The risk of force major or credit risk are always present (risk of default by any contracting party). Therefore, when concluding such contracts, there is always a third party - a clearing company which protects time contracts against the credit risk.

The functioning of futures market is of multiple importance for the increase of the total economic efficiency of a country and the increase of the degree of stability and balance of the agricultural production. The short term investments into the agricultural production would also improve the Serbian food processing industry (see more in: Stojanović, 2000).

The preconditions for successful functioning of the Commodity Exchange and its development are:

- macroeconomic stability of a country,
- depth of the stock exchange market,
- market liquidity and price fluctuations.

Macroeconomic stability of a country is a precondition for the investors and their investments, since it additionally lowers the risk of investing into a particular country. The factors for maintaining the macroeconomic stability of a country, such as the stability of domestic currency, balanced prices and interest rates are crucial for meeting the conditions for the development of stock exchange business.

Market depth implies a lot of financially powerful players on the commodity-stock exchange market, both the sellers and the buyers, which provides for the price stability. The insufficient market depth leads to the market instability and encourages the speculators.

Market liquidity influences the movements of prices on the market. The increased market liquidity means reducing the market risk. In order to achieve the appropriate market liquidity, it is necessary to have a sufficient number of the institutional and individual investors on the market. In addition to commercial hedger, there are also arbitragers and speculative dealers on the Commodity Exchange, ready to take over the risk of price fluctuations. Bigger number of players on the Commodity Exchange leads to a better market liquidity.

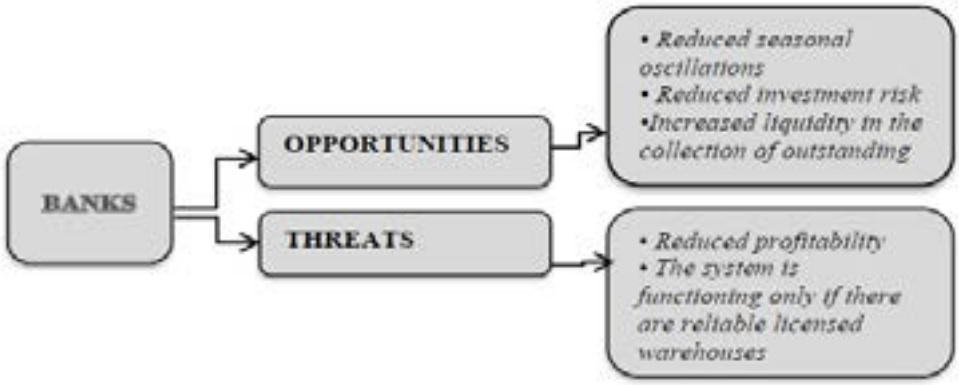
Trading with futures contracts calls for ***minimum price fluctuations*** – on the contrary, if the prices remain unchanged and/or only slightly changed over a longer period of time, there is no need for a trade with futures contracts. This comes out of the fact that the trade with futures contracts is done only to protect the stock exchange participants against the future price fluctuations (Dunković, 2009).

On the basis of experience in trading with shares and other corporate securities on the financially organized market, it is necessary to provide for the dematerialization of warehouse receipts, which implies the existence of the electronic data basis. The advantages of dematerialized warehouse receipts, i.e. the e-warehouse receipts are: abolishing of hard copy warehouse receipts, requiring complicated recording and filing processes, faster information exchange and the reduction of theft risk.

Opportunities and Threats for Banks and Agriculturers Trading in Warehouse Receipts

Implementation of the Public Warehouses System and using the warehouse receipts as collateral or as a security paper in trading on the Commodity Exchange carries both opportunities and threats, for all the participants in the system chain. Some of them are listed below:

Picture 1. Opportunities and Threats for Banks Trading in Warehouse Receipts



Source: Author's Analysis.

The reduction of investment risks through the possession of the warehouse receipt as collateral (especially important for new bank clients, having no credit history) and the reduction of seasonal price fluctuations increase the liquidity of banks, which is especially important for those banks having difficulties in the collection of debts (it is easy to en-cash a warehouse receipt, either in a bank or by selling it at the stock exchange).

The threats for the banks are reflected in the reduction of interest rates, which may give rise to the reduction of profitability. However, a warehouse receipt functioning as collateral adds to the reduction of the risk of investing into loans to agricultural producers, at the same time lowering the bank interest rates. The trust of banks towards the investments into loans based on the warehouse receipts is possible only if there are reliable, licensed warehouses with concluded Professional Liability Insurance coverage for the stored agricultural products.

Picture 2. Opportunities and Threats for Agriculturers Trading in Warehouse Receipts

Source: Author's Analysis.

The business profitability of agriculturers has grown through the possibility to postpone the sale until the price of the agricultural products is increased. The price transparency is ensured by the stock exchange trade. A warehouse receipt functioning as collateral makes it easier for the agriculturers to get the bank loans needed for the uninterrupted cycle of the agricultural production. The advantage of using the warehouse receipts for the export-designed products is very important, since it enables the holder of a receipt to borrow abroad, in a foreign currency at a lower real interest rate. In this way, the holder of a warehouse receipt is protected against the currency risk when borrowing abroad, using the export products as collateral.

The threats reflect in the speculative character of the warehouse receipt (the producers wait for the best price on the market, the increased price leads to the increased offer and, at one moment, the prices fall and the profit decreases). Moreover, the storage and the professional liability insurance represent the additional expenses for agriculturers.

A warehouse receipt is a security paper and, as such, enables the transfer of the goods ownership. Therefore, it plays an important role in the international goods turnover, helping to reduce the transportation costs and avoid the unnecessary and often expensive goods transportation.

Positive Examples of Implementation of Warehouse Receipts Programme in Neighbouring Countries

Successful examples in the Region, where the European Bank participated in the implementation of the WHRP (*Warehouse Receipts Programme)* are Bulgaria, Hungary, the Slovak Republic, and the Ukraine. These countries report a constant recovery of the agricultural production as a result of the implementation of the WHRP but also, to a large degree, thanks to the improved macroeconomic situation, political stability and favorable weather conditions.

• In 1999 **Bulgaria**, when the EBRD got involved into the implementation of the WHR Programme, the Warehouse Receipts Law had already been adopted. The drafting of the Law

was largely supported by the Agency for International Development (USAID) and World Bank. The European Bank signed the Memorandum of Understanding, as of 26th July 1999, thus supporting the intention of the government to fully implement the Warehouse Receipts Law, including the formation of the Compensation Fund. To that effect, it became obliged to provide for the WHR System implementation financing via the local banks, following the implementation of the Law. After a successful implementation of the Law on all levels and the formation of the first Compensation Fund in the Region in 2000, the European Bank actively participated in granting the loans, during a consecutive period of 3 years. Bulgaria is one of the most successful countries, which, by introducing the Public Warehouses System achieved an extraordinary success in boosting the warehousing capacities and developing the lines of credit granted through such a System. This is also seen from the fact that in the year 2000, when the System was officially introduced, there were 250.000t of warehousing capacity and 22 public warehouses in Bulgaria. This number swiftly increased, so that in 2009, Bulgaria had 47 authorized warehouses and the warehousing capacities grew to 500.000 t. Such a progressive growth of the warehousing capacities brought about the increase in the amount of loans granted by the support of this System, reaching to over 70 million dollars (Hollinger and Rutter, 2009)

• **Hungary,** under the 1996 Act, oriented its Public Warehouses System on export-designed products, such as wine, sugar, fertilizers and, above all, the grains. The export subsidies granted by the Hungarian government inspired others to get involved in the Public Warehouses System; a large number of banks started financing the export products. Since the adoption of the Public Warehousing Act, Hungary made the biggest step ahead in the development of the warehouse receipts in the Eastern Europe. Hungary is the first country in the Region to have completely implemented a specific legal framework regarding the warehouse receipts. The European Bank, however, never took active participation in granting funds against the store notes (although there were a few calls for cooperation by local banks), nor participated in the implementation of the legal regulations. The loans granted under this programme are very popular in Hungary and both local and international banks are very interested in a warehouse receipt as a pledge instrument in granting loans to agriculturers (EBRD, 2004).

• **Slovakia** is the first country where the European Bank participated in granting the loans secured by a warehouse receipt as collateral. In addition to the European Bank, an important role in the warehouse receipt financing has been played by the Agricultural Bank and the SFMR (State Fund for Market Regulation), through which about 55 million dollars have been invested in the market. Whereas the European Bank accounted for the technical support (financed by Taiwan), in the sense of providing the Agency for Issuing Licenses with the staff and their training, the SFMR has had an important role in covering the risk of exchange rate fluctuations of the Slovak currency. Nowadays, the European Bank has ceased with its active participation in granting such kind of loans in Slovakia. However, since a successful implementation of the WHRs in 1998, the European Bank took active participation during the four subsequent uninterrupted seasons (Hollinger and Rutter, 2009).

• **Ukraine** has joined the countries implementing the Licensed Warehouses System and issuing the WHRs in 2002, after they made major efforts to that aim supported by the EBRD and USAID. This country has implemented a sound Warehouse Receipt Act which especially regulates the stored grain. The Ukraine, the first country in the Region to have introduced a Central Electronic WHR Register, owns 500 licensed warehouses and more than 26 million tons of storage capacity. The initial enthusiasm of financial institutions for the big opportunities offered by the Ukrainian grain market inspired the EBRD to invest 500 million dollars by way of warehouse receipt financing, but the country was unable to adopt an efficiency guarantee mechanism during the initial phase of the programme. Although two state-owned licensed warehouses went bankrupt in 2005, this did not discourage the international financial institutions from credit financing (Hollinger and Rutter, 2009).

• Unlike other countries in the Region, **Serbia** adopted the Public Warehousing Act only in 2009 (Službeni glasnik br.41, 2009). A Manual was issued for the operation of the Public Warehouses of grain cultures and the warehouse receipts, issued by the Public Warehouse (Mastilović et al., 2011), were introduced as a marketable material, under the Annex to the Rulebook on Stock Exchange Trade on Novi Sad Commodity Exchange. Traditionally, Serbia has a strong agribusiness sector and is amongst the leading countries in the Region when it comes to the agricultural production. A big money support of the European Bank for Reconstruction and Development is expected for this segment. This has been supported by signing a Protocol between the Serbian Ministry of Agriculture and the EBRD for providing the money support in the implementation of the WHR System. The EBRD support means that they will, through commercial banks, invest money for financing the Public Warehousing Programme. Direct long-term financing by the European Bank has been provided for the big agricultural producers, whereas the small and medium-sized enterprises will be financed through the special-purpose credits granted by local banks. Since the adoption of the Public Warehousing Act, 15 Serbian grain warehouses, of 91.716 tones available store capacity, were issued licenses (Kompenzacioni fond). Having in mind that, in 2012, 1.910.914 tons of maize and 3.532.602 tons of corn were produced (Serbian Statistical Office, 2013), it is necessary to dedicate certain funds to the technical and technological improvement of the existing warehousing capacities and include them into the system, as soon as possible. In this way, it would be possible to avoid the monopoly of few licensed warehouses in setting the storage prices and satisfy the storage requirements of many agricultural producers.

In order to establish a trade in derivatives in Serbia and make the futures market functioning, the following conditions have to be fulfilled (Stojanović, 2000):

- existence of marketable material and a market attractive enough for a term trade in these assets,
- readiness of the economic entities for a term trade, with a view to insuring the basic assets against the price fluctuation risk and achieving the attractive gain by those able to invest their free capital in this way,
- existence of the appropriate legal and regulatory infrastructure (the supreme

legal document regulating the securities turnover, stock exchange and dealings in stocks, and the rulebooks on the transactions on particular stock exchange markets and their regulatory authorities),

- developed trade model (system), implying an adequate information technology, the procedure of transactions netting-out and market administration, supported by the knowledge of trading in futures.

The government, as a creator of social and economic climate, is crucial for the development of trading in futures. For the functioning of trade in futures, in addition to adopting clear legal regulations, it is necessary to implement a macroeconomic reform targeting, above all, the price deregulation and stabilization, which would spur the market orientation and entrepreneurship.

Slovenia is a positive example to have achieved, in a process of transformation, a big-scale turnover in trading with securities without having had a developed capital market. Actually, the strong presence of market economy logics and endeavours to join the EU integration processes brought about a big-scale trade in financial derivatives, in spite of the fact that the economy transformation process was yet uncompleted (the lack of legal regulations, low market liquidity etc.). This is added to by the fact that Slovenia developed individual systems of electronic trade, clearing and information sharing through the Internet network (Stojanović, 2000).

However, the trading in warehouse certificates shall only become popular if the potential buyers gain trust in the system. This highlights the importance of a due licensing and inspection of the warehouses permitted to issue the warehouse receipts. The monitoring system must provide protection against the frauds and ensure that only one party is entitled to the collateral, at any moment.

WHR as Instrument for Reducing Price Risk of Strategic Agricultural Products

By analysing the maize price movements on the Novi Sad Commodity Exchange, during the five-year period (from 2008 to 2012), a clear cyclical pattern can be observed, for each year i+ure of dispersion, it can be observed that the price of maize varies drastically during each observed year:

Table 1. Maize Price Variation Interval per Annum

Year	Maximum price		Minimum price		Variation Interval
	Date	Amount	Date	Amount	$I=x_{max} - x_{min}$
2008	18.1. - 20.1.	16.67	15.10.	7.04	9.63
2009	2.6.	12.23	8.1.	7.40	4.83
2010	19.9.-29.8.	23.00	1.1.-4.1.	10.20	12.80
2011	19.7.	23.56	10.10.	14.80	8.76
2012	20.9.	27.13	1.1. -4.1.	15.50	11.63

Source: Author's Analysis according to Produktna berza Novi Sad.

The intensity and dynamics of variation depends on a variety of factors (the quantity of maize harvested in the current and/or previous year, the crop expectations in the current year, state interventions on the market, limitations to maize import and export and the like).

In addition to the annual cyclical movement, there is also a trend rate of average price growth during the entire five-year period, which can be observed from the graphic representation of daily price movements on the Novi Sad Commodity Exchange:

Graph 1. Maize Price Movements on Commodity Exchange

Source: Author's Analysis according to Produktna berza Novi Sad.

The price movements in time have a particular dispersion, difficult to approximate by a theoretical model in order to attribute an adequate probability to a particular price. Starting from the assumption that all displayed prices in a time series have the same unvariable probability, the expected E(x) price value can be expressed as:

$$E(x) = \bar{x} = \sum_{i=1}^{N} \frac{x_i}{N} \quad (1)$$

Where x_t represents the price at t moment, t assumes the values of 1,2,3, …,N-1,N, whereas N stands for a total number of price observations within a particular period.

The variance and/or standard deviation is a measure of deviation of an amount from the mean value. The variance and/or standard deviation, representing the deviation of a random variable price from its mean value, expressed in the same measurement units, can be expressed as (Muminović et al., 2013):

$$Var(x) = \sigma^2 = \sum_{i=1}^{N} \frac{(x_i - \bar{x})^2}{N - 1} \quad (2)$$

and is reached at by summing up the squares of unit price deviations from the mean values n number of observations reduced by l, where N - 1 is taken for the reduction by one

degree of freedom and/or for the assessment of one additional parameter in the denominator – mean value. In this way, we get the so called impartial assessment of the basic set - in this case, the set of maize prices.

Standard deviation, as a risk measure, is an absolute indicator and it will, as a rule, be higher for the series with higher price variability and lower for the series with lower price variability. It is suitable for comparison, provided the compared series have the same arithmetic mean (expected price); when comparing the series with different arithmetic mean, however, we would use the relative dispersion indicator and/or the variation coefficient CV (Muminović et al., 2013):

$$CV = \frac{\sigma}{\bar{x}} \quad (3)$$

For the observed five-year data series, the price variability during the period of five years can be determined as measured by variance, standard deviation and variation coefficient:

Table 2. Mean Value and Maize Price Variability Indicators per Annum

Year	Mean Value	Variance σ^2	Standard Deviation σ	Variation Coefficient V
2008 to 2012	15.42	29.44	5.43	0.35
2008 to 2012 (monthly average)	15.49	29.09	5.39	0.35
2008 to 2012 (monthly average – general index)	20.29	7.28	2.70	0.13

Source: Author's Analysis according to Produktna berza Novi Sad, http://paragraf.rs/statistika/26_stat_arh.htm

If the named indicators are calculated for the total five-year period, by using both daily prices and average monthly prices, the variation coefficient is the same (0.35), and the mean value, variance and/or standard deviation is almost identical in both cases.

If we had the WHR market, the price movements of such securities would show the ratio between the variability of maize prices freely formed on the commodity market and the price of warehouse receipts on the financial market. Since there is no trade in warehouse receipts on the market, we have used, in the further analysis, the monthly indices of consumer prices (retail price indices before 31.12.2010) as a basis for determination of benchmark prices that could replace the WHR prices. The assumption is that the movements of the warehouse receipts supply and demand, and deferment of their sale until the satisfactory selling price is obtained would lead to the price movements approximating the general price index. The Graph 2 shows the movements of average monthly maize prices and average monthly prices formed on the basis of general price index movements (growth of consumer prices)[8].

8 We took, as the initial price, the price of maize on the Novi Sad Commodity Exchange as of 1.1.2008, to the amount of 16 din/kg (index 100).

Graph 2. Movements of Average Monthly Maize Prices on Commodity Exchange

Source: Author's Analysis according to Produktna berza Novi Sad, http://paragraf.rs/statistika/26_stat_arh.htm

The Graph above shows a much higher stability of price movements when the prices are formed by applying the general consumer price index as opposed to average monthly maize prices. The price stability can be measured by standard deviation as a variability measure. On the basis of variation coefficient computation, the price variability defined on the basis of general indices is by approximately 2.7 times lower than the variability of prices formed on the commodity exchange. During the almost entire five-year period, the level of prices formed by the application of the general index has been higher, compared to the level of average monthly maize prices formed on the commodity exchange. The mean value, in this case, is by over 30% higher than with the prices formed on the commodity exchange, which significantly exceeds the contingent expenses (of storing, insurance and interest), since these expenses are limited by the government imposed measures and a part of them is subsidised[9]. It is especially important to keep in mind that the period of warehousing and/or issuing the warehouse receipts should not exceed one year. The maize price movements can be observed not only with regard to variability, but also to price volatility, i.e. the frequency, speed and amount of price trend fluctuations during the observed periods. The starting point for determining the volatility is the expression of price movements through the price fluctuation rates. Price fluctuation rate is expressed in percentage price growth between two periods, i.e.:

9 Under the Enactment of Stimulative Funds for Subsidizing the Warehousing Expenses (Official Gazette of the RS No. 46/10), the agricultural producers have become entitled to the stimulative funds of 50 to 70 dinars per tonne, for the storage of wheat, durum wheat and maize in 2010, and under the Enactment on Developing Programme for Subsidising Interest on Short-Term Financing of Agricultural Production (Official Gazette of the RS 6/10), the maximum rate was determined for the warehouse receipt loans, to the amount of the NBS reference rate plus 3%, without currency clause, and the interest was partially subsidised, to the amount of the NBS reference rate.

$$r_{pi} = \frac{P_i - P_{i-1}}{P_{i-1}} * 100 \quad (4)$$

Where:

r_{pi} – represents the price fluctuation rate expressed in percentages during the *i* period

P_i – price of the current period

P_{i-1} – price of the previous period

The movements of monthly maize price fluctuation rates on the Commodity Exchange and the fluctuations of monthly maize prices formed on the basis of general price index can be shown in a short form.

Table 3. Rates of Fluctuation of Average Monthly Maize Prices on Commodity Exchange

Month	Average Monthly Market Price P(tr)	Monthly Consumer Price Indices	Average Monthly Indexed Price	Rate of Fluctuation of Monthly Market Price ri(tr)	Rate of Fluctuation of Indexed Price ri(in)
Jan.08	16.00	100.00	16.00		
Feb.08	15.78	100.70	16.11	-1.38	0.69
Mar.08	14.65	101.20	16.31	-7.16	1.24
.....					
Jan.09	8.22	103.00	17.60	9.60	2.98
Feb.09	9.15	102.30	18.00	11.31	2.27
Mar.09	8.35	100.50	18.09	-8.74	0.50
.....					
Okt.12	25.53	102.80	25.40	-4.09	2.79
Nov.12	24.71	100.00	25.40	-3.21	0.00
Dec.12	23.47	99.60	25.30	-5.02	-0.39

Source: Author's Analysis according to Produktna berza Novi Sad, http://paragraf.rs/statistika/26_stat_arh.htm

Rate of fluctuation of average monthly market price in February 2008 amounted to:

$$r_{p2}(\text{tr}) = \frac{P_{i(\text{tr})} - P_{i-1(\text{tr})}}{P_{i-1}(tr)} * 100 = \frac{15{,}78 - 16{,}00}{16{,}00} * 100 = 1{,}38 \quad (5)$$

and the rate of fluctuation of average monthly indexed price in February 2008 amounted to:

$$r_{p2(in)} == \frac{P_{i(\text{in})} - P_{i-1(\text{in})}}{P_{i-1}(in)} * 100 = \frac{16{,}11 - 16{,}00}{16{,}00} * 100 = 0{,}69 \quad (6)$$

The rates of price fluctuation during the entire period were calculated in the same way and, on the basis of computed rates of fluctuation, it was possible to determine their expected values, variances, standard deviations and variation coefficients:

Table 4. Average Value of Price Fluctuation Rates and Maize Price Volatility Indices per Annum

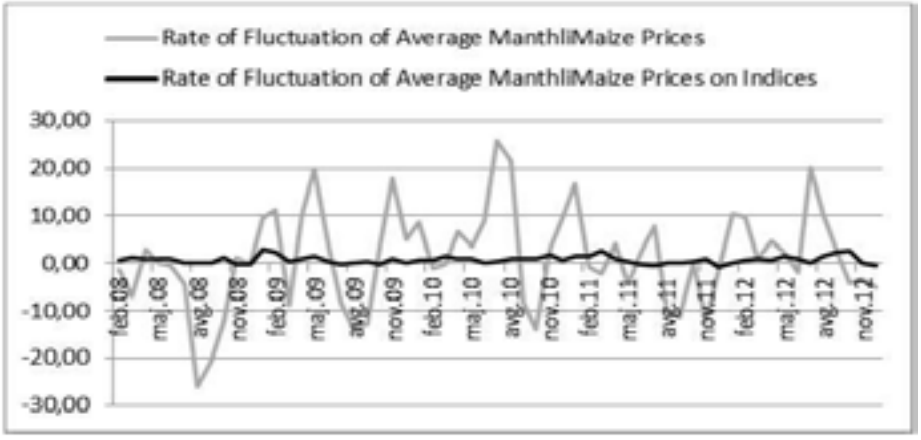
Year	Mean Value	Variance σ^2	Standard Deviation σ	Variation Coefficient V
2008 to 2012 (monthly average)	1.17	104.27	10.30	8.80
2008 to 2012 (monthly average – general index)	0.78	0.65	0.81	1.04

Source: Author's Analysis according to Produktna berza Novi Sad, http://paragraf.rs/statistika/26_stat_arh.htm

All the observed parameters – mean value, variance and/or standard deviation and variation coefficient are much lower with the prices indexed by the application of general consumer price index than in the case of retail price movements. Standard deviation, as a basic volatility measure, is almost 13 times lower when the prices are formed by applying the general index than when they are formed on the Commodity Exchange.

This is also illustrated by a graph of price fluctuation tendencies in the above mentioned cases– whereas the fluctuations of prices formed by applying the general index move mostly within a very narrow interval, around the mean value of 0.78, the fluctuations of market prices show strong volatility.

Graph 3. Rates of Fluctuation of Average Monthly Maize Prices on Commodity Exchange



Source: Author's Analysis according to Produktna berza Novi Sad, http://paragraf.rs/statistika/26_stat_arh.htm

Based on the results of applying the statistical methods and on the assumption that the prices of warehouse receipts will mainly follow the general index of consumer prices, we can conclude that the trade in warehouse receipts will operate to reduce the risk present in the maize production; this primarily refers to increasing the stability of price movements and the reduction of cyclical tendencies in the production of basic grains, which would ensure greater stability and safety in the supply of grains.

Conclusion

A possible problem for the functioning of this system is the price of crops before and after the storage. As the given analysis has shown, it is necessary to have the growth of the market price of stored goods, from the moment of issuing the warehousing certificate to the final settlement and collection of the outstanding debt, so that all the participants in the system chain could achieve an economic gain. This is usually not the case in the countries where the price stability on the agricultural products market is maintained by the help of the government interventions and subsidies.

Direct government control of prices i.e. setting the top selling price for the strategic agricultural products, on the one hand and the lowest purchase prices, on the other, aims at protecting the consumers and maintaining the social peace, at the expense of the producer. The advocates of such a price policy find the basic reasons for using these measures in the fact that those are the strategically important goods, with a high-risk production. They also stress the need for mitigating the seasonal oscillations of prices inherent to agricultural products and that the agricultural production, specific as it is, requires crediting. However, the implementation of policy of guaranteed purchase prices for agricultural products, which are usually higher than the market prices, leads to the new imbalances. Subsidies granted to both the consumers and the producers finally lead to either the shortage or the hyper production on the market, which calls for the engagement of the Directorate for Buffer Stock, as a market stabilizer. The activities of the Directorate bring profit to those selling goods to it, mainly the processors and agricultural plants, but rarely to the agriculturers. Such activities of the Directorate add to the in-transparency and competitiveness of market economy.

Another problem lies in the fact that the basic precondition for the functioning of such a system is a regulated and organized market; in this case, the organized exchange market. Moreover, there is the need for the efficiency of such a market, which depends on the volume and value of the warehouse receipts to be quoted on it.

Development of trade on commodity exchanges and the growing inclusion of agricultural producers in the exchange business shall add to efficient price formation and certain purchase. Also, the information of prices on domestic market would become available to potential foreign buyers. This would much decrease the business risks for the maize (and/or other grain) producers, primarily by ensuring more stable movement of basic grain prices, regardless of whether their fluctuations are caused by the season's factor and/or various expectations of grain crops and their price tendencies. This would eventually improve the economic position of the grain producers, because the average difference in the price levels would much exceed the costs of using the warehouse receipts (such as warehousing, interest and/or insurance expenses).

There are, of course, certain cases when the prices of the warehouse receipts will not follow the movement of the general index of consumer prices; this is, in general, due to the lack of trust in the system of the government protective measures or due to the general disturbances in the movement of prices and inflation processes which could annul the positive effects of

introducing the warehouse receipts. On the other hand, for the warehouse receipts to become a reality the government should make banks and other institutions dealing in the warehouse receipt financing absolutely certain that they will gain return on the invested funds and/or ensure, by issuing the government guarantees, that the investment risk becomes irrelevant.
In accordance with the country specifics, we should initially focus on the limited and targeted assistance in drafting the law and by-laws which are necessary for the regular implementation of the System. The full programme implementation can begin after the government bodies participating in this process have confirmed their decision to adopt the relevant Law. The strong support by the local banks is key for the development of this programme. If the local banks lack in knowledge of the system of warehouse receipt financing, the programme should include their training as well, and the drafting of a pilot project. Any programme targeting the improvement of the warehouse receipt financing system should introduce the participants to the real life advantages of this system, quoting the experiences from the other countries and the relevant industry sectors, in order to convince them of the efficiency of this mechanism. Although the strong local support is necessary, there is no need to include either all or even majority of local banks. It is more efficient to work with one or a few dynamic groups, and we can assume that after these initiators have achieved a positive result, the others will follow their example.

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ROBNI ZAPIS U FUNKCIJI SMANJENJA TRŽIŠNOG RIZIKA[10]

Daliborka Jovičić[11], Ljiljana Jeremić[12], Lazar Milićević[13], Aleksandar Zeremski[14]

Rezime

Proizvodnja žitarica *podleže tržišnom riziku u značajnoj meri zbog svoje elastične tražnje. Cena* žitarica *ima ciklično kretanje i značajno pada u periodima* žetve *kao posledica velike ponude i nedovoljne tražnje.Sama specifičnost poljoprivredne proizvodnje dovodi do toga da su poljoprivrednici prinuđeni da prodaju svoje proizvode po nepovoljnim uslovima da bi nastavili proizvodnju.Sistem javnih skladišta pruža mogućnost poljoprivrednicima, koji do sada nisu mogli da koriste bankarske kredite u cilju nastavka proizvodnje, da uz pomoć robnih zapisa, koji imaju ulogu koleterala, na efikasniji način dođu do potrebnih sredstava.*

Na osnovu rezultata dobijenih primenom statističkih metoda (varijanse i standardne devijacije), kao mere tržišnog rizika pod predpostavkom da će cene robnih zapisa približno pratiti opšti indeks potrošačkih cena, može se zaključiti da će trgovina robnim zapisima u značajnoj meri uticati na smanjenje rizika u proizvodnji žitarica*. Pozitivni efekti bi se manifestovali kroz stabilizaciju cena, umanjenje cikličnosti u kretanju proizvodnje osnovnih* žitarica *i u krajnjoj liniji na prehrambenu sigurnost zemlje.*

Ključne reči: *robni zapis, tržišni rizik, varijansa, standardna devijacija.*

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11 Mr Daliborka Jovičić, koordinator poslova statističkog izveštavanja, Kompanija „Dunav osiguranje“a.d.o., Kolarčeva 7, 11000 Beograd, Srbija, Telefon: +381 11 3037 233, E-mail: daliborka.jovicic@dunav.com

12 Dr Ljiljana Jeremić, profesor Univerziteta Singidunum, Danijelova 32, 11000 Beograd, Srbija, Telefon: +381 11 3093 220, E-mail: ljjeremic@singidunum.ac.rs

13 Lazar Milićević, koordinator poslova upravljanja rizicima aktive i pasive, Kompanija „Dunav osiguranje“a.d.o., Kolarčeva 7, 11000 Beograd, Srbija, Telefon: +381 11 3037 233, lmilicevic@dunav.com

14 Dr Aleksandar Zeremski, naučni saradnik, Ekonomski Institut Beograd, Kralja Milana 16, 11000 Beograd, Srbija, Telefon: +381 11 3613 049, E-mail: aleksandar.zeremski@ecinst.org.rs

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THE IMPORTANCE OF SUCCESSFUL PROJECT TEAM COMMUNICATION IN AGRIBUSINESS

Ana Langović Milićević[1], Vladimir Tomašević[2], Smiljka Isaković[3]

Summary

Agribusiness in the Republic of Serbia is on the very beginning of its preparations for European integrations. There is a need to modernize the organizational structure, change the approach to human resources management, and introduce project approach in the realization of tasks of all businesses in this industry. Project teams are crucial for the coordination of strategic management approach and the basis for organizational strengthening and productivity growth. If project approach is not implemented properly, organizations in agribusiness will not be able to cope successfully with needed reforms. The aim of this paper is to highlight the importance of successful communication of project team members in agribusiness industry which can help to improve motivation while avoiding or minimizing misunderstandings. To analyze the problem of project team communication in agribusiness we have conducted a research on a sample of 16 project managers and 98 project staff members.

***Key words**: agribusiness, project team, project manager, communication, productivity.*

JEL: *J5, L2*

Introduction

Serbian agriculture is facing many problems and difficulties in the process of adjusting to market conditions on its path towards the EU. Agriculture of Serbia and its sustainable development is in a need for agricultural policy that will stimulate the increase of productivity with help of change in the existing production structure and major investments, including clearly defined property rights and the establishment of an efficient land, credit and input

1 Ana Langović Milicević, Ph.D, Full Professor, University of Kragujevac, Faculty of Tourism and Hotel Management, Vojvođanska 5a, Vrnjacka Banja, Serbia, Phone: +381 36 515 0024; E-mail: ana.langovic@kg.ac.rs

2 Vladimir Tomašević, Ph.D, Associate Professor, Alfa University, Faculty of Engineering Management, Bulevar vojvode Misica 43, Belgrade, Serbia, Phone: +381 11 41 40 420; E-mail: vladimir.tomasevic@fim.rs

3 Smiljka Isaković, Ph.D, Associate Professor, University of Kragujevac, Faculty of Tourism and Hotel Management, Vojvođanska 5a, Vrnjacka Banja, Serbia, Phone: +381 36 515 0024; E-mail: smiljka.isakovic@kg.ac.rs

markets. Agribusiness represents the most important economic area in the Republic of Serbia, which, together with associated activities in the overall gross domestic product accounts for about 40 per cent, which indicates that Serbia is an agricultural country and for this reason it is necessary to pay special attention to agribusiness systems.

The reform process of adjusting Serbian agriculture to market conditions is facing many problems beginning from the level of development and degree of technical equipment of the food industry. Constantly present is relatively low level of capacity utilization. On the other hand, a way of organizing activities within agribusiness systems asks for a new approach to working with people and the way of their communications through project approach.

Due to changes in all aspects of business the team approach is imposed on the implementation of business tasks so that managers face now, more than ever, group activities and teamwork. Many companies can succeed only with adequate teamwork while the formation of these teams is a consequence of global expansion. Thus formed teams unite individuals with different interests which individually contribute to the activities of the team. In this way we achieve greater effectiveness because members of this team are formed in such a way that they can discuss and negotiate i.e. exchange their knowledge and diverse experiences. In addition to this advantage, the possible appearance of a conflict should be noted because of the diversity which can be cultural, geographical, organizational, functional, and so on.

In the realization of business tasks by a project approach, the manager of the team has the huge role. The main task of managers in these cases is that he or she connects all members of the group into a whole and that they strive for goals; and this is why the impact of the communication is highlighted here within the sub-processes in the organization. In fact, the manager has no hierarchical role there, but he coordinates interests. In such circumstances, the manager puts into focus the working conditions for the team, encourages cooperation among members and seeks to reconcile the differences that exist between them. To accomplish the task as a manager or team leader, with members from different cultures, he must be aware that many factors could cause misunderstanding. Culture varies in distinct, significant, and predictable ways (Adler, 2002). In order to achieve successful implementation of its role, the manager must be prepared to bear in mind in casual conversations who is the listener and what factors may be misinterpreted. One of the first prerequisites for a manager to be able to direct members adequately is to be a good listener and to prevent problems that may arise in the interaction between the project team members which may emerge due to misunderstandings in communication.

Project team communication in agribusiness and European integrations

Since the EU market for agricultural products is very demanding and selective, agricultural production must be planned and adapted to the respective needs and requirements of individual markets. Obsolescence of technology and equipment in agribusiness manufacturing industry in Serbia is an important limiting factor in the development and diversification of new products and expansion of product range. Major weaknesses are the modest marketing approach of existing producers on the EU markets, poor design and

packing, lack of appropriate brands in exports, a large number of small exporters, as well as negligible way of managing human resources.

On the road to the EU, Serbia should develop agricultural production policies able to create brands. In order to do so, the approach to work and directing people should follow this path. Serbia has good perspective for agribusiness development and exports of agricultural products to the EU and world market. For example, in recent years, Serbian raspberries are most propulsive and profitable export product (yearly export value reached 100 million US dollars). Serbian raspberry has a label of organic food. Raspberry production is an exceptional chance for the development of agriculture and Serbian Economy in general. It could be realized through increased economic efficiency in primary productivity, as well as in the improvement in product quality (Kljajić et al., 2013). Appropriate measures of agricultural policy, primarily by stimulating the growth of productivity could significantly increase competitiveness in exports, at a time when stable import demand for these products is present on the world market.

As business systems got accustomed to operations outside of the home country, so the traditional bureaucratic structures change, and business communication is becoming more and more intercultural. However, it is unclear whether the literature on business communication also keeps up and keeps track of all the new factors affecting the communication among representatives of different cultures and cooperation during the realization of business tasks. Analysis of the results indicates that poor operating results exist due to the gap between theory and practice. Secondly, academics may have a better knowledge if the understanding of the contemporary environment is present.

The global environment imposes on companies that strategies which enable global competitiveness are set so that if they want to continue with further success they must attract, retain and develop highly educated managers and professionals. In order to provide better answers to the global environment, companies are increasingly eliminating slow, bureaucratic structures, try replace them with the new organizational structure, i.e. they implement the project approach. Contribution to this project is the focus on the increased use of technology. Via use of video teleconferencing, the project managers go now beyond national borders in managing the project team. As the implementation of business activities is expanded beyond the home country with a growing number of commercial systems and teams with members of different cultures being formed. Namely, performance of business activities increasingly brings along a project-based approach whereby the staff, that is the project team members, are to get prepared for changes to be encountered when facing a new culture (Langović Milićević and Cvetkovski, 2009). Work is becoming more integrated, employees are taught that flexibility and adaptability are desirable Changes in the environment and the project approach require a new way of communicating. It is necessary that in the near future employees improve communication skills and learn about the cultural diversity (Langović Milićević et al., 2013).

To point it out, managing project teams today is a familiar activity for the company. The factor of distance is not an aggravating factor in the performance of business activities due to

the development of technology. A new factor that should be respected during the course of operations is: the ethnic heritage, and the attitudes and practices embedded in the culture of members of the project team that should be directed towards common goals. Individuals with the same cultural background have common modes of thought, feelings and reactions that are consistent with their cultural heritage. Behavior within task realization is consistent to cultures, and each culture has its own distinctive "style" (Hofstede, 1980). However, numerous studies show that despite the fact that there are members of different cultural heritage, it is believed that the ability of successful communication is the basis in order to achieve coordination between project team members. Of course, one should be aware that in certain cultures the explicit messages of low context are used in communication. These messages are almost " digital " and can be translated into a simple computer units (bits).

Individuals rely on formal communication when they verbally communicate information. Such low-context countries, among others, are the United States, Canada, Switzerland and Germany. In cultures of high context, the less information is transmitted verbally, as the context of communication contains much more. It is high because it includes a lot of additional information such as an individual's biography, his/her relationships, value and place in society. Thus, the message cannot be understood without its context. The high - context cultures are "the ones in which the perception of the individual is inseparably connected with his or her relationship and a context in which it appears. Such countries are Japan, China, Brazil, Mexico, Spain, Italy and the Arab nations of the Middle East (Langović Milićević et al., 2011). Studies that have attempted to compare the different behaviors in transnational project teams in different countries have mostly accepted "cultural" perspective and show that this behavior differs by culture. The impact of culture on communication is not the subject of this paper, but it is important to note that the current study can be extended to the above variables.

In the study that follows in this paper, the factor of cultural differences that may exist among the members of the project team is not analyzed, but other variables such as: active listening, solving personal problems of project team members, education, the impact of age and gender on communication, and therefore on the satisfaction or dissatisfaction which is of course reflected in their motivation during the implementation of project tasks

Problem definition and hypothesis development

The research was focused on analyzing the communication of project team members with a manager, which is a foundation for successful interaction i.e. creating the feeling of satisfaction which leads to the feeling of security, belonging and desire for proving oneself; which consequently leads to the higher motivation, which is essentially the most difficult task for every project manager. This idea was conveyed under the influence of numerous research projects, which emphasized that the communication is less successful even when the individuals with the same cultural heritage are involved, when they are cognitively different (Langović Milićević et al., 2011a). Certainly, this problem becomes more complex and this may influence the realization of project tasks if the project team consists of people with different cultural heritage.

The research was conducted on the basis of several questions:

1. Can active listening of team members lead to the higher satisfaction of project team members?
2. Is it true that showing real interest for the associate can lead to the higher satisfaction of project team members?
3. Can creating personal relationship with associates affect communication positively?
4. Can solving employees' personal problems improve communication?
5. Is it true that managers' showing of authority can improve the communication quality?
6. Does crediting an associate with reliability improve communication?
7. Does the clear focus on tasks improve communication?
8. Does trust in the project manager and his/her capabilities affect communication positively? (This will favorably influence higher motivation and therefore the more efficient project realization will happen.)
9. To what extent is gender a relevant question within the communication context and in the project environment? (Does gender make an impact on the strategy which male and female team managers use in the communication with their members?)

The variables in these hypotheses are measured on the basis of a survey of members of the project team who have the same cultural heritage. Project teams are not identified to protect the participants, i.e. according to their desire to retain "anonymity". An attempt to capture and record the communication during the implementation of some project tasks indicates that there is a risk of anxiety and fear and all the team members who participated in the study declined this method. It has been observed that despite the promised anonymity the fear and suspicion remained which confirmed that the recording is dismissed as a way of collecting additional data.

Samples were obtained in a limited number of institutions: three companies: 16 project teams (a total of 16 project managers). The team size varied from min 5, to max 10 project team members (total of 98 members of the project teams).

The limitations of this research could be seen within the following questions:

- Is it possible to generalize the data obtained from these three companies, and in just one city?
- Do respondents answer honestly to questions?
- Does our data, which was obtained by collecting the questionnaire in a closed form, lead to the right conclusions since this method of data collection does not allow expressing the nuances of opinion or verbal expression?

In the study we used a survey technique (with structured questions, closed form of a poll for easier processing). The survey was conducted from November 2012 to February 2013.

The questionnaire, in addition to given answers, included some space for participants to write their comments and/or to provide additional information after each question. In

this paper elective questions would have to ensure the purpose of work and proving the hypothesis. Only questionnaires which were fully completed were selected for the study.

According to the agreement with the leaders of the project team, and before the consultation, their associates were verbally informed about the project by the research assistants and asked to participate. Associates, who have agreed to participate, signed the consent form. The form was written in Serbian and English. In addition to this, the research team leader suggested that co-workers should not be required to participate for certain reason (the specifics of the project task).

It should be noted that the survey was anonymous, the respondents were members of the project team and the survey contained questions to be answered. By circling one of the answers, the respondents opted for the answer that most closely reflects their views. Since the survey was conducted according to the established rules, it can be said that the results obtained are reliable.

Respondents' sample

The major indicators of the sample structure according to the respondents' individual characteristics are the following ones:

- Respondents' gender;
- Respondents' age;
- Respondents' education level.

Table 1. Structure of respondents in a sample

Structure of respondents in a sample		Frequency	Percentage
Project team members	male	75	77 %
	female	23	23 %
	total	**98**	100 %
Project managers	male	**11**	69 %
	female	**5**	31 %
	total	**16**	100 %
Age of respondents - members in a project team	18- 24	8	15 %
	25 - 34	32	33 %
	35 - 44	26	26 %
	45 - 54	29	30 %
	above 55	11	11%
	total	**98**	100 %
Age of respondents – team managers	18- 24	/	/
	25 - 34	1	6 %
	35 - 44	3	19 %
	45 - 54	12	75 %
	above 55	0	0
	total	**16**	100 %
Education level of project team members	high school	25	26 %
	college	20	20 %
	faculty	43	44 %
	total	**98**	100 %

Source: Authors own calculation.

The respondents' age is defined in two ways:

- Male;
- Female.

Table 2. Project managers and associates: *expectations from managers*

Questions		Alternatives/number and percentage of respondents according to the alternative											Response
In your opinions what factors are most important when you communicate with a team memmber? The fact that manager…		Shows the genuine interest for associates/ You.	Creates personal relationship.	Addresses the associates by their names.	Solves/ is in the process of solving associates' problems.	Shows trust.	Is clearly focused on tasks.	Radiates trust.	Shows professional capabilities.	Shows authority.	Listens to its associates.	Considers his problem to be serious.	
Head of team	Males	0 0%	0 0%	1 9%	0 0%	1 9%	5 46%	0 0%	0 0%	2 18%	2 18%	0 0%	**11**
	females	0 0%	1 20%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	3 60%	1 20%	**5**
	Total												**16**
Project team members	Males	2 3%	3 4%	4 5%	5 6%	1 1%	17 23%	3 4%	2 3%	15 20%	21 28%	2 3%	**75**
	Females	1 4%	3 13%	1 4%	3 13%	0 0%	0 0%	0 0%	0 0%	0 0%	13 57%	2 9%	**23**
	Total												**98**

Source: Authors own calculation

According to the analysis of the survey it was observed that the highest percentage of male managers considered that the basis of good communication is in directing employees to the task (46 %), followed by emphasis of the authority (18 %) and actively listening to associates (18 %).

Women project managers preferred active listening to associates (60%), creating personal relationships with members of the project team as well as a serious understanding of their problems.

Male members of the project team believe that the major criteria for successful communication in relation to others is that the team leaders actively listen to colleagues (28%), then it is essential that they direct assignments (23%) and emphasize their authority (20 %). The analysis of the survey indicated that what is essential for members of the project team is managers' readiness to assist in solving personal problems and addressing by name, but project managers (male) did not declare that these items may be the causes of misunderstanding.

Female members of the project team listed in the first place as the most important criteria for effective communication that the project manager actively listens to them (57 %), understands their problems seriously, and as women project managers also pointed out, the project manager knows how to create personal relationships and is willing to solve their personal problem. According to them, it is least important that project managers call them by their first name.

Table 3. Reasons for the lack of satisfaction in the communication with team managers

Questions		**Alternatives/number and % of respondents according to alternatives**				**Responses**
If the answer is less satisfactory/ unsatisfactory…		The project manager has difficulties in explaining their project task.	The project manager has difficulties in listening to team members.	The project manager has difficulties to assess whether his/her colleague understands him/her.	The rest	
Team member	Male	14 19%	35 47%	15 20%	11 14%	**75**
	Female	4 17%	11 48%	6 26%	2 9%	**23**
	Total					**98**

Source: Authors own calculation

The reasons for the lack of satisfaction of male members in project teams are the following ones: when the manager is not willing to listen to them (47%), which indicates that this factor is very important in the process of communication (Table 3), then the project managers' inability to realize how his instructions are accepted i.e. whether his/ her associate understands him and is able to explain the project task. Employee satisfaction directly or indirectly affects their behavior and more satisfied workers are less likely to leave their employer (Kovačević et al., 2012).

The reasons for the lack of satisfaction among female members in a project team are the same as for their male associates, i.e. the managers' unwillingness to listen to the member of the project team (48%), project managers' difficulties to realize whether his associates

understand him/her and then at the third place the difficulty of project manager in explaining the project task.

Table 4. Answers of the project managers

Questions	**Alternatives /number % of respondents according to alternatives**				**Responses**
Is there a misunderstanding in communication	Yes, often	Yes, sometimes	Seldom	No, never	
Male manager	2 18%	7 64%	2 18%	0 0%	**11**
Female manager	0 0%	0 0%	4 80%	1 20%	**5**

Source: Authors own calculation

On the other hand, when asked whether the misunderstanding in the communication with project team members exists, male project managers indicated that this happens occasionally (64%). Interestingly, there was no a single project manager with a situation that they never at all faced the misunderstanding. On the other hand, we can indicate the link with the previous table (Table 4) the project managers have difficulties to realize whether their associate understood them well, which can be also a reason for misinterpretation.

Female project managers indicated that they rarely experience misunderstanding in the communication (even 80% of them), and even 20% circled "no, never" as their answers. A slight misunderstanding in the communication problems was probably caused by the fact that it is important to listen to a female project manager to listen to her associates and team members of both genders.

Table 5. Project manager: satisfaction level in communication

Questions	**Alternatives /number % of respondents according to alternatives**						**Responses**
What is your experience in the communication with managers?	Male manager	Female manager	Male manager	Female manager	Male manager	Female manager	
	Very satisfactory		Satisfactory		Unsatisfactory		
Male members in a project team	22 29%	38 51%	6 8%	8 11%	1 1%	0 0%	**75**
Female members in a project team	5 22%	11 48%	3 13%	4 17	/	/	**23**

Source: Authors own calculation

For the male members of the project team it was noted that a large percentage is very satisfied in the communication with their managers, but more with female than male project managers.

Women members of the project team did not feel dissatisfaction in the communication with either male or female project managers. They rated the level of the communication with their project manager very highly, which was again in favor of female project managers.

It was found that women managers spend more time than men who lead the project team in the consultation with their partners and that they actively facilitate the participation of their associates as they attempt to equalize the status by taking a less dominant position in the relationship. In addition, consultations with women leaders are acknowledged more like a positive conversation, counseling, than consulting with male managers. Non-verbal behavior is different, it provides more feedback than the consultation with male counterparts. In contrast, male project managers tend to "impose more authority" (to give advice and to paraphrase more – which was added in the questionnaires at a place for comments) and male managers are also more verbally dominant while female managers and associates are attentive listeners. Similarly, this study showed that male managers have little quantitative dominance in the interaction (i.e. they produce more words in a conversation with their co-workers than women and have a tendency to dominate the interaction more than their female colleagues).

As far as the associates' gender is concerned, the research shows that female associates show greater participation in interactions with managers, especially with the leaders - women (i.e. in female - female consultations), co-workers tend to seek a partnership with women rather than with male co-workers. Women tend more to seek relationships and to have affective reactions to events, while men often give objective reports of events. Female associates are given longer deadlines from their managers and more instructions during the implementation of project tasks, and they show that female associates are more diffuse in the presentation of business problems, while the lack of time is a common problem of managers involved in consultations with female co-workers than among men. They also point out that female associates talk about feelings at a higher rate than male associates.

Female-female consultations are longer than male-male consultations, which are also shorter than combinations of diverse genders; female-female consultations are also more egalitarian, that is, the manager and assistant contribute equally to the dialogue and this shows that female-female consultations are more psycho-socially oriented in relation to other combinations of genders.

As far as the behavior of inquiring is concerned, it is not surprising that women managers ask more questions about social problems of their associates, however, there is no clear tendency of a question concerning the format (i.e. the type of question) and whether the question of male and female managers and male and female associates (which is added to the survey on the place for comments). Interestingly, longer female-female consultations include more social discussion and the emotional conversation.

Male managers tend to ask approximately the same number of questions to the male and female co-workers, and women leaders ask more women associates than male ones. In addition, male associates ask more questions to women leaders than men. In this study it was observed that the male and female communicative styles are different, and it has an impact on the interaction during the implementation of project tasks. However, one should not forget that gender is the only one of many factors that may correlate with the behavior, beliefs, and perceptions. Therefore, researchers should not focus on gender in isolation from other personal (e.g. age, ethnicity, nationality), and situational attributes that also influence

the interaction. Gender is biological, but at the same time it can be seen within the social and cultural aspects which require the special study.

Communication with staff managers is also closely associated with their age, the older associates accept more easily the traditional asymmetry in the relationship manager - assistant than younger ones and tend to be less involved in decision-making (based on comments on the questionnaire). Generation differences in symbols, heroes, rituals, and values are evident to most people. They are often overestimated. Many differences in practice and values between generations are normal attributes of age that repeat themselves for each successive pair of generations (Hofstede and Hofstede, 2005). The level of education and care are also factors, for example, where more educated worker will ask more questions and offer more opinions to his supervisor. Here, one should not lose the sight of the type of project tasks which also affects communication. Research shows differences related to associates and their educational status in terms of communication; communication with co-workers where the secondary education is characterized by, among other things, providing less information, fewer instructions and less frequent socio-emotional communication (added in a separate questionnaire for comments). Racial differences may also play a role and influence the exchange of information during consultations, but here this was not a subject of research

Conclusion

Agribusiness in Serbia is at the very beginning of preparations for European integrations. Modernization of agriculture, changes in the approach to human resource management and introduction of project approach to all business entities in the industry is required. Particular attention should be paid to increasing productivity through project management.

The world today is a global community which experiences quick and grave changes which influence huge challenges and temptations. The reason for change and the factors which create the very changes were closely connected since time immemorial with a problem of management model. In the contemporary business conditions, this interconnectedness especially stands out.

These changes in the global environment require that a new manager is ready for operation and that he/she has a new approach to managing projects with members of different cultural environments. This has led to a number of educational efforts, through training and development organization, where diversity is better managed in the workplace and in the provision of services. Therefore, when communication between the managers of the project team and associates are not correlated with their present dissatisfaction, the motivation decreases and hence project results are poor. This paper argues that one of the first approaches in order to successfully communicate with associates of the project team is to be an active listener. Research shows that members of the project team put higher prices when they hear the manager or provide assistance in solving a personal problem. Although creative forms of motivation, in this case, active listening of associates, solving personal problems require greater involvement

of managers, in the end they bring many benefits. It is important to workers that their involvement contributes substantially to a successful business, as well as that those managers recognize that and are interested in the personal circumstances of each. Therefore, it is important to re- emphasize that open and direct communication between the manager and the project team members, which is one of the key motivating factors.

Factors contributing to worse communication are often associated with organizational constraints and conditions under which managers operate. These include the lack of time, the pressure of work and various harassment and cultural diversity. Cultural differences between managers and their staff can also affect the performance of communication and later end results. It is important to point out that the education system must also follow this development. In this world the training of workers is already present in terms of communication through continuing education regardless of the activity they are engaged in.

Therefore, the effects of communication can improve education at the undergraduate level, i.e. including the development of skills to interact regardless of the faculty field which is as important for every individual regardless of the activity they are engaged in. One suggestion arising from this study is that the ability to competently communicate with associates in a project team becomes a prerequisite for obtaining the project manager license.

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ZNAČAJ USPEŠNE KOMUNIKACIJE PROJEKTNOG TIMA U AGROBIZNISU

Ana Langović Milićević[4], Vladimir Tomašević[5], Smiljka Isaković[6]

Rezime

Agrobiznis u Republici Srbiji je na samom početku priprema za evropske integracije. Postoji potreba modernizacije organizacione strukture, promene pristupa ljudskim resursima i uvođenja projektnog pristupa u realizaciji zadataka svih privrednih subjekata u ovoj delatnosti. Projektni timovi su od krucijalnog značaja za koordinaciju prsitupa strateškom upravljanju i osnova su za organizaciono jačanje i rast produktivnosti. Ako se projektni pristup ne primeni na odgovarajući način, organizacije u agrobiznisu neče biti u stanju da se uspešno nose sa neophodnim reformama. Cilj ovog rada je da ukaže na značaj uspešne komunikacije članova projektnih timova u agrobiznisu koja može da poboljša motivaciju i da istovremeno utiče na izbegavanje ili minimiziranje nerazumevanja. Da bismo analizirali problem komnikacije projektnih timoviau agrobiznisu, uradili smo istraživanje na uzorku 16 projektnih menadžera i 98 projektnih saradnika.

***Ključne reči**: agribiznis, projektni tim, projektni menadžer, komunikacija, produktivnost.*

4 Dr Ana Langović Milicević, Redovni profesor, Univerzitet u Kragujevcu, Fakultet za turizam i hotelijerstvo, Vojvođanska 5a, Vrnjacka Banja, Srbija, Telefon: +381 36 515 0024; E-mail: ana.langovic@kg.ac.rs

5 Dr Vladimir Tomašević, Vanredni profesor, Alfa univerzitet, Fakultet za inzenjerski menadzment, Bulevar vojvode Misica 43, Beograd, Srbija, Telefon: +381 11 41 40 420; E-mail: vladimir.tomasevic@fim.rs

6 Dr Smiljka Isaković, Vanredni profesor, Univerzitet u Kragujevcu, Fakultet za turizam i hotelijerstvo, Vojvođanska 5a, Vrnjacka Banja, Srbija, Telefon: +381 36 515 0024; E-mail: smiljka.isakovic@kg.ac.rs

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APPLIED EU QUALITY SCHEMES AND ORGANIC PRODUCTS ON ROMANIAN MARKET[1]

Dan-Marius Voicilas[2], Cornelia-Florentina Alboiu[3]

Summary

The aim of the paper is to identify the market potential for products produced and processed according to the EU quality schemes (organic products, PDO, PGI and TSG) on Romanian market. It provides a description of EU and national policies related to development of new markets like organic, PDO, PGI and TSG products, in particular PGI market. The structure of the paper contains an analysis of the organic products and, separately, the analysis of PGI products in Romania, with examples of products under EU quality schemes. During the analysis, we focused on the following aspects: legal frame, institutions and implementation of the quality schemes, supply side, demand side, trade, investments in the field, problems identified and tendencies. It puts in evidence the main characteristics of the country, tendencies, challenges and particularities, which define the groups of products analysed. The example given in text tries to show practical aspects and ways of implementation of the EU quality schemes, for Romania. The paper provides general conclusions resulted from the EU quality schemes implementations in Romania. In the same time, we identify a few difficulties regarding the expansion of the market. By present paper we open new discussions about trends in the field, future developments and models for a good standard of life.

Key words*: EU, Quality schemes, Organic products, PGI, Romania.*

JEL: *Q13, Q18*

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2 Associate professor, Ph.D., Senior researcher III, Romanian Academy - Institute of Agricultural Economics, "Casa Academiei" - Calea 13 Septembrie 13, sector 5, Bucharest, Romania, Phone: +40 72 239 81 19, E-mail: dmvoici@yahoo.com

3 Ph.D., Senior researcher II, Romanian Academy - Institute of Agricultural Economics, "Casa Academiei" - Calea 13 Septembrie 13, sector 5, Bucharest, Romania, Phone: +40 72 137 91 20, E-mail: coraalboiu@yahoo.com

Introduction

This paper aims to identify the market potential for products produced, processed and traded according to the EU quality schemes, represented by organic products, protected designation of origin (PDO), protected geographical indication (PGI) and traditional speciality guaranteed (TSG), in Romania.

First, the paper provides an overview about institutional and policy framework: legislation, institutions dealing with these, associations of producers, rules, assistance, funding, aim of policy concerning organic product and patterns in development of organic cultivated area and similar developments.

Second, the paper provides details about market developments of organic products and PGI products.

The hypothesis we have in view for the elaboration of the present study clearly put in evidence the importance of the products mentioned above both for producers and consumers. The business in this field has double advantage, for both sides. In the same time, we would like to envisage that, the increase of the visibility of the products has a decisive role and it can direct influence the increase of the incomes for producers.

We divided the paper in two main parts: one focus on organic products and one on PGI products. For each part, we tried to cover demand, supply, trade and challenging issues. Demand covers overall trends and attitude toward the mentioned products, expenditures in the last years, category of consumers who primarily buy them, which products are mostly bought, where, in kind of markets such as spot market, super market and similar. Supply side covers producers and their developments in production such as enterprises/ farms, their number, which part of agricultural farms or enterprises, cultivated area, size, and development in the last years. In addition, it covers trade volume in total, at the national markets, intra- or extra- EU sales, problems related to production and trade of the products, and investment in research concerning ecological cultivation.

Theoretical background

Organic foods are foods that are produced using methods of organic farming – with limited modern synthetic inputs such as synthetic pesticides and chemical fertilizers. Organic foods are also not processed using industrial solvents, or chemical food additives.

Three European Union schemes of geographical indications and traditional specialities, known as protected designation of origin (PDO), protected geographical indication (PGI), and traditional specialties guaranteed (TSG), promote and protect names of quality agricultural products and foodstuffs.[4] They are based on the legal framework provided by the EU Regulation No 1151/2012 of the European Parliament and of the Council of 21 November 2012 on quality schemes for agricultural products and foodstuffs.[5] This

4 http://ec.europa.eu/agriculture/quality/schemes/index_en.htm

5 http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:343:0001:0029:en

Regulation (enforced within the EU and being gradually expanded internationally via bilateral agreements between the EU and non-EU countries) ensures that only products genuinely originating in that region are allowed to be identified as such in commerce. The purpose of the law is to protect the reputation of the regional foods, promote rural and agricultural activity, help producers obtain a premium price for their authentic products, and eliminate the unfair competition and misleading of consumers by non-genuine products, which may be of inferior quality or of different flavour.

The protected geographical indication (PGI) is the name of an area, a specific place or, in exceptional cases, the name of a country, used as a description of an agricultural product or a foodstuff. The products must be characterised by:

- comes from such an area, place or country,
- has a specific quality, goodwill or other characteristic property, attributable to its geographical origin,
- whose production, processing or preparation takes place within the determined geographical area.

In other words, to receive the PGI status, the entire product must be traditionally and at least partially manufactured (prepared, processed or produced) within the specific region and thus to acquire unique properties.

The paper evaluates and discusses all the concepts mentioned above, the policies in the field and tendencies observed during the last years.

Methodology

For the analysis, we use long time series data based on statistical data provided by the National Institute of Statistics of Romania, the Ministry of Agriculture and various publications in this field. We split the analysis of organic products in two distinct periods: the market before European Union (EU) accession and the market after EU accession. At the end of the paper we give practical examples of PGI in Romania. Last but not least, we want to mention that we use the partial results from the FP7 Project COMPETE (International comparisons of product supply chains in the agro-food sectors: determinants of their competitiveness and performance on EU and international markets), leaded by IAMO (Halle/Saale-Germania), which started in 2012 and lasts three years (www.compete-project.eu), (Alboiu et al., 2014). The project is the result of the cooperation of the consortium established and comprises sixteen institutions from ten countries, financed by European Communities and co-financed by National Ministry of Education. The Institute of Agricultural Economics-Romanian Academy is partner in this consortium.

Legal framework

At national level, together with the signing up of the Association Agreement and the initiation of the EU accession negotiations – Romania's legislation had to get in line with

the EU legislation. Following this process, at present, Romania's legislation complies with EU requirements and orientations.

The legal basis of the organic farming system was established in the 1990s by the Commission Regulation (EC) no. 2092/1991 regarding organic farm production and the indications for their presentation as agricultural and agri-food products.

The main normative acts produced for organic products market are: Government's Emergency Ordinance (OUG) no. 34/2000 on the organic agri-food products, approved by Law no. 38/2000; Government's Decision (HG) no. 917/2001, for the approval of the Methodological Norms for the application of provisions from OUG no. 34/2000 regarding the organic agri-food products; The Joint Order no. 417/2002 and no. 110/2002 of the Minister of Agriculture and of the President of the National Authority for Consumers' Protection; Order no. 70/2002 of the Minister of Agriculture on the establishment of the Commission for Organic Farming Development in Romania; Order no. 527/2003 of the Minister of the Agriculture for the approval of the Rules on the inspection and certification system and the accrediting conditions for the inspection and certification bodies in organic farming; Order no. 721/2003, of the Minister of the Agriculture for the approval of Rules on the import and export of organic agri-food products; Order no. 153/2006 regarding the approval of the competency of the Commission for accrediting the inspection and the certification bodies in the organic farming sector, which inspects and controls the operators on Romania's territory; Order no. 317/2006 regarding the modification and completion of the Annex to the Order of the Ministry of Agriculture and of the President of the National Authority for Consumers' Protection no. 417/110/2002, for the approval of the Specific labelling rules for the organic agri-food products; OUG no. 62/2006 for the modification and completion of OUG no. 34/2000 on the organic agri-food products; Law no. 513/2006 on the approval of OUG no. 62/2006 for the modification and completion of OUG no. 34/2000 regarding the organic agri-food products; Order no. 219/2007 on the approval of Rules regarding the organic farmers' official registration. All these provide information, rules and norms necessary in this field like: the authority responsible for organic farming; the general rules and principles of organic production; the duration of the conversion period; the inspection and certification system; the list of accepted products to be used by the organic farming practice; the list of ingredients and processing methods that can be used in the preparation of organic foodstuffs; sanctions etc.

The legal framework for EU quality schemes is provided by the EU Regulation No 1151/2012 of the European Parliament and of the Council of 21 November 2012 on quality schemes for agricultural products and foodstuffs.

In Romania, the legal frame comprises: MADR Order no. 690/2004 for the approval of the conditions and criteria for certifying traditional products; HG no. 828/2007, establishing a system for the protection of geography indications and designations of origin for agricultural products and foodstuffs; HG no. 134/2008 on the traditional specialties guaranteed for agricultural products and foodstuffs; MADR Order No.160/2008 - Procedure for registration and documentation for obtaining protection of traditional specialties guaranteed, procedure declaration of opposition nationally and procedure for submission to the European Commission

of the application for registration of traditional specialty guaranteed in order to gain protection in the European Union, as well as specific rules about design and use of national logo.

Policy and institutional framework

In Romania, the government, the civil society and the business environment are becoming increasingly aware of the need to promote organic farming.

The governmental policy on organic market is elaborated and coordinated by Ministry of Agriculture and Rural Development (MADR), under which the Office of the National Authority for Organic Products (ANPE) is operating, which is the authority in charge of the organic farming sector. ANPE is collaborating (or collaborated) with different agencies, education and research institutions, foundations, among which we can list the following:

- The National Agency For Agriculture Consultancy – ANCA (no longer exist nowadays);
- The Academy of Agricultural and Forestry Sciences – ASAS;
- Higher education institutions, agricultural research institutes and stations;
- The National Organic Farming Federation, whose activity is based on the "sustainable development principle", a development type which should not disable the next generations' access to a clean environment.

The Ministry of Agriculture establishes an action plan for the development of the domestic market of organic products, which includes:

- The intensification of actions promoting the organic farming concept;
- The improvement of information on organic farming practice, and the qualification of the participants in this sector;
- The increase of areas under the experimental modules "organic micro-farms";
- The delimitation of organic farming areas;
- Support to farmers during the conversion period;
- The creation of an information system accessible to farmers.

The organic market in Romania is a relatively new market, with continues changes in terms of institutions and policies elaborated. This is the reason why are necessary deeper analysis on results and tendencies in the field.

As organic farming contributes to sustainable development, through an increase of biodiversity, soil fertility and environmental protection, the organic farmers are supported through the agro-environmental programs of the European Commission (EC). Thus, starting with 2007, the year of Romanian accession into EU, organic farmers benefit from a compensatory premium per hectare (and by crops), in order to make up for the income losses incurred during the conversion period and for the certified production, through the National Rural Development National Plan (PNDR) – Axis 2 – the agro-environmental sub-measure, from the European Agricultural Fund for Rural Development (EAFRD), non-refundable support in conformity with the Commission Regulation (EC) no. 1698/2005.

At the same time, EU provides support for the promotion of organic products, through co-financing programs, with a 50% funding from the EC, 20% from professional organization, and 30% from the state budget, in conformity with the procedure of the Commission Regulation (EC) no. 1071/2005.

As regards the quality schemes, we would like to mention that the quality policy is one of the 16 sub-community policies on agriculture.

At national level, the quality schemes implementation is realised by MADR and its specialised institutions. Among them, we mention the National Office of Romanian Traditional and Ecological Products. It is a public institution with legal personality under MADR, financed from the state budget. As a specialized public institution, provides[6]:

- promoting the concept of "product quality" and "green products";
- technical assistance to producers/processors in developing documentation under Community and national legislation to require PGI, PDO and TSG Romanian agricultural products or foodstuffs at national and EU level;
- technical assistance in developing projects to promote Romanian traditional and organic products;
- promoting the image of Romanian traditional and organic products;
- verification of compliance documentation designed to require the protection of designations of origin for agricultural products and foodstuffs Romanian national and Community provisions and national legislation;
- dissemination of national and Community provisions on Romanian traditional and organic products among farmers and processors;
- seminars, courses and training and information for the group of producers or processors, farmers associations.

Organic market organization

At the beginning of the year 2007, the following organizations were registered at MADR, with attributes or concerns in organic farming, rural development, environment protection and sustainable development (Voicilas, 2007b): The Association for ecological agriculture "agri-eco", with the headquarters in Cluj Napoca, the professional Organization „Agroecologia" – Cluj Napoca, the Association of the bio-farmers in Romania „BIOTERRA" – Cluj' county, the Romanian Association for Sustainable Agriculture – Călăraşi County, the Association „Terra Verde" – Bucharest, the Association of the Bio-poultry breeders in Romania – BIOAVIROM – Ilfov County, the Association for the organic farming development in Romania, "Ecofocus" – Bucharest, Ecorural – Bucharest, the Association for the Environmental Protection and ecological agriculture „TER" – Bucharest, the Foundation „Mama Terra" – Bucharest, „The National Association of the Agricultural Consultants" – Bucharest, the Academic Foundation for Rural Progress

6 Oficiul National al Produselor Traditionale si Ecologice Romanesti (National Office for Traditional and Organic Romanian Products), http://www.onpterbv.ro/

„TERRA NOSTRA" – Iaşi, „The Ecologist Society in Maramureş" – Baia Mare, „The Foundation for Rural Development in Romania" – Bucharest, „The Ecological Group for Cooperation Bucovina" – Suceava, the Foundation „Business School Mehedinți" – Drobeta Turnu Severin, the Society „Avram Iancu" – Cluj Napoca, the Foundation „The Operation Romanian Villages" – Bacău county, „The Ecological Club Transylvania" – Cluj Napoca, „The Romanian Rural Foundation" – Timişoara, „Bioclub Cluj" – Cluj Napoca, „the Group of Gardeners Biodynamics" – Târgu Mureş, „the Romanian Association for Applied Biofarming" – Arad county, „the Centre for Ecological Consulting Galați" – Galați, „the Association for Environmental and Nature Protection" – Târgu Mureş, the Foundation „Divers Eco" – Maramureş county, the Foundation „Noema Consulting" – Cluj Napoca, the Association „Albina" (the „Bee") – Bucharest, the Association for Environment Protection and Preservation of Resources – Bucharest.

In Annex 1, we present the list of the organizations in organic agriculture, rural development, environmental protection, and durable development, at the end of 2012.

Organic operators (farmers) were registered at MADR and classified by three large categories of products: crop, livestock and beehive products. The farmers are organized either as independent producers, physical entities, or as family associations or commercial companies as legal entities under the form of limited liability companies or joint stock companies. Not all the counties are included in this evidence. Most organic farmers are from a few counties: Suceava (North), Mureş and Sibiu (Centre), Tulcea and Constanța (South-Est).

Supply of organic products in Romania

The data provided by MADR reveal the increasingly importance of this activity sector for the domestic producers. The positive evolutions of the areas and production in the organic farming sector prove the existing potential, initiative, development prospects and increasing demand from the consumers' part.

In the tables 1, 2 and 3 we present the dynamic of the field, which proves the above statements.

Table 1. Areas under organic farming system before EU accession (2000-2006)

Specification	Yearly Index						2006
	2000	2001	2002	2003	2004	2005	
Total area, out of which:	100 (17,438 ha)	1.65	2.51	3.28	4.23	6.33	8.20
Cereals	100 (4,000 ha)	2.00	3.00	4.00	5.12	5.52	4.08
Pastures and fodder crops	100 (9,300 ha)	1.51	2.15	2.58	3.37	4.55	5.51
Oilseeds and protein crops	100 (4,000 ha)	1.58	2.50	3.90	5.02	5.65	5.97
Vegetables	100 (38 ha)	2.63	18.40	5.26	7.89	11.58	18.95
Fruits (sour/cherries, apples)	-	-	100 (50 ha)	2.00	4.00	8.64	5.84
Spontaneous flora collection	100 (50 ha)	2.00	6.00	8.00	10.00	352.60	774.00
Other crops	100 (50 ha)	6.00	16.00	18.00	18.00	97.68	242.00

Source: Own calculation based on MADR and INS (National Institute of Statistics) data.

Land areas (Table 1) increased in the mentioned period. The trend is increasing and the perception of these crops as an alternative activity and income source is positive (Voicilas, 2007a). Comparing the objectives established by the government's strategy with the field results, we could say that the objectives were reached; the bases were created for the development of this activity and for the use of the market niches, both on the domestic and world markets.

As in the case of land areas, productions (Table 2) continuously increased in the investigated period. Although the production levels were much higher at the moment of accession into EU than those obtained 5-6 years before, the domestic supply cannot totally meet the demand, which makes it possible for the imported organic products to penetrate the Romanian market, as we shall see later on (Voicilas, 2007a). For instance, total crop production increased by 12 times, oilseeds and protein crops by 13 times, vegetables by 14 times. In the same time, an incredible grow had spontaneous flora collection with almost 125 times.

Table 2. Organic farm production before EU accession (2000-2006)

Specification	Yearly Index						2006
	2000	2001	2002	2003	2004	2005	
Total crop production, out of which:	100 (13,502 to)	1.81	2.39	2.25	6.46	9.77	12.34
-Cereals, out of which:	100 (7,200 to)	1.74	2.22	2.00	5.69	7.64	6.73
Export	-	-	-	-	100 (7,100 to)	1.56	2.55
-Oilseeds and protein crops, out of which:	100 (5,500 to)	1.31	2.00	2.27	6.73	8.29	13.29
Export	-	-	-	-	100 (9,800 to)	1.23	2.26
-Vegetables	100 (600 to)	6.67	6.67	3.33	5.00	12.00	14.51
-Fruits (sour cherries, cherries)	-	-	100 (200 to)	1.50	2.50	5.00	1.70
-Spontaneous flora collection, out of which:	100 (200 to)	2.00	1.50	1.60	22.50	83.74	124.81
Export	-	-	-	-	100 (3800 to)	3.74	-
-Other crops	100 (2 to)	150.00	400.00	450.00	600.00	3175.00	5520.50

Source: Own calculations based on MADR and INS database

In the Table 3, we present the evolution of the organic agriculture in last years, after the accession into EU.

Table 3. Areas and producers in organic agriculture after EU accession (2007-2012)

Indicator	2007	2008	2009	2010	2011	2012
No. of farmers	3834	4191	3228	3155	9703	26736**
Area in arable area (ha)	65112.0	86454.0	110014.4	148033.5	151109.0*	164936.9
Area - permanent crops of pastures and fodder (ha)	57600.0	46006.5	39232.8	31579.1	78198.0	105835.6
Area - permanent crops of orchards and grapevine (ha)	954.0	1518.0	1869.4	3093.0	4166.0	9430.0
Spontaneous flora collection (ha)	58728.0	81279.0	88883.4	77294.4	80120.0*	1088641.3

Note: * = estimations; ** = producers, processors, traders, importers, exporters
Source: MADR database – County Agricultural Departments (www.madr.ro)

According to the last data from MADR, in 2012 the areas under organic agriculture increased fantastic, due to the facilities accorded by the ministry and the EU funds at the producers' disposal, on one side and on the other side due to change of the classification of organic producers (this was mainly due to the existing support measures for the period conversion granted under art. 68 of Regulation (EC) laying nr.73/2009 common rules for direct support schemes for farmers under the common agricultural policy and establishing certain support schemes for farmers). In the same time, there are estimations that the number of organic operators increased in the same way, nowadays being over 10.000, at the level of 2011[7] and over 26.000[8], at the level of 2012.

Demand and trade of organic products in Romania

Following the presentation of these statistical data, the organic farming could be considered as a dynamic sector in Romania (Voicilas, 2007b), with an increasing trend in recent years. As a result, the organization of the marketing (www.agricultura-ecologica.ro) of the organic products is an increasingly important element in this sector. The sale of organic products can take place directly from the farm, or through the traders registered at MADR. The organic products are found both in the large store network and in the small-specialized shops.

On Romanian market, organic product range is quite limited. On national market, in 2011, were sold: vegetables and fruits produced, processed fruits and vegetables, herbal teas, bread, pasta, flour products, processed cow and sheep milk (butter, feta cheese), eggs, oil, wine made from grapes certified organic, processed soy products, honey, etc. Most food is brought from abroad (canned vegetables, fruits, bread). Bestsellers organic products are milk, eggs, yogurts, fruits, vegetables, and meats.

Immediately after joining the EU, total sales of organic products in Romania reached about 10 million, which represents less than 1% of the retail market and very little compared to 5-6%, as is the European average (2008). At present, the estimations of total sales of organic products, made by MADR are double.

The organic products are found both in the large store network and in the small-specialized shops. At the beginning of the year 2007, only two shop networks were registered at MADR: the shop "BIOCOOP" (Sibiu) and the shop Naturalia (www.naturalia.ro), with units both in Bucharest and in the county Ilfov (Voluntari). After one year, there were 6 shops. At the end of 2012 there are already 25 shops registered.

Except for the processors that have their own presentation shops, not all shops respect the storage/handling/presentation rules for organic products. The organic products are found in the same place with the conventional products; they are handled and stored together. In different studies (e.g. Expert Group study, 2007), the authors show that, on the domestic market there is confusion between "natural product" and "organic product" (most often

7 www.eco-ferma.ro/performantele-agriculturii-ecologice/

8 http://old.madr.ro/biofach2013/Anexa_sector_ecologic_romana.pdf

maintained by the producers of the former), which makes it more difficult to promote an organic product under the conditions of the price difference.

The sale on the domestic market is through the wholesale networks Metro, Selgros mainly by retail shops. The main stores that introduced organic products in their assortment of goods are: Carrefour, Cora, Gima, La Fourmi, Mega Image, Nic, Primavera and OK.

An important role in market promotion and obtaining new market shares and segments of consumers is represented by the marketing activity. The presentation of products, the beneficial effects upon the human body, the gains obtained by buying clean and healthy products, even though they are more expensive than the conventional products, as well as consumers growing aware of their importance, are the main concerns that the producers and sellers of organic products should have in their development policy. The participation in exhibitions, fairs and other national and international manifestations is a modality to present the organic products and to establish new contacts for marketing these products. It is only a promotion modality among several possibilities, with a special impact upon consumers.

The fact that the organic products have a market in Romania is proved by imports, which are doubling almost every year. In 2007, the market of organic products was estimated at 2.5 mil EUR (1 mil EUR more than in 2006, before accession). At that time, about 70% from the organic products on the market were from import. Meantime, the imports decreased and at the end of 2010 the exports were about 150 mil. Euro and imports were about 35 mil. Euro (Eco Ferma, 2014, www.eco-ferma.ro/performantele-agriculturii-ecologice/).

Previous analysis reveal that, in the period 2006-2007 only 30% of the organic production was sold on the domestic market and the rest was exported (Expert Group study, 2007). The main organic products sold through the organized commercial network were eggs and dairy products. In comparison, in 2012 a percentage of approximately 70-80% of organic products was exported.

The Romanian organic products are mainly exported to Western Europe (Germany, Italy, Switzerland and Netherlands for example) and attempts are being made to penetrate the US market. The wild berries, either organic or non-organic, have a much higher export price, and the price is even higher if these are organically certified. Main exported products are: cereals, oilseeds and protein, berries, herbs, honey and sheep cheese.

Trends and key issues on Romanian market

The reaching of the export targets is linked to other objectives as well (on the short, medium and long-term), which can contribute to the improvement of the competitiveness of the Romanian organic sector in the next period:

- The increase in the number of operators in this sector, receiving financial support from the Romanian Government Programs;
- Increase of the role of the non-governmental organizations (NGOs) in this sector through programs for the development of trade with organic products;

- Increase in the number of exporters who are actively involved in programs for organic agricultural trade development in the less-favoured areas;
- Support provided to organic commercial farms, so as to be more active on the market;
- The association of the small organic farmers so as to co-operate in the marketing of organic products;
- The increase in the number of municipal and regional organizations directly involved in the implementation of the National Export Strategy in its initial stage;
- The increase in the number of local processing units and foreign direct investment projects;
- The increase of investments in related activities in rural areas;
- The increase in the number of employees in the exporting units which are implementing the organic farming regulations;
- The increase of investments in the activities related to exportable organic products from the less developed rural areas;
- The increase of the organic farm output;
- The increase in the number of new companies involved in export activities with primary and processed organic agricultural products;
- The increase in the number of optimal operation modules by the association of crop and livestock farms;
- The development of processing capacities for the organic farming sector;
- Capacity improvement in terms of products and value added;
- The development of services oriented towards the export of organic products;
- The diversification of the exportable cultivated species (for example: vegetables, fruits) and of the range of processed products (e.g: bakery and pastry products);
- Increase in the number of new approved investment projects.

Unfortunately, not all the producers are satisfied with the evolution of this market and with the government's involvement in the activity to support organic farming. In the opinion of some farmers who had initiatives in this field, organic agriculture became a non-efficient business in Romania, not because the outlet is not large enough, but rather because the government has not shown interest in this activity so far; on the other hand, this activity was given as an example of opportunity to conquer the foreign markets. The lack of financial support from the state, in addition to the extreme weather phenomena in the last years, is the main factor which determines the producers to think giving up their business. In many reports made by the producers or in the communications at the scientific events organized by them, it is mentioned that farmers are confronted with the problem of higher production costs as well as with the problem of products distribution.

The problem of the ratio of the production cost to the price of the product is not the only problem for organic farmers. The consumer is interested more in the price than in the quality of the product, and this constrains the development of the sector.

As always happens in such conflicts, on the other side, of the state institutions, the announcements are optimistic, satisfactory, and even praiseworthy. All governmental statements and the official documents show the favourable evolution of this sector and government's active implication in its development. For example, the documents elaborated by Romania's Government in the last years regarding the strategy in this field in the future, comprise concrete references on the next steps and have clearly identified objectives. We can easily remember what was stated in the past, before accession: Romania has great opportunities for promoting and developing organic farming due to its large agricultural land area, i.e. 14.9 mil ha and its non-polluted soils; the increase of organic farmers' participation to the economic events in the country and abroad (BioFach, 2006). By the examination of the valoric chain and of the consumers' requirements on the world market, the following critical success factors could be identified: price, assortments, package, branding, and availability.

Quality schemes in Romania: PGI case study for "Magiun Topoloveni"

"Topoloveni" plum jam certification has protected geographical indication (PGI) in Europe since 8 April 2011, the first award of its kind received by a Romanian traditional product. "Topoloveni" natural plum jam is produced according to a recipe kept from 1914. The product holds the title of Supplier of HM Royal House of Romania. It is still the only PGI in Romania.

For Romania, the European Commission approved a program to promote agricultural products in Switzerland, Norway and the Russian Federation, worth a total of approximately 4.2 million, of which the relevant part of Romania is 981.613 Euro. The program is run by the manufacturer jam "Topoloveni" - SC Sonimpex Topoloveni Ltd, together with a consortium of producers in Greece.

Leads the way, an example to be followed - "Magiun Topoloveni", plump jam, represents the Romanian first product certified by the EU and now the first to be accepted by the EU for promotion. In an interview with the representatives of the company many complains could be recorded regarding the abusive clauses in the contracts with the retails chains, such as for example Cora hypermarkets. "If the stock of "Topoloveni" jam ends, then, the hypermarket can take other product and I have to pay for the product listing" said the company's representative, referring to the clause in the contract proposed by the hypermarket network. At the same time the representative of the company explained that the company's product is a traditional geographical indication, recorded at OSIM (National Mark Registration Office) and recognized in the EU, so it can not be replaced with any type of product. In the opinion of the owners of "Topoloveni" jam, traditional product should be untouchable. "You can not make its mark on traditional product", said the representatives of the company, adding that in some countries hypermarkets are obliged to purchase traditional products.

The representative of the Inter-professional organization in the fruits and vegetable sector Romconserv, said in his turn that the producers of canned fruits and vegetables are required by some retailers to ensure continuity of stock in the shop for a year.

On the other hand, in Romania there are many manufacturers who agreed to sell their products under private brand retails to major retailers. "We are small producers who agreed to produce inferior quality merchandise under the mark/label of big retailers. Already the traditional brands are disappearing. "Future generations will not know how to speak Romanian," said the representative of "Topoloveni" jam producer referring to the name of foreign products. In response, supermarket representatives said that the clause referred the representative of "Topoloveni Magiun" is standard between a distributor and a manufacturer and the honouring of delivery orders by the producer, so the shelves will not be empty. "The reason for the failure to reach a trade agreement on "Topoloveni" jam is called the producer purchase price that would be transformed into a product too expensive for the hypermarket clients," added the hypermarket network representative. On the other side it should not be neglected that PGI products like organic products are meant for a selective client thus the hypermarket argument cannot be sustained and prevails consumers from having the chance to choose their preferred products even on a temporary basis.

Similar disagreements can be noticed also between "Topoloveni" jam manufacturer and other retail network, a discounter (Lidl) who has own brand of "jam" which it seems does not meet technological standards available in Romania and European regulations and it is sold at dumping prices.

Conclusions

We can say that, two factors are adjudged to be responsible for consumer demand to be concentrated in the most affluent countries of the world. The price premium of organic products restricts demand to countries where consumers have high purchasing power. This explains why most sales are in countries where there is a sizeable middle-class in the population. The second factor is education and more specifically awareness of organic products. As consumers become more educated and informed of food issues, they are more inclined to buy organic products whether it is because of factors like food safety, concern for the environment, or health reasons.

As production of organic crops increases across the globe, regional markets are also expected to develop in which organic farmers will produce organic products for consumers in their region. This is expected to stimulate sales of organic products in many developing countries, especially in countries like Brazil, China, India, and South Africa where economic development is increasing at a rapid rate and a more educated and affluent middle-class of consumers is developing (Willer, Yussefi, 2004).

The main conclusions resulted from this analysis, as regards the ways which can contribute to the improvement of the competitiveness of the Romanian organic sector in the next period, considered an important niche market, are, as follows: the increase of the number of operators in this sector, receiving financial support from the Romanian Government Programs; the association of the small organic farmers so as to co-operate in the marketing of organic products; an increase in the number of municipal and regional organizations directly involved in the implementation of the National Export Strategy in its initial stage; an increase

in the number of foreign direct investment projects and investments in related activities in the rural area; an increase and diversification of the organic farm output; capacity improvement in terms of products and value added; the development of services.

We can conclude that, even if there are countries in EU with traditions in the field, which has a rich experience and many registered products like Italy, Spain or Hungary, even if the theory and the businessmen accept that the products are important for producers and consumers in the same time, in Romanian reality all these aspects are not present and cannot be verify. The main reasons of this fact are: the lack of initiative from producers, weak communication with the authorities/institutions, a weak organization of producers and lack of perception of their advantages from the business and maybe, the big volume of work necessary to fulfil the legal requirements.

The findings on organic food markets and the EU quality schemes applied in Romania are also important for further research, but we must underline that, there is still little information available with respect to the PDO/PGI/TSG products, even in other EU countries and this represents the main barrier.

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Annex

Table 4. Romanian organizations in organic agriculture, rural development, environmental protection, and durable development (2012)

Name of Organization	Location/web
Federația Națională de Agricultură Ecologică	Cluj/www.fnae.ro
Organizația profesională „Agroecologia”	Cluj/www.agroecologia.ro
Asociația bioagricultorilor din România „BIOTERRA”	Cluj/www.greenagenda.org/bioterra
Asociația Română pentru Agricultură Durabilă	Călăraşi/www.agriculturadurabila.ro
Asociatia operatorilor din agricultura ecologica BIO ROMANIA	Calarasi/www.asociatiabioromania.ro
Asociația Bioavicultorilor din România – BIOAVIROM	Ilfov/www.bioavirom.ro
Societatea pentru o Agricultură Ecologică	Cluj
Asociația de Protecția mediului şi agricultură ecologică „TER”	Bucureşti/www.ter.ro
Fundația „Mama Terra”	Bucureşti
„Asociația Națională a Consultanților din Agricultură”	Bucureşti
Fundația Academică pentru Progres Rural „TERRA NOSTRA”	Iaşi
„Societatea ecologistă din Maramureş”	Maramureş
„Grupul Ecologic de Colaborare Bucovina”	Suceava
Societatea „Avram Iancu”	Cluj
Fundația „Operațiunea satelor românești”	Bacău
„Clubul Ecologic Transilvania”	Cluj
„Fundația Rurala România”	Timiş
„Bioclub Cluj”	Cluj
„Grupul Grădinarilor Biodinamici”	Mureş
„Asociația Romana de Bioagricultura Aplicată”	Arad
„Centrul de Consultanță Ecologică Galați”	Galați
„Asociația pentru Protecția Mediului si a Naturii”	Mureş
Fundația „Divers Eco”	Maramureş
Fundația „Noema Consulting”	Cluj
Asociația Albina	Bucureşti/http://www.ere-concept.com
Asociația pentru Protecția Mediului şi Prezervarea Resurselor	
Asociația „Terra Verde”	Bucureşti
Asociatia Romano-Italiana AgriEcològica	
Asociatia Romana de Bioagricultura Aplicativa – Ferma Ecologica Familiala	Arad
Asociatia EcoLogic	Maramureş
Asociatia bioagricultorilor din Moldova„BIOMOLD”	Bacau

Source: MADR (Romania)

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RESEARCH ON READINESS FOR JOB CREATION THROUGH ONE'S OWN AGRIBUSINESS STARTUP

Boško Vojnović,[1] Vidoje Stefanović,[2] Dragana Vojnović[3], Milorad Perović[4]

Summary

This paper examines the problems of jobs, employment, staff hiring in the agri-industrial complex, job description and requirements, theoretical and practical job cost indicators, and the willingness of our people to create new jobs by starting up their own private agribusiness.

The results indicate a chronic lack of private funds necessary for every new business as well as the inevitability of borrowing. Potential entrepreneurs know the advantages and the disadvantages of solo and partnership business; however, they do not have any potential partners in sight. Almost a half of them have their own facilities and arable land etc. as a material base; however, they do not know what else is needed for a business to operate properly. In general, they understand the importance of education and training for any future business.

Key words: *self-employment, agriculture, one's own business, job, agribusiness*

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Introduction

Unemployment is becoming a pressing issue in both Serbia and Europe. The phrase "right to work" emerges as a moral and political demand with the labour movement of the 18th century during the capitalist mode of production which, on one hand, brought about new production power and wealth, and on the other hand, unemployment and poverty. Considering the present moment and the immense need for new jobs we have attempted to explore the possibilities of creating a private agribusiness. We have examined the problems

1 Boško Vojnović, Ph.D, Associate Professor, Higher School of Agriculture, Vojvode Putnika 56, 15000 Šabac, Serbia, Phone: +381 62 675 966, E-mail: bosko_v@open.telekom.rs

2 Vidoje Stefanović, Ph.D, Full Professor, Faculty of Science, Višegradska street 33, University of Nis, 18000 Niš, Serbia, Phone: +381 63 10 12 468, E-mail: widojes@yahoo.com

3 Dragana Vojnović, DMR, Trg Heroja 24, 11420 Smederevska Palanka, Serbia, Phone: +381 63 868 45 62, E-mail: bosko_v@open.telekom.rs

4 Milorad Perović, M.Sc., HE Đerdap, Pop Stojanova Street no. 2a, 11000 Belgrade, Serbia, Phone: +381 11 381 10 182, +381 63 200 182, E-mail: milorad.perovic@djerdap.rs

of hiring people in agriculture, economical and theoretical costs of jobs and our willingness to start up an agribusiness. Having in mind the unemployment rate in the Republic of Serbia this research is of great importance. According to the National Employment Service there are more than 800.000 unemployed waiting for a job. The actual number is probably even higher. Roughly the same number of people work in the public sector which is a huge burden for the economy, while there are only about million people working in the real sector. Therefore, a conclusion may be drawn that the only way to find a job is by self-employment. Therefore, we conducted a practical study on a sample of people situated in the following boroughs: Šabac, Ruma, Subotica, Novi Sad, Bogatić, Loznica, and for a smaller part in Belgrade. The research encompassed the wider area of Macvanski County because in that area, people traditionally work in the agricultural production. Also, the survey results may be relevant for other agricultural counties in the Republic of Serbia.

Methodology

The method used was interview and the sample was random. The research focused on the cities the interviewers live in. The interviews were carried out by the first year professors and students of the department for specialized studies at the School of Agriculture in Šabac as a part of the course „Outlines of Agri-management" in late 2010 and early 2011. The interview included all the criteria we held important for the insight in the willingness for any new agribusiness enterprise.

A working hypothesis: the basic hypothesis is to find out whether (or not) people in Serbia are ready to start their own agribusiness. In this case, the problem of unemployment is clearly set, as the other one related to certain elements. Money, partners, buyers, suppliers, equipment, legal regulation was some of the more important criteria.

The processing of survey results is related to certain thematic fields linked with the hypothesis.

The interview questions were inspired by the test (How to start, run and stay in business) or *Are You Ready to Start Your Business*? The original authors are G. Kishel and P. Kishel (Kishel, Kishel, 1993). The questions are substantially modified to suit the needs of the research in the field of agriculture. The practical results are organized in tables.

Unemployment and staff hiring for the agricultural complex

Employment defines the situation where a society member capable of work performs a certain beneficial activity independently or with others which in return provide him/her the means they use to satisfy their own needs and obligations (Vojnovic et al., 2013).

Employment is simultaneously a component of economic development and an indicator of the present level of economic development and it represents one of the constant and primary goals. When considering the problem of unemployment, besides the present level of economic development, one should take into account the specific characteristics of the country or the industry and the period in question. The base for any kind of employment represents the opportunity for work and it is twofold:

- the capable and those who want to work have their own business or,
- the access to an existing organized business.

The former or private business has the advantage when considering the economy circumstances related to the employment possibilities in some „state agribusiness".

It is no longer disputed that the efficiency of modern development in general, and agribusiness in particular cannot be based only on the material components, but more than ever on the entrepreneurial. The problem of staff hiring in the agri-industrial complex started in the 50s of the last century when good farmers were transformed into bad industrial workers. Many of them were left with one foot in the countryside. That gave rise to many controversial ideas that these so-called „halvings" were more useful to industrial development, and less harmful to the development of the agri-industrial. For the period from 2005 to 2009 the agri-industrial sector recorded an annual production growth of about 1,1% unlike the total industrial production that recorded a decrease of about 0,4% annually. In 2009 the annual agri-industrial production decline in Serbia was 7,4%, while the total decline in industrial production was a bit severe 12% (Nikolic et al., 2010).

When considering the problems of staff hiring for the agricultural complex, we have to emphasize that the problems are prominent and that should raise concern. For the interest of potential candidates for agribusiness to be at least similar to the interest for other industries, we have to create the conditions that would keep the young in rural areas. The study also provides information on the role of agribusiness employment in rural areas. *The Role of Agribusiness in Maintenance of Future Rural Employment in Latvia* (Krievina et al., 2013).

The entrepreneurial development in rural areas has a vast untapped potential for the economic strength of these areas and offers a real chance to increase employment of the local population, which generally find jobs harder. The very diversification of the rural life is a breath of fresh air because it sparks interest in people to remain in the countryside (Cvijanovic et al., 2011).

The conditions, costs, and profitability of a newly created job are very important for the beginning of a private business. This question is a multi-layered one; thus, it is important for the employment policy, let alone the whole social and economic system (Stefanovic, 1991).

It is even more important for the agricultural sector because such changes have occurred that there is no more a distinguishable difference between the primary and the processing sector in terms of labour or capital-intensity. It has to be taken into account that, apart from the demographic component, several more components have a crucial role in increasing the overall level of employment: the costs of a new job and the available accumulations and knowledge. Besides technical and economic factors, social and political factors influence the costs of a job (Stefanovic et al., 2011).

From the standpoint of the agricultural businessman as an individual holder of a business, the costs of a job for him and his staff represent the input of material, financial and other elements at high risks to the survival of a potential entrepreneurial venture.

The employment policy in general, including the agricultural complex, should take into account an increased number of employees with university education. This process is already in a full sweep in highly developed countries (Simic et al., 2010).

Therefore, we can conclude that the employment policy in general, and especially in the agricultural complex, should not be the matter of the current trends and aspirations but a well-designed initiative of all subjects that have more or less directed the course of not only the development of the agri-industrial complex, but the overall social economic development.

Results and Discussion

Certain survey results will be presented according to thematic fields, in logical order and linked with the hypothesis

Table 1. Examinee data

Examinee data	Frequency	%
Age		
20 or under	3	2
21-30	75	47
31-40	27	17
41-50	34	21
51 and over	21	13
Gender		
Male	82	51
Female	78	49
Work experience		
No work experience	22	14
5 years or less	55	34
6-10 years	25	16
11-15 years	17	11
16-20 years	15	9
20 years or more	26	16
Education		
No education	0	-
Elementary	5	3
Secondary	66	40
Upper secondary	4	3
Post-secondary non-tertiary education	4	3
Short-cycle tertiary education	20	13
Bachelor	56	35
Master or Doctoral	5	3

Source: own research, 2011.

Most of the people interviewed in this study are of younger age. 64% of the examinees are between 20 and 40 years old, while the gender structure is more balanced. In terms of work experience, 34% has 5 years or less, 16% 6 to 10, and 16% more than 20. In terms of education 40% has secondary education, and 38% has higher education including master or doctoral education.

Table 2. The most important data about agri-entrepreneurs

Questions	Yes	%	No	%	Undecided	%
Agri-entrepreneur						
Do you think that you can run a successful agribusiness and stay in it?	83	52	42	26	35	22
Are you ready to give your best in your agribusiness, even though you haven't any guarantees it will be successful?	77	48	60	38	23	14
Have you ever worked in a business similar to the one you want to start?	61	38	95	59	4	3
Do you have any previous training in agribusiness?	36	23	123	76	1	1
Have you explored enough the business idea you wish to realize in agribusiness?	46	29	99	62	15	9

Source: own research, 2011.

52% of potential agri-entrepreneurs think they can start their own business; moreover, they think they can stay in it. They are willing to commit themselves, although the risks are high, which indicates the presence of entrepreneurial spirit among our people. Most of them do not have any experience in this line of work, no previous training nor any business idea they would like to realize in agribusiness.

Table 3. Important financial elements for starting an agribusiness

Questions	Yes	%	No	%	Undecided	%
Finances						
Do you possess any saving you would like to invest into your agribusiness?	37	23	110	69	13	**8**
Are you familiar with the amount of money you can receive in the form of loans from various financial institutions that support the development of agribusiness?	58	36	88	55	14	9
Are you aware of any sources from which you can make up for the lack of funds?	58	36	96	60	6	4
Do you assume what would be your annual salary and profits from a potential agribusiness?	36	23	92	57	32	20
Are you willing, if necessary, to live on a lower income and lower profits?	92	57	56	35	12	8
Have you contacted any bank regarding your plans in agribusiness?	18	11	137	86	5	3

Source: own research, 2011.

In this paper we have already said that a job generates costs. The interview results show that 69% of the examinees do not have any savings to start their own business. Therefore, the necessary funds must be obtained from other sources.

Moreover, 60% of them do not even know how much of the start-up capital they need nor they are familiar with any sources they can use to compensate for the lack of funds. Therefore, their monthly and annual salary is an unknown. However, they are more than

ready to live on a small income and they explain this with the fact that a small income that can improve over time is better than none. Also, they have never had any contacts with financial institutions that loan money.

Table 4. Analysis of potential partners and buyers

Questions	Yes	%	No	%	Undecided	%
Partner						
Given that you don't have enough funds and knowledge to start your agribusiness, do you have any potential partner?	56	35	86	54	18	11
Are you familiar with the advantages and disadvantages of solo and partnership business?	86	54	53	33	21	13
Have you discussed with any legal experts the legal matters related to your partnership?	29	18	126	79	5	3
Buyers						
Have you identified and segmented the market?	49	31	95	59	16	10
Is there a need for agricultural products or services that your potential business could offer?	80	49	52	33	28	18
Have you identified your future customers?	80	50	56	35	24	15
Do you understand their needs and demands?	76	47	59	37	25	16
Will your products/services be competitive in terms of price and quality?	68	42	56	35	36	23
Have you chosen an appropriate location for your business that is also acceptable to your customers?	66	41	51	32	43	27

Source: own research, 2011.

Potential entrepreneurs, who do not possess the necessary funds, have neither any potential partners nor any knowledge of the legal issues related to that and that fact should raise concern. However, they are well aware of the advantages and disadvantages of solo and partnership business.

Half of the interviewed people think that there is a real demand for agricultural products. They can identify future customers, they understand their needs and demands, but they have not identified or segmented any potential market.

Table 5. Availability of premises and equipment

Questions	Yes	%	No	%	Undecided	%
Premises						
Have you found the appropriate premises and other resources for your potential agribusiness?	86	54	53	33	21	**13**
Could you organize the offices at will without any additional expenses?	77	48	57	36	26	16
Does the building you plan to use come with any other additional conveniences (a parking lot, maintenance, security)?	58	36	88	55	14	9
Have you consulted any legal experts on the matters of leasing or purchasing any offices or buildings?	21	13	131	82	8	5

Questions	Yes	%	No	%	Undecided	%
Premises						
Have you compared the amounts of money necessary for leasing or purchasing any premises?	60	38	94	58	6	4
Equipment						
Do you know what kind of equipment is necessary for agribusiness?	52	33	99	61	**9**	**6**
Could a purchase of used equipment reduce costs?	80	50	56	35	24	15

Source: own research, 2011.

More than a half of them do not have any appropriate premises or any other resources. They haven't consulted any legal experts on the matter. In fact, they don't even know the cost to lease. The necessary material and financial assets are also unknown to them.

Table 6. Knowing the suppliers

Questions	Yes	%	No	%	Undecided	%
Suppliers						
Do you know what supplies are necessary for your agribusiness to be successful?	62	33	73	45	25	16
Do you know the amount of stock necessary for the beginning of your agri-entrepreneurial venture?	51	32	84	52	25	16
Have you identified and defined suppliers depending on whether their prices are affordable or not?	46	29	100	62	14	9
Is there any difference in prices depending on whether you pay in cash or with a delay period?	53	33	99	62	8	5

Source: own research, 2011.

What encourages is the fact that the examinees can identify and define potential suppliers and that they are aware of the benefits of paying in cash as opposed to delayed payments.

Table 7. Administration and payment system

Questions	Yes	%	No	%	Undecided	%
Administration and payment system						
Have you chosen an appropriate system of recording income, expenses, assets and liabilities?	53	33	98	61	9	6
Have you chosen a system of keeping track the stock and maintaining it on an optimal level?	50	31	101	63	9	6
Are you familiar with the methodology of tax and fee calculation?	63	39	86	54	11	7
Do you know which financial statements you must prepare?	62	39	84	52	14	9
Do you know how to interpret and use financial statements?	68	43	83	51	9	6

Source: own research, 2011.

In this section, majority of questioners said that they have not decided on a system for recording the income, or the system for keeping track of the stock. Also, most of them are

not familiar with the methodology for calculating taxes, or which financial statements to prepare and most of the, do not know how to interpret financial statements.

Table 8. Knowing legislation

Questions	Yes	%	No	%	Undecided	%
Legislation						
Do you know what licenses and permits you need to start any potential agribusiness?	40	25	106	66	14	9
Are you familiar with the legislation in the area of agribusiness?	42	26	103	65	15	9
Do you know any experts that could advise you on the legal matters?	87	54	62	39	11	7
Have you opted for any insurance company?	26	16	127	80	7	4

Source: own research, 2011.

Most of them, 66% actually, know what permits are required for a potential agribusiness and are familiar with the legislation, although they do not know any particular person that can advise them and prepare the necessary documentation. 80% of the interviewed would rather use the services of an insurance company.

Table 9. Purchasing a firm - business

Questions	Yes	%	No	%	Undecided	%
If you are purchasing a firm - business						
Do you know the pros and cons for purchasing an existing agribusiness?	77	48	65	41	18	11
Do you know the real reasons why the current owner is selling his firm?	99	62	48	30	13	8
Have you compared the costs of purchasing an agribusiness with the costs of starting up a new one??	123	77	23	14	14	9
Do you know what others think about the business you wish to purchase?	129	81	24	15	7	4
Have you talked with the business suppliers?	136	85	14	9	10	6

Source: own research, 2011.

When purchasing an existing business, given that they are not to start their own, the reasons for the sale are very important. They should compare the profitability of both scenarios taking into account the opinion of more competent people.

Table 10. Advertising, prices, sale and procurement

Questions	Yes	%	No	%	Undecided	%
Advertising						
Have you decided which media to use for advertising: newspapers, direct sale, radio, presentations, TV?	81	51	53	33	26	16
Is there anyone who could help you select the appropriate type of advertising?	91	56	52	33	17	11
Have you analysed competitors' advertising?	60	38	92	57	8	5
Prices						
Do you know how to set prices for your products or services?	84	52	60	38	16	10
Have you developed any price strategy for certain markets?	43	27	112	70	5	3
Sale						
Do you have any basic techniques in selling agricultural products?	57	36	76	47	27	17
Could you persuade customers to buy your products?	99	62	37	23	24	15
Are you familiar with the benefits you product has to offer to a potential customer?	97	61	39	24	24	15
Are you well acquainted with the product you want to sell?	102	64	39	24	19	12
Procurement						
Have you selected your suppliers?	47	29	105	66	8	5
Do you have a plan that includes your stock, the time and the amount of your procurement?	49	31	100	62	11	7

Source: own research, 2011.

They have a certain notion of the type and the importance of advertising, although they did not say whether they would analyse any competitors' advertising. The fact that more than a half of the examinees do not know how to set the price for their products represents a real problem.

In sale they lack the basic knowledge, but they have the ability to persuade a potential customer to buy. The indecisiveness regarding supplier selection and the lack of any stock and procurement plan represent a real problem because 60% of the interviewed had many unresolved questions in that area.

Table 11. About the staff

Questions	Yes	%	No	%	Undecided	%
Staff						
When you want to hire someone, do you know how to select an adequate person?	114	71	26	16	20	13
What is the desired profile of the person you want to hire?	119	74	24	15	17	11
Do you know how much you should pay him/her?	81	50	52	33	27	17
Do you plan any training for your staff?	86	54	56	35	18	11

Source: own research, 2011.

The employment and staff selection results show that potential employers know how to make selection, how much to pay employees, and how important are training and education to employees.

Table 12. Additional questions

Questions	Yes	%	No	%	Undecided	%
Have you talked about your idea with the family members and do you have their support?						
Are you willing to completely commit yourself to agribusiness?	75	47	82	51	3	2
Are you prepared and do you have the knowledge to start making a business plan?	77	48	50	31	33	21
Have you talked about your idea with the family members and do you have their support?	62	39	66	41	32	20

Source: own research, 2011.

Another concern is that about 50% of the interviewed people had not talked with the family members about a potential agribusiness. The fact that they don't know how to make a business plan is yet another problem.

Conclusion

The survey results of the Readiness for Job Creation through one's own Agribusiness Start-up in Serbia of a certain area, come down to several basic elements:

- People are ready to start and run their own agribusiness despite the fact that success is not guaranteed.
- Most of the examinees do not have own financial resources to start any sort of venture. Also, most of them do not know a potential partner for that venture, but are aware of the advantages one's own business provides.
- Half of the examinees guessed their future buyers but did not segment the potential market.
- Potential agri-entrepreneurs can secure adequate premises for starting an agribusiness and can decide which is better, to rent or to buy their own premises.
- Potential agri-entrepreneurs do not know much about suppliers and procurement conditions.
- Examinees do not know legislative, but they know individuals who can help them with this issue.
- Should they buy mobile agribusiness, the examinee would know what are advantages and disadvantages of starting such a business.
- In most cases potential agri-entrepreneurs did not talk about such an idea with their family members, and half of them are ready to completely dedicate themselves to agribusiness.

The hypothesis about the readiness for job creation through one's own agribusiness start-up can conditionally be confirmed and it goes like this: *potential agri entrepreneurs are ready to create jobs through their own agribusiness start-ups but should first go through a series of trainings for entrepreneurs.*

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ISTRAŽIVANJE O SPREMNOSTI OTVARANJA RADNIH MESTA POKRETANJEM SOPSTVENOG AGROBIZNISA

Boško Vojnović,[5] Vidoje Stefanović,[6] Dragana Vojnović[7], Milorad Perović[8]

Rezime

U radu se istražuju problemi radnih mesta, zaposlenosti, angažovanja kadrova za agroindustrijski kompleks, šta čini radno mesto, teorijski i praktični indikatori cene radnog mesta i spremnost naših ljudi za otvaranje radnih mesta ulaskom u sopstveni agrobiznis. Rezultati ukazuju na hroničan nedostatak ličnih sredstava za startovanje biznisa i na neizbežnost zaduživanja. Potencijalni agropreduzetnici razgraničavaju prednosti i nedostatke solo i ortačkog biznisa, ali nemaju u vidu potencijalnog partnera. Materijalnu bazu za stvaranje radnog mesta u vidu sopstvenog prostora, obradivog zemljišta i slično, ima skoro polovina ispitanih, ali nemaju saznanja koliko je pored toga još sredstava potrebno za funkcionisanje biznisa. Uglavnom shvataju značaj treninga i obuke za kreiranje budućeg posla.

Ključne reči: *samozapošljavanje, poljoprivreda, sopstveni posao, radno mesto, agrobiznis.*

5 Prof. dr Boško Vojnović, vanredni profesor, Visoka poljoprivredna škola, Vojvode Putnika 56, 15000 Šabac, Srbija, Telefon: +381 62 675 966, E-mail: bosko_v@open.telekom.rs

6 Prof. dr Vidoje Stefanović, redovni profesor, Prirodno matematički fakultet, Višegradska 33, Univerzitet u Nišu, 18000 Niš, Srbija, Telefon: +381 63 10 12 468, E-mail: widojes@yahoo.com

7 Dragana Vojnović, DMR, Trg Heroja 24, 11420 Smederevska Palanka, Srbija, Telefon: +381 63 868 45 62, E-mail: bosko_v@open.telekom.rs

8 Mr Milorad Perović, HE Đerdap, Pop Stojanova 2a, 11000 Beograd, Srbija, Telefon: +381 11 381 10 182, +381 63 200 182, E-mail: milorad.perovic@djerdap.rs

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QUALITY OF GOURMAND PRODUCTS AND SERVICES AND MODERN TRENDS IN RESTAURANT INDUSTRY

Nata Ćirić[1], Miroljub Đenadić[2], Bela Muhi[3], Dušan Jovanović[4]

Summary

Improving Hotel offers by introducing different contents and services (swimming pools, bars, conference rooms, specialized restaurants, diverse and attractive cuisine), with strategic and holistic approach to the hotel - tourist activities, can lead to increased tourist traffic and tourist spending. The modern touristic demand is very critical and sophisticated, particularly in the terms of content and new culinary trends. Religious customs, traditions and different ways of living, vegetarianism, organic food, healthy food, slow food etc., determine the specific consciousness of the choice of foods and nutrition for many tourists. The restaurants known for their fine gastronomy and service are in a stronger competitive position than restaurants that do not keep the continuity of high quality products and services. Creating a restaurant with an organic, macrobiotic or vegetarian food can be a significant form of marketing strategy aim to establish a superior quality catering industry products and achievement of competitive advantage in that respect.

Key words**:** *catering, hospitality, strategy, quality*

JEL: *Q13, Q18*

Introduction

The development and improvement of hotel and restaurant business leads to improvement and development of other directly or indirectly related activities. In this article the agricultural products which are of interest to the tourists, with their desire to their consumption, have been pointed out. This refers both to the national and international level. The twenty-first century is the century of new technologies and innovations in many areas of the economy and society, including IUU agriculture and food industry (crop lands, processing and food processing). It is

1 Ph.D., Ministry of Economy, Kneza Miloša 20, 11000 Belgrade, Phone: +381 62 204 332, E-mail: nata.ciric@gmail.com

2 Ph.D., Recreatours Adria, Cara Dušana 48, 11000 Belgrade, Phone: +381 63 262 077, E-mail: djenadic.miroljub@gmail.com

3 Ph.D., Educons University, Faculty of Business Economy, Vojvode Putnika 87, 21208 Sremska Kamenica, Serbia, Phone: +381 63 533 720, E-mail: muhi.bela@gmail.com

4 M.Sc., Ph.D. student, University of Novi Sad, Faculty of Agriculture, Trg Dositeja Obradovića 8, 21000 Novi Sad, Serbia, Phone: +381 62 303 122, E-mail: duda.jovanovic@gmail.com

expected that the skill and knowledge regarding to the creation, promotion and development of food products and culinary skills and services will achieve outstanding quality. This will require proper management and quality of gourmet products and services, as well as human resource management and their knowledge in this field. Knowledge, information, creativity and skills are certainly the greatest capital in the hotel industry and in the catering and gastronomy industry. Strategic effort means that all the activities of hotel companies in the market should be evaluated solely from the standpoint of its ability to improve its position in the targeted markets. Satisfaction means that it is necessary to meet the needs of hotel guests, because for the hotel company which aspires to meet business objectives in the market economy, consumer satisfaction is prerequisite for profit. A growing number of restaurant and hotel guests have special needs and requirements in terms of gastronomy. Restaurants with organic, macrobiotic or vegetarian food can be an original form of a strategy that differs from the competition, with desired positioning in the minds of certain target market segments and achievement of significant competitive advantages in that respect. Also, these special activities generate a marketing relationship with clients and provide loyal customers.

The quality of products and services as a strategic tool

It is widely accepted that the quality means compliance with the requirements. It is assumed that once the specification is given, quality measures ensuring compliance with the specification. This is the definition of quality from the point of supply. Unlike previous definition, when the quality is measured from a user perspective, Kotler gives the following definition: "Quality is the total of features/characteristics of products or services that have the particularity to satisfy the expressed and implied needs." In his opinion the company to fulfill the needs of consumers mostly is called a quality company (Milisavljević, 1998). It is considered that there are four stations in the use of quality as a strategic asset in achieving competitive advantage in the market. In the first stage of evolution, the stress is on an agreed quality. It is necessary to provide quality products and services given in the standards of quality. In the second stage of evolution, the stress is on the customer's satisfaction. Thus the focus shifts from internal operations to external operations, and consumers. In the third phase the stress shifts to quality viewed in relation to competing companies. This requires reliance on analysis of the market trends and segments, as well as how consumers make decisions about the choice of the products between different products on the market. Quality as a strategy means permanent access to the fourth stage of evolution. This is a qualitative step forward to the quality of products and services (Milisavljević, 1998).

Building of international standards (ISO standards) and a recognized structure for quality management and assurance is achieved through a series of standards ISO 8402, ISO 9000ff, ISO 10000ff, 14000ff ISO, EN and other standards 45000ff whose number increases every day. All ISO standards are generic and can be adapted to any business, both in production and in service companies. Standard ISO 9000ff has not expressed explicitly in particularly how product or service must be created. They describe the character of strategic quality management as follows: the composition of quality is realized through a process, which is located within the business functions or even exceed the limits of these functions.

The quality of the ISO standards define as unconditional guidance on the expectation of customers, associates, owners, suppliers and society at all levels. ISO 9000 series standards are international standards that are the minimum requirements, to meet the quality. Those guidelines stipulate that they should be applied, but not how to set REQUIREMENTS addressed (Cerović, 2003).

The strategic approach to quality of the hotel products

The hotel products can be considered as heterogeneous, interconnected and related services and as such, represents an ideal area for the introduction of technological and social innovation, which means improving the quality of the hotel products. Improvement of the hotel product, the implementation of innovation in business is hotel management response to the technological, economic, psychological and social changes in the environment. A critical point in this process is the identification of innovation by the hotel management that will contribute in the best way to improve the quality of hotel products/services.

The strategic concept of hotel management on the quality of tangible and intangible elements of the hotel products will be the way of gaining competitive advantage in the tourism market. In the modern business of hotel and tourism enterprises, there are many reasons to highlight the importance of applying quality management (Bakić, 2002):

- Sharpened competition in the market of hotel services
- Significantly increase the level of attention to consumerism
- The observed increase in sophistication of the market of hotel services and hotel products
- Greater use of modern technology as an impulse to the raising of hotel services to the next level.
- The Companies are guided by strategy of increasing of hotel products and services quality.

It can be concluded that the quality of hotel products and services has a significant influence on the position of the hotel company in the market and the level of market share, which significantly contributes to increased profitability in the long term financial performance and profitability. For that reason, the hotel company managements recommend a strategic approach to quality of the hotel products, which means respecting the following circumstances:

- Following marketing orientation, the hotel company has to constantly adjust the quality of the own products to the needs and demands of the changing tourism market.
- It is essential that market research has to identify the attributes of hotel products, which are crucial for the realization of that product on the market.
- It is necessary to attend a real quality that can be defined as a combination of quality score, as seen by consumers and employees.
- It is necessary to analyze the quality of hotel products and introduce the following parameters: the elasticity of demand on the quality of hotel product, as well as the elasticity of demand on the individual elements of quality and

- Recommendation to the hotel management to adopt the philosophy of integrality of the hotel product.

The basic assumption for superior quality hotel products and services and competitive advantage in that respect, is the functional quality of the process, which is observed in the interaction between the hotel guest and the hotel service provider - is the moment of truth. This relationship, as stated in the literature, includes not only the interaction, but also acquire a sort of the guests impression to the hotel architecture, accommodation, or de-lightness to the variety of the gastronomic products and dishes (large pleasure factors wow-factors), (Ninemeier et al., 2005).

The interaction in the creation and delivery of hotel products and services is the dimension of the quality of service that is dominant and is manifested by the kindness, courtesy, flexibility and the tendency of employees to contact and the ability to act as a "part-time marketers of the company".

The process of improving the quality of hotel product (service) has excellent goal to increase sales revenue, and reduce costs by reducing or eliminating errors and omissions in the process of services. Making profitable decisions related to the costs of improving quality is a key management problem. Also, all efforts to improve the quality must be financially justified, including knowledge where efforts should be made and when is necessary to reduce their investment (Ljubojević, 1998).

Total Quality Management (TQM) in Restaurant Industry and Gastronomy

Gastronomy or gastrology comes from the Greek word which means "gaistri" stomach and "nomos" - the knowledge and the law. Gastronomy includes everything related to cooking, chef skills and in the broad sense includes gastronomery, epicurisme, in the broadest sense, the relationship between culture and food, nutrition and art, culinary art. Gastronomy is one of the interdisciplinary fields, since the preparation, decoration, display and setting of food, often is accompanied by music, dance, visual arts, but also has points of contact with biology, agronomy, etc.. Scientific discipline that studies the cooking and gastronomy, is known as molecular gastronomy.[5]

First application of high-standard and restaurants is connected to the second half of the 19th and the first half of the 20th century and the famous hoteliers and owners of hotel chains, Ritz, "Cesar Ritz-a-a. Cesar Ritz was a visionary at the time. He knew that restaurants and pubs are a significant part of the hotel product. In a number of hotels that he has built, a special place occupied a luxury restaurant with fantastic cuisine. His guests were the best known personalities of the time, where King Edward VII took a special place. In much the fame of his sentence related to the RITZ HOTEL, which read: 'Where is the "RITZ", I am there." *Belinger*, well-known restaurateur and owner of the time the famous Parisian restaurant "VOISON," said that the Cesar Ritz is a giant in the field of gastronomy. The name of Cesar Ritz in professional circles in Europe was the brand name for quality catering services (Chwarz, 1995).

5 available at: http://sh.wikipedia.org/wiki/Gastronomija, Wikipedia, the free encyclopedia.

Today, many well-known hotels in the world are developing a tradition of good food to raise the overall quality of service, whether it's national cuisine or international specialties are prepared. Certainly, agricultural products, vegetables, fruits and beverages (e.g. wine, spirits and the like are treated as agri-food products), must meet certain quality standards, as well as current trends in tourism demand for healthy food.

In modern business of hotel and tourism enterprises, total quality management (Total Quality Management) is a relatively new philosophy, and specific actions aimed at improving service quality. It should be noted that the activity of continuous quality improvement and preventive rather than corrective process (Milisavljević, Todorović, 1995). The application of TQM in the hotel industry in the first plan emphasizes two dimensions (Bajić, 2002):

- Major changes in the organizational structure of the hotel companies, management instruments and changes in attitudes and behavior of all employees in the company;
- Support of all employees applying this concept and the introduction of an acceptable method to maintain it.

The characteristics of the organization oriented towards TQM concept:

- Planning horizon: long-term views on the vision, mission and strategy
- Motivation: customer satisfaction
- Investments: small-progressive,
- Development: aimed at innovation.

The characteristics of classic business-oriented organizations:

- Planning horizon: short-term views on the vision, mission and strategy of the company
- Motivation: profit
- Investments: large
- Development in accordance with tradition.

Of the crucial importance to the acceptance of the concept of TQM is top management's ability to impose a new system of values in organizational and cultural environment, to transform the way of thinking in the behaviour of employees, and to choose the successful implementation of the method. In hospitality, by focusing on satisfying the ever-changing customer needs by creating individualized approach, responsiveness, empathy and trust, hotels over time get regular customers who can in return always expect to get the same level of service quality. In that process, hotels create a recognizable product, which increases there market visibility and profit. Reaching company's objectives by focusing on customer needs is the essence of TQM in hospitality.

Alternative ways of eating good food

Each hotel guest, during their stay in a hotel or restaurant, will be treated not as a part of a tourist mass (mass of tourists), but as a separate individual with their (its) desires and habits. They want all their senses to be satisfied and the whole food consumption experience to be

unforgettable. Tourists often like to try other, hitherto completely unknown tastes of various agricultural products. Agricultural production is now able to produce different varieties of agricultural products. Also, the manufacturing industry has achieved a high quality and large number of different ways of processing agricultural products for human consumption. For tourists it is particularly interesting to include healthy, organic food in the tourist industry. One could make a large number of distributions of the customers (tourists) or their segmentation according to the requirements and preferences regarding the consumption of food and beverages in the catering and hotel businesses and restaurants.

Here are just three segments of consumers (tourists):

- Those who want a vegetarian nutrition
- Those who want a macrobiotic nutrition and
- Those who want eco-gastronomic nutrition.

In the following, we will analyze all three terms, as in the past (during the middle of the 19th century), and today's modern, modern society.

Once, not too long ago, the food was simple and natural. For many, this means a trip back in time of the childhood when tomato was more sweet-scented, though not so shapely as it is today, when the apples were still full of vitamins, not pesticides, when all fish was good for the health and when more beef could be eaten without risk of dementia. Today, term healthy eating, primarily refers to vegetarian food, or food that excludes red meat. The first Vegetarian Society was founded during the middle of the 19th century in London, and now has hundreds of millions of members worldwide who make 3% of the total population. Many who were inspired by the new nutrition wrote down their thoughts and one of them that was found in an ancient Egyptian papyrus reads: We live on a quarter of what we have ingested, doctors live on the remaining three quarters.[6]

There are many subdivisions within the concept of vegetarianism, which unites them all. People who eat this way can be divided into semi-vegetarians, lacto-ovo-vegetarians, and vegan lacto vegetarians. However, there are semi vegetarians, who in their meal sometimes include fish or chicken, dairy products, eggs, but never red meat. Then, "lacto-ovo-vegetarians" who consume milk, dairy products and eggs, and vegans that eat only foods of plant origin. Looking from a nutritional standpoint, the more restrictive diet, the greater the possibility of a lack of certain nutrients. Semi vegetarian, well planned nutrition is often associated with a balanced, ideal diet, and the occasional consumption of fish and poultry, identified with the Mediterranean cuisine, is the model recommended by medical and nutritional fields. With adequate education and planning, such nutrition can be of very high quality and nutritionally valuable. When talking about alternative ways of eating, we must mention macrobiotics. It represents a comprehensive approach to healthy eating that includes food choices, food preparation methods, and the manner in which prepared food is eaten. Macrobiotic nutrition consists of whole grains, legumes, vegetables, nuts and

6 available at: http://www.gastro.hr/ekogastronomija-2219.aspx, Gastro.hr - web portal for food culture.

seeds, fermented soy products, and a frequent use of algae as part of soups and stews. The principles of macrobiotics is based on the fact that each foodstuff has its own energy, which depends on the location and direction of growth in food, climate and season, and thus food affects your mood, thoughts and health. In other words, macrobiotics teaches that food is a mean to achieve the balance of physical, psychological and mental level, and therefore very carefully selected ingredients are combined.[7]

More than half the adult population of the European Union is overweight and 15.5% of adults are obese. In countries such as the United Kingdom, Eire and Malta, the percentage stands at around 20%. The growth rates of these percentages are a serious cause for concern: obesity is, in fact, a risk factor for numerous health problems, such as hypertension, diabetes, cardiovascular pathologies, respiratory problems and some forms of cancer, and the risk of death increases considerably once the overweight threshold has been crossed. The effects of malnutrition, obesity and overeating are not only serious from the public health point of view, but may also have severe repercussions on a country's health budget. Suffice it to think that 7% of health spending in Europe is accountable to obesity-related pathologies. The factors that contribute to obesity are manifold, but among the main ones are overeating and unbalanced diets. The relationship between people and food production, processing and consumption has been progressively lost. The simplification

and standardization of food production, processing and consumption methods—for the sake of greater "speed" and globalization, seen as mere homologation—has progressively eroded food culture, which used to be a common heritage, and imposed "price" as the main criterion for making choices and, as a consequence, for organizing one's diet. On the one hand, this has signified the debasement of the role of food, which no longer represents an essential resource worthy of respect, since it can be consumed in excess (overeating) or, on the contrary, wasted without immediately visible consequences (42% of waste is recorded at domestic level). On the other hand, it has caused consumers to opt for cheaper foods, often of poor quality. As Slow Food has been explaining for years, producing good, clean and fair food has its costs. A low price is often made possible by the use in the production process of industrial methods that allow production costs to be cut. These production methods are obviously typical of the large scale which, by further lowering costs, hence selling prices, benefits substantially from CAP (Common Agricultural Policy[8]) economic support. If we consider that food produced by agroindustry is easily available through large-scale retail channels, it is easy to see how the agri-food system itself is at the forefront in encouraging improper diets and the consumption of low quality food (Slow Food, 2010).

Price of healthy food products, alternative ingredients and special requirements of hotel guests is the most important criterion. If the consumer is willing to pay for a particular agricultural product or a gastronomic specialty not only will they be satisfied as customers, this will also

7 available at: http://www.gastro.hr/ekogastronomija-2219.aspx, Gastro.hr - web portal for food culture.

8 available at: http://ec.europa.eu/agriculture/cap-history/index_en.htm, European Commission's Agriculture and Rural Development Policy.

be the right signal that the farmer, manufacturer and gastronomes, have succeeded in their intention. Economics of Agriculture, which among other things includes the marketing of agricultural products in the tourism and hospitality, implies that the farmer has to know where his market is, which of his products consumers (tourists) want to buy, what they want to eat in the hotels, how much are they willing to pay for it, as well as the quality of agricultural, i.e., gastronomic products they seek and like.

Republic of Serbia adopted a Strategy of Agricultural Development in 2005, which would allow the smooth development of agriculture and the integration of agriculture in the European Union. The strategy provides the changes that need to be made in the agricultural sector. They include three major elements, namely: complete transition from a socialist to a full market economy, integration and EU accession, a radical reconstruction and modernization of the entire agricultural sector, and the establishment of market economy, which will have a strong impact on the role of government in agriculture and the relations between agricultural producers, consumers and government (Strategy for Agricultural development of Serbia). Today's agricultural strategy reflects nearly half a century long changes in food production priorities. The initial goal to increase food production, almost regardless of cost, is replaced by controlling the excess production and excessive costs. Also, it now redirects to meet a number of different social and environmental objectives through mechanisms that are substantially separated from production (Cvijanović et al., 2011).

Increase of the consumption of vegetables in relation to meat consumption in most developed countries of the World

In all previous periods of time the amount of meat consumption has been increasing in accordance with social status. In most developed countries of the world, the meat is progressively becoming the food of lower stratum of the society, and citizens who earn well and have university degrees eat significantly less meat or sausage. This is the result of a national study about nutrition published in Germany which is engaged in the relationship between consumption of certain foods, and social status. There is a danger that meat foods is becoming lower social stratum, said study co-author, *Achim Spiller*, professor of food marketing at the University of Goettingen.

In all previous periods, the quantity of consumed meat has been increased in accordance with social status. One of the causes of the degradation of the reputation of the meat industry, which has been struggling for years with scandals related to animal disease, is the use of prohibited means in breeding and treatment of livestock. In addition, a significant number of citizens are ready to reduce the consumption of meat for health reasons, and because of warnings of environmental experts that meet production adversely affects to the global climate change. Meat consumption in Germany reduced from more than 66 kg per capita/ year in the mid-1980^{s} to 60.3 kg per capita/ year. [9] In the US, meat consumption has

9 available at: http://www.rts.rs/page/stories/sr/story/14/Nauka/56133/Meso+postaje+hrana+ni%C5%BEih+dru%C5%A1tvenih+slojeva.html, Radio and Television of Serbia, on-line edition, news.

decreased by 12% between 2007 and 2012.[10]

Regardless of the previous data, globally speaking, we can register the excessive production and consumption of meat and unhealthy fast food. Even 18% of greenhouse gas emissions come from livestock farming. How many animals are needed for this amount of gas? A frightening fact is that 30% of the Earth's land surface is directly or indirectly devoted to raising animals we eat. It is anticipated that this amounts will double in the next 40-odd years.[11]

"U.S.A. companies introduce new practices into their operations, which they believe will have positive effect on mood and health of employees. One of them was Pepsi Co., which has an organic vegetable garden where employees can pick up fresh vegetables. Besides being a creative way to motivate employees, this practice is partly compensated for the lack of a salary raise at this time of financial crisis. The gardening was also accepted by Google and Yahoo, and Toyota is growing large quantities of pumpkin and tomato in the factory. Of course, for successful vegetable ripening, somebody has to cultivate it, so employees agreed to volunteer so they can bring fresh vegetables home every day".[12]

Eco-gastronomy in hotels and restaurants

The motive for traveling or accommodating at the hotel can often be just the food that it offers. It is necessary that hotels and gourmet restaurants conceptualize their products to the targeted segment of consumers and thus can be differentiated from the competition. For example, restaurants such as Chez Panisse in Berkeley, Lidias in Kansas City and the Johnstones chain Chipotle Grill, use natural, organic food in order to distinguish themselves. These restaurants have developed a network of farmers who supply them with fresh products that are manufactured by the standards of the restaurant. Hotels and restaurants, which are creating memorable experiences are positioned well in the market (Steinberg, 2004). The food is a basic necessity of life that connects us with the rest of the world and is an integral part of our future.

When Carlo Petrini, founder of the Slow Food movement that emerged in response to fast food, visited the University of New Hampshire in the UK, it has opened a new chapter in understanding food. Shortly after his departure eco-gastronomy was born. We want to show to everyone who is interested that it is not enough to put a carrot in their mouth. An important fact is the question of who breed the carrot, how it came to us, who produced the seed for it, as he served on a platter at the restaurant, who it is and how to serve guests... and a number of other issues, said in a recent Washington Post interview Daniel Winans, one of the speakers at the study of eco-gastronomy in New Hampshire. The professor agrees that

10 available at: http://www.foodnavigator-usa.com/Markets/What-s-driving-the-decline-in-US-meat-consumption, Food Navigator - News on Food & Beverage Development.

11 available at: http://www.bastabalkana.com/2011/08/savremena-ishrana-i-sta-nije-u-redu-sa-njom/, Balkana Garden - Natural, life and style web magazine.

12 available at: http://www.gastro.hr/ekogastronomija-2219.aspx, Gastro.hr - web portal for food culture.

a program that combines nutrition, agronomy and catering approach will drastically affect the traditional love to pizza and beer, however, is optimistic, because people will learn to observe the food from many perspectives to better understand principle of sustainable food production and consumption.

Since the program launched eco-gastronomy, there are more and more interested into it, as the term of eco-gastronomy is slowly spreading around the UK. There still exist as much as 19 departments that deal with food and agriculture at the prestigious U.S. Yale University, which are very popular among students majoring psychology, biology and politics of food. In the United States, number of university departments associated with food increased more than 50% over the past five years, so it might be perceived as a sort of trend. What is strongly marking the study of food is interdisciplinary. New Hampshire students spend time not only in the classrooms during their studies, but in the kitchen, laboratory and farm as well, and they are expected to spend a semester at the University for the culinary arts in Pollenzo, Italy to prepare for the career of the professionals who care about what we eat and how we get that what we eat. We became aware of the growing interest of young people for food and sustainable development and their desire to understand the relationship between the local, regional and global food system, says Joanne Curran-Celentano, professor of nutritional sciences noting that eco-gastronomy studies are created with the aim to encourage students to seek deeper food understanding.

Eco-gastronomy offer in the restaurants and hotels should take more and more space. For that you need to make the differentiation in the reputable hotels and restaurants of gastronomic delights from a large number of tendered products. Differentiation of gastronomic offer, which excites the customer, offers something new, which can lead to excellent opportunities for public relations, customer loyalty and higher profits (Kotler et al., 2010).

Management of restaurants with alternative ways of nutrition

The restaurant which is known for its fine gastronomy offer and services is in a stronger competitive position than restaurants that do not keep the continuity of high quality products and services. Quality service creates a marketing relationship with restaurant guests and creates loyal customers.

Creating a restaurant with organic, vegetarian or macrobiotic food takes place in several phases: the design concept of the restaurant, the selection of recipes, food preparation and photography, design, printing menus... Such projects are extremely demanding and complex, but primarily it is necessary to bring together people who are extremely professional and creative in their field of action, so that all elements are molded into an attractive design. It is necessary to show the guests that in this, limited foodstuff culinary approach, it is possible to design and prepare meals that look attractive, as well as meals in every other culinary direction.

Vegetarian cuisine is considered as a cuisine which omits a number of ingredients and therefore many are skeptical towards it. It is therefore necessary to make the most of all

natural foodstuffs as much as possible in order that food is acceptable. There is a need for a pleiad of farmers who work for organic food restaurant. Currently the ratio is such that in these restaurants, about 80% of served vegetables are truly organic (vegetables), and the rest is purchased from reputable small producers that are known to adhere to standards.

There is a great difference in tastes and habits of the individual continents. For example, Americans mix fruit with everything, mixing sweet, sour and spicy. Everything is acceptable there. However, Europeans for example are used to specific tastes and extreme exoticism does not pass. Consumers accept experiments to some extent, otherwise, this approach does not have success in the long run. Guest is looking for something familiar, possibly with added elements from other cuisines. A very similar situation is in Serbia. Our customers love to try something new, but they rather prefer relatively distinctive tastes. Innovation in gastronomy should encourage modern tourist not only to recognize food as "healthy", but to come to restaurants because of the very interesting taste, a combination of elements from various cuisines merged into new and delicious meals. In Serbia, a number of traditional dishes and drinks are characteristic to major entertainment and tourist events. A varied cuisine prepared in the manner and form that has not changed for centuries, creates an integral part of the interesting, attractive and alluring tourist offer of Serbia. Such gastronomic diversity, certainly a represents significant ethnographic wealth and it is an integral part of the cultural heritage of Serbia, but as well as an attractive and original tourist product that contributes to the positioning of Serbia as a competitive tourist destination (Đenadić, 2010).

Attractive kitchen interior is often found in restaurants and provides excellent opportunities for knowing and planning with culinary techniques, and it is important to say about the very foodstuff that are used, that they must come directly from the market and the market of proven suppliers. No artificial flavors, no ready-made sauces from the bag - just natural methods of discovering new flavors and combinations of socializing with food and wine. The high level of cuisine is not just one that is served in expensive and great restaurants. The title of "Haute cuisine" deserves every top bite, a product or rest place, no matter where we afford pleasure: the humble hut at the market or in a luxury restaurant that attracts a jet-set.

Management of the restaurant must comply with the profitability of the listed gastronomic products. If not, certain analyzes should be performed to find the possible ways of modification of the product and its return to profitability. If the analysis shows that the product should be deleted excluded, there are three choices: a gradual retreat, thinning, and finally the expulsion of products that do not make a profit (William et al., 1995).

Conclusion

Hotel and restaurant managers need to decide which aspects are most important for customer and to focus on them. One important element is certainly linked to the ratio of product quality and services and prices. For that reason, the quality level should be accompanied by adequate price of gastronomic products and services. Furthermore, the knowledge regarding

hotel, restaurant and tourism business management must be continually upgraded, a lot of knowledge regarding the management of hotel and tourism businesses and restaurants must be continually updated. Business of the new era is characterized by the fact that competition is destructive. In this context, it is necessary to change the current management style to more competitive and to establish and build a system of cooperation, partnership, association (cluster association) and such like. This paper concludes that the tourist business in the future will be run only by those who recognize the optimal strategy development and improvement of quality of products and services. Business strategy must be formulated according to the type of business, choosing the targeted market and group of tourist products and services that will satisfy chosen market. The aim is to emphasize the need for innovation in the hospitality and restaurant industry, especially when it comes to innovations in cuisine. The luxurious, well-organized and the exemplary types of hotels and restaurants must make a package of products and services for pre-selected clientele that is willing and able to pay the price. This certainly applies to the catering facilities in the high category, i.e. serving healthy, organic and produced in a healthy way of processed food. This is so, because such products are still expensive, so only the big spenders can now afford them. Prices are currently high because there are still large segments of the consumer market for these types of food. However, due to the increasing desire of people to longer stay vital, young and very healthy, it is anticipated (predictions UNWTO) trend of rapid increase in the number of such clients, primarily in higher purchasing power, and later on in the lower strata of society.

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KVALITET GURMANSKIH PROIZVODA I USLUGA I SAVREMENI TRENDOVI U RESTORATERSTVU

Nata Ćirić[13], Miroljub Đenadić[14], Bela Muhi[15], Dušan Jovanović[16]

Rezime

Unapređenje hotelske ponude uvođenjem različitih sadržaja i usluga (bazeni, barovi, kongresne sale, specijalizovani restorani, raznovrsna i atraktivna gastronomska ponuda), uz strategijski i holistički pristup razvoju hotelsko - turističke delatnosti, vodi povećanju turističkog prometa i turističke potrošnje. Savremena turistička tražnja je veoma zahtevna i sofisticirana, posebno po pitanju novih gastronomskih sadržaja i trendova. Verski običaji, različiti načini i tradicije življenja, vegetarijanstvo, organska hrana, makrobiotika i sl., determiniraju određenu svest o izboru namirnica i ishrane kod mnogih turista. Restorani koji su poznati po dobrom kvalitetu svoje gastronomske ponude i usluge su u jačoj konkurentskoj poziciji od restorana koji ne drže kontinuitet u visokom kvalitetu proizvoda i usluga. Kreiranje restorana sa organskom, makrobiotičkom ili vegetarijanskom hranom može biti značajan oblik marketing strategije u funkciji uspostavljanja superiornog kvaliteta ugostiteljskog proizvoda i ostvarivanja konkurentske prednosti po tom osnovu.

Ključne reči: *gastronomija, hotelijerstvo, restoraterstvo, strategija, kvalitet*

13 Ministarstvo privrede, Kneza Miloša 20, 11000 Beograd, Telefon: +381 62 204 332, E-mail: nata.ciric@gmail.com

14 Recreatours Adria, Cara Dušana 48, 11000 Beograd, Telefon: +381 63 262 077, E-mail: djenadic.miroljub@gmail.com

15 Univerzitet Educons, Fakultet Poslovne ekonomije, Vojvode Putnika 87, Sremska Kamenica, Telefon: +381 63 533 720, E-mail: muhi.bela@gmail.com

16 Student doktorskih studija, Univerzitet u Novom Sadu, Poljoprivredni fakultet, Trg Dositeja Obradovića 8, 21000 Novi Sad, Srbija, Telefon: +381 62 303 122, E-mail: duda.jovanovic@gmail.com

Review Article

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AGRICULTURAL PROTECTIONISM OF THE EUROPEAN UNION IN THE CONDITIONS OF INTERNATIONAL TRADE LIBERALIZATION

Ivan Marković[1], Milan Marković[2]

Summary

The key objective of agricultural protectionism is reflected in the protection and developing of agriculture sector. Integrated parts of this policy in the European Union are the initial model of agricultural protectionism and a new strategy of agricultural policy, which emerged as a response to the shortcomings of previously existing model. The paper presents the key reforms of agricultural policy, conditioned to internal problems and pressures in the negotiations of trade liberalization of agricultural and food products. Reform solutions for the period of 2014 to the 2020 will have similar goals. The priority will be to develop sustainable food production and sustainable management of natural resources. There is a widespread awareness of sustainable development that includes not only the economic component (which is reflected in the increase in productivity and production efficiency), but also an environmental component (the need to preserve the environment), as well as the social component of sustainable development (integrated rural development). Conducting negotiations in the framework of liberalization of agricultural and food products, there was a gradual reduction of restrictive measures in the field of domestic agriculture protection. However, the European food market is still highly protected from foreign competition because of the many features of the agricultural production sector and the importance of agriculture for the entire society. It is certain that the CAP will lose its narrow agricultural character.

Key words*: agriculture, protectionism, EU, reforms of the agricultural policy, world trade liberalization.*

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1 Ivan Marković, Ph.D., Associate Professor, University of Nis, Faculty of Economics, Trg kralja Aleksandra Ujedinitelja 11, 18000 Niš, Republic of Serbia, Phone: +381 18 528 658, E-mail: ivan.markovic@eknfak.ni.ac.rs; ivan.markovitz@gmail.com

2 Milan Marković, M.Sc., Ph.D. student, University of Niš, Faculty of Economics, Trg kralja Aleksandra Ujedinitelja 11, 18000 Niš, Republic of Serbia, Phone: +381 64 288 51 34, E-mail: markovicmilan89@gmail.com

Introduction

Agricultural protectionism is the part of the agricultural policy of almost every country. It is a system of government measures to protect domestic agricultural production from foreign competition, usually by preventing or discouraging of imports. It is specially developed in Western Europe after the Second World War, and experienced a boom in the application of measures and instruments of the Common Agricultural Policy (hereinafter referred to as CAP) of the European countries. The main objectives of this policy are defined and embedded in the founding documents of the European Union (hereinafter: the EU). The study points to the need to protect domestic agriculture from foreign competition, as well as very specific economic activities, which is of great importance for the population's basic needs.

Agricultural protectionism is focused on the selection of measures of foreign trade and economic policies to achieve the protection of agricultural sector from foreign competition. In a narrow sense, it refers to the barrier that makes the presence of foreign products in the domestic market difficult (impossible). However, in addition to measures in the field of agriculture which directly restrict imports (customs duties, levies, quantitative import restrictions, compliance with standards), there are also measures to stimulate exports (export subsidies, multiple exchange rates), as well as measures for the direct stimulation of agricultural production (premiums, reimbursements, direct cash transfers). At the same time protects the interests of all groups: producers, consumers and the overall economy.

Thanks to the protection, agricultural policy of this economic integration has managed largely to meet its original goals. Since its inception, the agricultural policy of the EU has had a protectionist (protective) character, bearing in mind that the member countries protect agriculture from competition from third countries. The positive effects of the measures were reflected in the growth of production, achieving self-sufficiency in food security and stability in the common market for agricultural products. The key reason of agricultural protectionism was to reduce dependence on imported food products, keeping in mind that one of the basic functions of agriculture is ensuring food security, as well as the constant food availability. From the consideration of the EU CAP development, we come to the knowledge of its protectionist elements. Due to the constant deficiencies of agricultural policy, there were reforms that have been relatively successful, which initiates the new reforms. Contemporary theory and practice indicate that due to the world trade liberalization protective measures are slowly losing importance, while objectives that are related to the sustainable development of agriculture are increasingly preferred. The aim of all previous reforms is that the principles that are applicable in the field of CAP are stricter by introducing pure market logic in the agriculture sector.

Methodology

From the perspective of scientific methodology is important methodological approach to the problem which is the subject of research. In the selection and application of specific methodologies of scientific research we was guided by the need to on the correct methodological

and, to the extent possible, complete and accurate manner approach to the problem that is the subject of research in order to achieve the main goal of research: contribute to understanding the importance of liberalization process of foreign trade flows to the EU common agricultural market. In accordance with the subject matter and research goals, during the survey will be used following the scientific method.

In order to establish the basis of the research of this problem it will be applied the empirical analysis of the role of principles that are applicable in the field of CAP are now stricter by introducing pure market logic in the agriculture sector. First it will be applied the method of deduction in order to get the desired response, while in the later stages of the research will be applied the inductive method in order to reach new conclusions and hypotheses.

Tabeau et al. (2008) concluded that effects of possible future CAP reform decision on the Dutch agriculture till 2020 are very important if not crucial for farmers. The study is based on the AGMEMOD econometric model which reflects a sectoral, dynamic, partial equilibrium model, which also takes into account the national specificities and is built up of models for the Member States of the EU 27.

Daugbjerg, Swinbank (2007) in their case presentation comparing the three latest CAP reforms, and demonstrate that pressures on the CAP arising from international trade negotiations cannot alone account for the way in which the EU responds in terms of CAP reform.

The authors will be in this research directed towards such an approach to establishing links between CAP reforms and international trade liberalization. The results of this study clearly indicate that there is a direct link between the CAP reforms and the liberalization of agricultural markets. In order to fully meet the requirements imposed by the object of study for this research will be applied and the comparative method, while a synthetic methods imposed as to consolidate the previously mentioned method, and the shaping of a unified whole. Therefore, this paper will be applied combined system of more scientific methods, with the prioritization system analysis method which is based on three basic principles, objective analysis, and the truth of the evidence and scientific reliability of the methods.

Reasons for the existence of agricultural protectionism

Although a free trade is a key factor in increasing competition, efficient allocation of resources and the demands of consumers, agriculture is a specific economic activity that requires a different (special) treatment and consideration. Specifics of agricultural production and the sensitivity of the agricultural sector on many factors (mostly natural) require state intervention in this area. Unequal position of agriculture relative to other economic activities leads to the need for protectionism, which is implemented by a wide range of measures and instruments. Thus, the special relationship of the state to the agricultural sector stems from its features. One of the characteristics of agricultural production is that it has a seasonal character, while due to the organic method of production there is a very slow turnover of capital. Long production cycle in the production of agricultural products also requires adequate protection for these activities. Due to the specific risks associated with agricultural production, it is necessary

to protect producers and consumers of these products. State interventionism and significant involvement in this area is very important because it is a large influence of climate and other natural factors that increase the risk of carrying out agricultural activities.

Specific treatment of agriculture is logical bearing in mind that this sector is essential for human survival (*Chart 1*). Therefore, protective measures are necessary. Agriculture is important from the standpoint of food security for the population. In this way, agriculture satisfies the essential, basic human needs. The key objectives of the strategy of agricultural development of any country are ensuring food security for consumers, self-sufficiency in food and variety and quality range of products.

Chart 1. Importance of agriculture in the economy

Source: European Commission.

In addition, agriculture is the basis for the development of the industry which is a major driver of economic development of any country. This is because agriculture is the main supplier of inputs (raw materials) for food, and other industries. In the initial stage of economic development, most of the working population is active in agriculture, and a large part of national income also is from agriculture (Đekić, 2010). Through the policy rate (the phenomenon of "price scissors"), tax, credit and customs policy, income was pulled from agriculture and contributed the development of the industry. These measures are usually temporary (time-limited), and their importance decreases with the economic development of the national economy. Industry, through the overflow of capital is able to contribute more to economic development than agriculture.

While international trade in non-food products in recent decades mainly carried upward with gradual liberalization and lowering tariffs (which is the result of several rounds of international trade negotiations), it wasn't the case in the trade of agricultural products (Božić et al., 2011). Fear of growing import dependence has initiated some countries (Switzerland, Japan, members of the European Economic Community) for application of strong protectionist measures. Agricultural protectionism has existed since ancient times, and "the real" is associated with

the expansion of CAP European countries in sixties of the twentieth century. Today, the protective measures of agricultural protection are present in many economies, but they are of particular significance in the agrarian policy of the countries of Europe and the United States. Protectionist measures operate twofold: to limit imports (defensive protectionism) and stimulate exports (offensive protectionism). Unlike the defensive model of agricultural protectionism of the EU, the United States (hereinafter: the USA) primarily implemented model that favors the stimulation of exports.

Other factors that contribute to increasing the level of agricultural protectionism in developed countries are: market stabilization, resistance to disturbances to the world market (wars, natural disasters), protection against uncontrolled imports of genetically modified foods and transmission of animal diseases, and in order to protect the health of consumers.

Protectionist character of EU agricultural policy

The EU agricultural protectionism is the basis of the CAP. The post-war period (the fifties of the twentieth century) brought a lot of problems regarding the supply of the population in agricultural and food products. In fact, Western European countries were faced with the scarcity of food on the market. There are problems associated with the lack of agricultural machinery, fuel, fodder, etc. The main concern of European countries was to increase food production. The recovery was aided by the Marshall Plan. Countries were bringing the various laws regulating the field of agriculture. Along with that, begins the discussion among some members of the European Economic Community on the future direction of development of national policies in the field of agriculture. CAP was accompanied by the abolition of tariffs on trade between the countries and implementation of a common foreign policy. It is the oldest and also the most expensive sector policy of the EU. With regard to the share of the agricultural sector in the total EU budget, we can conclude the importance of agriculture to European countries. Giving for these purposes amounted to well over two-thirds of the total budget of the eighties of the twentieth century. For many years this share in the total budget amounted to more than half of the total available funds. Investments in joint budget are often a bone of contention among member countries.

CAP of the EU has its basis in the Treaty of Rome in 1957 where they defined the following objectives:

- Increasing agricultural productivity through technological progress and rational use of the means of production,
- Ensuring an adequate living standard of farmers,
- Stabilization of the market (through the coordination of supply and demand for agricultural products),
- Regularity and safety in the food supply and
- Providing variety and quality of food supply to domestic consumers, which will be available at reasonable prices.

It should be noted that all of these goals remain the same to this day. Most of them are achieved to a greater extent, except attaining acceptable prices to consumers. There are strong economic objectives (related to the development of agricultural production through increased efficiency), social objectives (in terms of protecting the living standards of the manufacturer), and aims to achieve customer satisfaction (and the availability of sufficient quantities of healthy and safe food). Given the need for the realization of these goals, in 1962 was established the European Fund for guarantees and policies in agriculture, which was in 1964 divided into two parts: the first part of which is supported by guaranteed prices on the market, and second, that referred to structural reforms (European movement Serbia, 2010). The guarantee part is accounted for over 90% of the total fund, and related to the financing of market-price policy. The remaining part was used to support structural adjustment measures (rural development measures). From the constitution of the European Economic Community, it was clear that the agricultural sector will have special treatment compared to other sectors of the economy. The status of the EU agricultural policy is maintained even today, albeit in a slightly modified form.

In the first few years of operation, agricultural policy measures have begun to give certain effects. Since the shortage of agricultural products, it was created a significant supply of food. Implementation of CAP came to the fore its protective function which has worsened the position of third countries exporting agricultural products to the EU market (Acin et al., 2006). Incentives are focused on price support as the primary mechanism of agricultural policy that was implemented through price protection. Since its constitution, CAP was a policy of subsidizing agricultural prices, followed by the abolition of customs duties on mutual trade and the introduction of a common external tariff policy (Božić et al., 2011). In this way, the EU overcame the problems of self-sufficiency of food, provided a relatively high income to farmers, living standard of the population is held on a decent level, and the EU became an important partner in the export of agricultural and food products. Price support to farmers caused the positive and negative implications for the agricultural sector. Farmers were given guaranteed prices for their products, even in the case of large surpluses. The high level of import protection of the common market has led to a rise in prices of basic agricultural products far above the level of prices on the world market. The achieved level of prices is maintained primarily by export subsidies, and other instruments of agricultural protectionism. We conclude that the goal of security supply to consumers at reasonable prices isn't fully realized because of the constant high product prices on the EU market.

The initial model of the agricultural protection

CAP is conducted by two main groups of measures and instruments. These are market-price policy and measures to promote the development of rural areas. Market-price policy involves the market-intervention (import protection and export refunds, intervention buying, storing, etc.) and direct payments. They belong to the so-called first pillar of the CAP. Measures to promote rural development support multi-functionality of agriculture, diversification of the rural economy, engaging in non-agricultural activities. They revive rural areas and improve the rural environment, thereby improving the quality of life in these areas.

Within the agricultural policy of the EU countries, there is an internal and external protection (Bogdanov, 2004). Internal protection provides the stability of the food supply through protection from market disruptions. This protection is achieved through the common price. The guaranteed prices are especially important. They protect farmers from excessive lowering product prices in the situation when the market supply is far greater than the demand. This mechanism is similar to the policy of stockpiles (intervention buying). External protection is implemented by input prices, levies and export subsidies. In this way, producers are protected from cheap and excessive imports, and the disorder of the world market.

Strategy of limiting imports (defensive protectionism) is characterized by the following elements. The target price is the price determined on the beginning of the year. It was a desirable price level that would be achieved, and that the manufacturers provide a decent income. If the offer of domestic products was higher than the demand, the market price would be formed below the target price. The lower limit for the formation of market prices was the intervention price. Therefore, the intervention price is a form of price that assumes a minimum guaranteed price for domestic producers. The entrance price is the key in protecting of domestic agricultural production. This is the lowest price at which the imported goods can be sold in the common market. The variable levies are determined on the basis of it. It is a levy paid by domestic importer and the difference between the higher input prices and the lower import prices (which includes the cost of shipping and duty paid). They have provided a high level of protection of domestic agricultural producers. Through tariffs and levies are established funds that flow into the EU agricultural budget, and then used to stimulate exports and realization the other goals of agricultural policy.

The strategy of attacking agricultural protectionism is related to the export stimulation of agricultural products. Specifically, in order to encourage exports, the EU provided compensations to exporters. Export-oriented domestic agricultural producers were given these incentives. They are actually export subsidies, which are a significant budgetary expenditure. This measure was justified given the much higher prices in the domestic market compared to the price of foreign agricultural products. In the absence of subsidies, food from the EU wouldn't be cost-competitive on the international market.

The above initial model of agriculture was implemented at a time when the Western European countries were faced with a shortage of many agricultural products. There has been some revival of agriculture, increasing the range and quality of products. Except the positive results, there were the difficulties that have caused the reforms of agricultural policy. The prices of some agricultural products were approximately four times higher than world prices. There was a reduction in the competitiveness of agricultural products and therefore the European Economic Community was continuing application of agricultural protectionism. Through high tariffs, levies and other protective measures, it is hampered access to other countries on the common market, and through export subsidies solved the problem of placement of domestic products to foreign markets.

The negative effects of the original model of protectionist policy in agriculture were as follows:

- Excessive stimulation of production. Overproduction (production far exceeded the needs of the internal market), has created a large surplus of goods.
- There has been a violation of the natural environment due to the extensive use of agricultural resources (especially land) and the application of large amounts of chemicals in order to unnecessarily excessive increase of production.
- The creation of surpluses of agricultural produce that have led to the high cost of storage, insurance, and keeping inventories of these products.

It accumulated agricultural surpluses, and all the accompanying negative effects, caused the emergence of a new strategy of agricultural policy. Because of the high export subsidies, there was a big part of the total EU budget for agriculture. The main factor that has caused an increase in the cost of the budget they were huge state subsidies for the implementation of offensive protectionism. The high level of import protection worsened the relations of the EU with the traditional foreign trade partners in the trade of agricultural products. In particular, the USA demanded a gradual elimination or reduction of application of protectionist measures and radical reform of the CAP in order to liberalize trade in agricultural and food products.

The new strategy of the EU agricultural policy

One of the first reforms of agricultural policy was initiated even in 1968 by the European Commissioner for Agriculture (*Sicco Mansholt*). His idea was to reduce the predicted amount of guaranteed prices and support structural reforms. It is initiated to reduce the number of employees in agriculture in order to reduce budget expenditures. In this regard some directives were made in order to neutralize the negative tendencies in the development of agriculture. Thus, the Directive of modernization is related to the modernization of agricultural production through increased investment in agricultural buildings and the purchase of modern agricultural machinery. The Directive on early retirement meant the introduction of reimbursement to the elderly and encouraging young farmers for agricultural activities. The goal was to reach the enlargement of farms and improve the position of small and medium-sized farmers. Socio-economic directive is intended to assist in the training and education of farmers (Božić et al., 2011). The effects of the above measures were modest, due to internal problems of member countries, but also because of the economic recession, which is linked to the eighties of the last century. There was the program that shuts down part of the land from cultivation to financial compensation. The reason was an attempt to decrease the accumulation of surplus agricultural products.

It was the first reform of the limited range and in the literature is often ignored. There were documents including „Program of structural policy in agriculture" from in 1972 and the „Green Paper", which was created in 1985. As a „real" reform are the *McSharry* reform in 1992, reform in „Agenda 2000", and the *Fishler* reform („Agenda 2003"). The aim of these reforms was aimed at cheapening CAP and improving the competitiveness of agriculture.

The need to reform the CAP ensued as a result of internal pressure (due to the former policy of demonstrated weaknesses) and external pressure, i.e. closer to a common solution within the World Trade Organization (WTO), (Marković, 2009). In addition, there were increasing differences between the net recipients and net providers of funds to the agricultural budget.

McSharry reform objectives from 1992 were as follows:

- Achievement of greater competitiveness of domestic agricultural production on the world market,
- Preventing unnecessary accumulation of agricultural products through the matching of supply and demand,
- Using of the agricultural budget to fund individuals to ensure long-term binding of farmers living in rural areas of the EU and to improve social and age structure of the population in the countryside.

The plan included the reduction of the intervention price. Greater attention was paid to the poor farm. It was expected the development of the system of environmental protection and forestation of agricultural land and less use of agrochemical measures. The task was to eliminate the above-mentioned discrepancies, not only because of the „internal" reasons but also because of the start of the Uruguay Round negotiations in the framework of creating a market-based system of trade in agricultural products. The reform predicted reduction of price incentives. The focus has shifted from price support to direct payments to farmers. The *McSharry* reform was the most comprehensive in the earlier existence of CAP. Direct payments have become the dominant form of subsidizing producers. Right to the premium only had farmers who suddenly withdraw from the production of a certain part of the area under cereals, oilseeds and protein crops. The costs of subsidizing exports were halved, and the share of rural development is constantly increasing. However, market stability is achieved only in the first years of the reform (Đekić, 2010). Supplies of certain agricultural products and the cost of subsidizing exports continue to increase. Due to over-stimulating agricultural production and, consequently, increasing the use of pesticides and fertilizers, there was a growing environmental pollution. Quotas, taxes and tariffs in agricultural trade represented a problem for exporters to this market and were contrary to the principles of open markets and increasingly advocacy for international trade liberalization (Bogdanov, 2011). All this isn't suited to local consumers, because they had to allocate significant funds the purchase of agricultural products. Also, there was a conflict between the EU member states (Germany and Britain on one side and France on the other side) because there was a big difference between net income and net benefits from the agricultural budget.

Chart 2. Historical development of the CAP

Source: European commission, Available at: http://ec.europa.eu/agriculture/cap-history/index_en.htm

Consequently, there is a re-reform called „Agenda 2000". It was started in 1999 (The Berlin Agreement). „Agenda 2000" was a plan for the continuation of measures initiated in 1992. Agenda defines a common policy for the period since 2000 to the 2006. One of the priorities was to simplify the CAP mechanisms, as well as further support for direct payments to farmers. This is because it was thought to be that way to prevent negative effects on international trade between countries. Direct payments are more directly related to fulfilling environmental requirements of the manufacturer which affect the preservation of rural development and environmental awareness. The aim of the reform was the adaptation of the existing European model of agriculture upcoming EU enlargement, suppression of the gap in wealth and economic prosperity between the regions, and respecting the priorities in funding, taking into account the modest budget growth (Janković, 2009). There are many external factors that have caused the emergence of these reforms, including the main Doha round of negotiations within the WTO and the expected accession of new member states. Implementation of the program has led to a reduction in surplus, limiting price increase and controlling of the funds to support farmers. The reform was seeking to achieve a wide range of objectives: the concentration of agricultural holdings, increasing productivity, improving food quality policy of modernization of agricultural production, increasing income of the rural community residents, the implementation of environmental programs, development of agrarian legislation, the production of safe food. Comprehensive rural development provided a rural development, alternative and complementary activities in the rural areas, the preservation of natural resources, etc.

Another radical reform is created in 2003. In the literature it is known as „Agenda 2003" or the *Fischler* reform. The essence of this reform was further market deregulation and strengthening of rural development policy. The other objectives are: the improvement of the competitiveness of agriculture, the ecological orientation and simplification measures and mechanisms of agricultural policy. Fischler reform was conditioned by negotiations on the liberalization of world trade. The goal was to create such a policy, which will

have less distorting impact on the international market of agricultural and food products. Abolition of production-related payments to farmers should be left to market conditions. Single payment system aims to strengthen competitiveness, market orientation and provide a stable income for farmers (Marković, 2009). This reduces the protectionist character of agricultural policy, taking care of the environment, multifunctional agriculture and sustainable agricultural and rural development. In order to rationalize the use of resources from the common agricultural budget, financial discipline and respect for the limits of the budget are very important. That is why this reform is mostly supported by Germany, which allocates the most amount of money for the implementation of CAP. Such a mechanism is developed to achieve more effective control of costs, because no longer supported farmers to increase the production in order to receive higher subsidies and other benefits. Thus, the savings in the reduction of subsidies, created the funds for the promotion of rural development (modulation), and the requirements for them are: to obtain a right to protection of the environment, protection and implementation of animal welfare standards and improving the quality and safety of food (cross-compliance conditions). An important feature of these reforms was the pursuit of reducing the guaranteed prices of certain agricultural products. It is predicted the complete substitution mechanisms of support to agriculture in the direction of giving more freedom to farmers in the selection of production according to market demand. The aim was a system that is as close as possible to the market model. It is crystallized the view that agriculture provides a complement to economic production, but also exerts positive effects on the environment, rural development and social structure. It is the role of agriculture in maintaining and improving environmental quality. In aspiration of international trade liberalization, the EU carried out reduction of export stimulating measures and import protection and increase of supplemental payments from the budget of the EU member states.

Reform solutions for the period of 2014 to the 2020 will have similar goals. The priority will be to develop sustainable food production and sustainable management of natural resources. There is a widespread awareness of sustainable development that includes not only the economic component (which is reflected in the increase in productivity and production efficiency), but also an environmental component (the need to preserve the environment), as well as the social component of sustainable development (integrated rural development). In order to provide a stable income of farmers, the emphasis will be put on extra investment in research and innovation for competitiveness of agricultural holdings. It will still be supported as it will be the significant funds in the total EU budget for agriculture in the next seven-year period. On the other hand, the conditions for receiving direct payments will be more limited, or will be co-financing from the national budgets of member. Single payment system should provide greater market orientation of farmers. Young farmers would be encouraged far more because of their higher productivity and readiness for application of modern innovation (technological advances) in agricultural production. New reforms include the abolition of milk quota in 2015 and production quotas for sugar in 2017. In case of serious market distortions, CAP will provide special reserves to be paid at the expense of direct payments.

Chart 3. The CAP post-2013: From challenges to reform objectives

Source: European commission, DG Agriculture and Rural Development.

The aim of all previous reforms focused on reducing the share of the agricultural budget in the total budget of the EU, improving the competitiveness of European agriculture on a world scale and adjusting to the conditions of the world market (Todorović, Marković, 2013). For the next budget cycle funds allocated for the agricultural sector amounted to approximately 38% of the total budget, i.e. 362.79 billion (European Commission, 2013). Of this, 77% of the agricultural budget will refer to the first pillar (direct payments and market interventions), while the remainder of the funds will go for rural development. New distribution involves reducing the differences in the obtained funds (direct payments) between the member states. The EU will continue to give priority to small farms and sustainable rural development measures. The novelty is reflected in the major incentives for the less developed areas. It is certain that the CAP will lose its narrow agricultural character.

Liberalization of the international trade of agricultural products

Protectionism its powerful effects achieved in the international trade of agricultural and food products. At the same time there are pressures from many developed countries in the promotion of the free movement of products on the global market. This is because they can't overcome the barriers to export their products. Although it tends to mitigate the impact of protectionism on the world market, the fiercest resistance to its elimination comes from agricultural sector of the EU. Measures of agricultural protectionism in part affected by the developed countries, but are far more pronounced manifestation of the economic stability of the less developed and developing countries, and therefore it is a serious limiting factor of the rational international division of labour in the field of agro-industry (Vlahović, 2007). This leads to a steady increase in the share of high-income countries in world exports. Unlike the USA, which is for negotiations to liberalize world trade, the EU wants to keep the existing CAP instruments. At the global level, it causes war subsidies between these countries. It should be noted that there is no country that freely allows the import of certain products. In practice it is always present a smaller or larger degree of protectionism. The level and nature of agricultural protectionism begin to change from the seventies of the twentieth century, and about the problems in agriculture are discussed more in the context of international institutions

and organizations. In agriculture there has been a change in the policy of subsidizing until recently, and the abolition of non-tariff protection measures by the highly developed countries in recent decades, artificially created domestic agricultural empire that has low prices won the world market, on the other hand, non-tariff barriers to protect the domestic market from imports of agricultural products (Popović Petrović, 2004).

We emphasize the view that the liberalization of trade in agricultural products is conditioned by the existence of the following factors (Prekajac, 2005):

- Agreement on Agriculture of the WTO,
- Pressures on the domestic market by consumer protection organizations and organizations for the protection of the environment due to the expansion of environmental destruction,
- Internationalization of large corporations in agribusiness, which includes the expansion of production and sales networks abroad because of lower costs and better business conditions,
- International migration of farmers.

Negotiations on the trade liberalization of agricultural and food products were flowed very slowly. One of the main reasons is huge opposition to the highly developed countries of the world, primarily the EU. Conclusion of the Agreement on Agriculture, there was a certain shift. However, during the conduct of these negotiations, the countries involved in the EU CAP didn't allow a significant reduction of protectionist measures. Thus, the process of liberalization of world trade was going at a slower pace due to the high level of protection in the field of agriculture. With the establishment of the WTO, especially at the beginning of this millennium, they begin to intensify talks that are exactly related to this economic area. Agriculture is covered by the policy of the WTO, so as to require a gradual reduction of subsidies to encourage certain production. The EU has made some concessions in terms of removal of non-tariff barriers on some products and, in turn, lowering tariff rates. The aim was to significantly reduce tariffs. These requirements were primarily initiated by the USA and other countries importing food.

The General Agreement on Trade and Tariffs (GATT) was a multilateral trade agreement that was in the original sense was an interim solution until the formation of the WTO. He is as such functioned almost fifty years. New multilateral institutions in the field of international economic co-operation such as the International Monetary Fund and the World Bank, by the end of World War II initiated the negotiations for the improvement of international trade on the basis of multilateralism and non-discrimination (Bogdanov, 2004). So they made the first steps towards reducing protectionist measures. Basically, the agreement was the idea to eliminate various forms of non-tariff protection as the only legitimate measure to protect domestic production of import. This is because they are predictable and clearly defined in advance. Solutions under this Agreement predict differences in the primary trade in agricultural products and industrial products. Thus, for example export subsidies as a measure of offensive protectionism only used when it comes

to trade in agricultural products. The most important negotiations were held within the framework of the Uruguay Round in which the decision was made on the establishment of the WTO. Unlike previous multilateral agreement which was binding on countries that accept it individually, all agreements within the institution that was founded in 1994 in Geneva, were binding on all member states.

Negotiations on the liberalization of international trade have flowed from the sixties to the creation of the WTO, and have continued after the constitution of the international institutions. The most important round of negotiations and their results will be presented in the framework of the following table.

Table 1. Round of negotiations in the framework of the liberalization of world trade in agricultural products

Round negotiations	Year	The result of the negotiations related to agriculture
Dillon round	1960 – 1962.	The reduction in tariff rates for fruits and vegetables, as well as free access to the market for soybeans, cotton and oilseeds)
Kennedy round	1963 – 1967.	The abolition of customs duties on cereals substitutes
Tokyo round	1973 – 1979.	Attempts to reduce income subsidies and favourable access to markets were collapsed
Uruguay Round	1986 – 1994.	Introduced the principle of non-discrimination and national treatment and the anticipated reduction in export subsidies and domestic support to agriculture
Doha round	2001.	The gradual reduction of tariff and non-tariff barriers in the long run

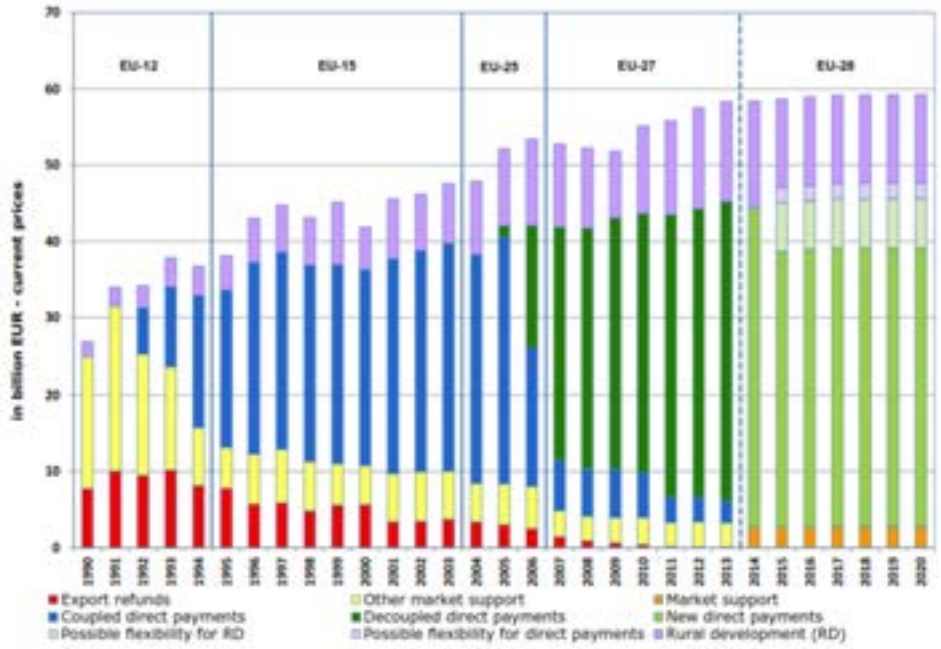
Source: Marković, 2009.

Certainly the most important round was the Uruguay Round negotiations. Upon completion of the above negotiations it is constituted the World Trade Organization. Start of negotiations was in Uruguay in 1986. Negotiations were completed in 1993, and the final act was signed in 1994 in Morocco. The world trade in agricultural products for the first time is regulated by international trade rules. The principle of non-discrimination in trade between Member States and the principle of national treatment in terms of equalizing the treatment of domestic and foreign products are adopted. Establishing a market-oriented system of trade in agricultural and food products was the desired goal of the Uruguay Round negotiations. Also, there are demands to convert non-tariff barriers in customs in order to increase transparency and reduce discrimination.

One of the priorities was the establishment of the control and reduction of domestic support to agriculture. There was a classification of support measures. The so-called green box measures which don't cause market distortions and don't provide support to prices. They are used primarily for the protection of the environment and rural development so that wasn't anticipated obligations of their reduction or elimination. The yellow box contains subsidies that cause distortions in the market by affecting the prices of agricultural products. These support measures must be reduced (for example subsidy for fertilizers). The blue box also contains measures that may not be

eliminated. They relate to payments to exclude areas from processing in the EU. *Chart 4* shows CAP actual payments from 1990-2012, commitments for 2013 and the new MFF ceiling from 2014-2020.

Chart 4. The path of CAP expenditure by calendar year (in current prices)



Source: European commission, DG Agriculture and Rural Development.

At the „Farm Week" held in Geneva (2004) were initiated proposals in the framework for future action in this area. It is adopted document „A framework for establishing modalities in agriculture", which defines the measures for the progressive reduction of protectionism in agriculture. The document includes provisions relating to export subsidies and competitiveness, market access and support domestic production. Developing countries are allowed a longer period of adjustment, as well as subsidizing transport costs and marketing costs. Special treatment for developing countries is also reflected in a gradual, slight decrease in tariffs and special treatment and inclusion of sensitive products. The least developed countries haven't had to implement any reduction, while the country is a net food importer exercised the special advantages regarding the grant of export credits and guarantees. The above provisions contribute to improving the nutritional status of the population in the least developed countries in Africa, Asia and South America.

From the above discussion, we saw that there was a willingness of the developed world to reform protectionist trade policy in this sector. Agriculture remained a key „backbone conflict" in the negotiations on the international trade liberalization.

Conclusion

Interventionism in the field of agricultural and food products was developed in agricultural protectionism with a wide range of measures, mechanisms and instruments. The aim of the policy is to improve the agricultural protectionism of domestic agricultural production and protection from foreign competition which directly influences the improvement of the living standards of farmers. The basic reasons of agricultural protectionism are the specifics of this economic activity and the importance for the population's basic needs. The reason for this is that agricultural productivity is lagging behind the development of the industry. Another important fact is the dependence of a set of natural circumstances. The necessity of state protectionism is essential because this economic activity is often composed of a large number of relatively small family farms with small financial and production power, which, on one side, has a significant role in the economic and social development of each country, and, on the other side exposed to pressure and permanent inability to survive in market economies. Such protection allows high income farmers, motivates farmers to increase production, balances economic development of certain countries and provides market stabilization.

The objectives of the EU reform of the agricultural policy have been closely associated with the need for trade liberalization in agricultural and food products. So the aim of the McSharry reform is to radically reduce the price support to farmers and to introduce direct payments which are considered less restrictive for free flow on the food market. „Agenda 2000" reduces the amount of direct benefits and binds them to conditions previously met by farmers (implementation of standards, proper manufacturing practices, plant protection, animal health and the environment). It is the so-called cross-compliance conditions payments. And the latest reform decision emphasizes the importance of free trade, and to reduce direct payments to account of the funds earmarked for rural development (modulation). Elimination of production-related direct payment provides freedom in the choice of the manufacturer what the product will produce, which a model of the EU agricultural protectionism makes more market. It is crystallized the need of respect the sustainable development strategy by investing to develop the competitiveness of the agricultural sector, sustainable management of natural resources, encouraging entrepreneurship and employing young farmers in rural areas. The final effect is to strengthen the position of the EU in negotiations within the WTO and aim that farmers produce freely, according to market demands. Hence, agricultural policy of the EU is becoming „more market". By reducing incentives for specific production, farmers are free to choose what to produce according to market needs.

The mechanism of agricultural protectionism is one of the biggest obstacles in facilitating and improving of foreign trade. CAP of the EU means a system of agricultural protection, which is made up of a combination of mechanisms: defensive protectionism, which refers to the protection of domestic production and income of farmers, and offensive protectionism which is done to encourage and provide support to the export of export-oriented farmers. Almost all developed countries (EU, USA, England) in their development applied some of the instruments of agricultural production (selective import bans, bans on exports of raw materials that are necessary for the development of the national economy, import duties, customs refund premiums, quotas).

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AGRARNI PROTEKCIONIZAM EVROPSKE UNIJE U USLOVIMA LIBERALIZACIJE MEĐUNARODNE TRGOVINE

Ivan Marković[3], Milan Marković[4]

Sažetak

Ključni cilj agrarnog protekcionizma ogleda se u zaštiti i unapređenju sektora agrara. Integralni segmenti ove politike u Evropskoj uniji jesu inicijalni model agrarnog protekcionizma i nova strategija agrarne politike koja je nastala kao odgovor na nedostatke prethodno postojećeg modela. U radu se prikazuju ključne reforme agrarne politike uslovljene kako unutrašnjim problemima, tako i pritiscima u okviru pregovora o liberalizaciji trgovine poljoprivredno-prehrambenim proizvodima. I reformska rešenja za period od 2014. do 2020. godine imaće slične ciljeve. Prioritet će biti razvijanje održive proizvodnje hrane i održivo upravljanje prirodnim resursima. Preovladava svest o održivom razvoju koji u sebi uključuje ne samo ekonomsku komponentu (koja se ogleda kroz povećanje produktivnosti i efikasnosti proizvodnje), već i ekološku komponentu (potreba za očuvanjem životne okoline), kao i socijalnu komponentu razvoja (integralni ruralni razvoj). Vođenje pregovora u sklopu liberalizacije razmene poljoprivredno-prehrambenih proizvoda vodilo je postepenom smanjenju restriktivnih mera u oblasti zaštite domaće poljoprivrede. Međutim, evropsko tržište hrane je i dalje visoko zaštićeno od inostrane konkurencije zbog mnogih osobenosti poljoprivredne proizvodnje i značaja sektora agrara za celokupno društvo. Sigurno je da će ZAP u daljem razvoju permanentno gubiti svoj usko poljoprivredni karakter.

Ključne reči: *poljoprivreda, protekcionizam, EU, reforme agrarne politike, liberalizacija svetske trgovine.*

3 Prof. dr Ivan Marković, vanredni profesor, Univerzitet u Nišu, Ekonomski fakultet, Trg kralja Aleksandra Ujedinitelja 11, 18000 Niš, Republika Srbija, Telefon: +381 18 528 658, E-mail: ivan.markovic@eknfak.ni.ac.rs; ivan.markovitz@gmail.com

4 Milan Marković, M.A., student doktorskih studija, Univerzitet u Nišu, Ekonomski fakultet, Trg kralja Aleksandra Ujedinitelja 11, 18000 Niš, Republika Srbija, Telefon: +381 64 288 51 34, E-mail: markovicmilan89@gmail.com

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FARM MANAGEMENT INFORMATION SYSTEMS: A CASE STUDY ON A GERMAN MULTIFUNCTIONAL FARM

Christoph Husemann[1], Nebojša Novković[2]

Abstract

Accurate and easy to use Farm Management Information Systems (FMIS) are of fundamental importance for a successful operational farm management. However, still today many farmers do not use FMISs for various reasons, like lack of knowledge and the complexity of many available FMISs. In particular for small to medium-sized farms and for multifunctional farms appropriate FMISs hardly exist.

This paper aims on the deduction of a concrete FMIS from a general FMIS. The concrete FMIS has to focus on the needs of medium-sized and multifunctional farms. This means that the farmer has to be empowered to allocate the scarce resources of the farm. Therefore, we picked a German farm from the state North Rhine Westphalia as a case-study to apply a system analysis. The case study farm helps to identify and to analyze relevant material and information flows, production processes, and their interconnections and synergies.

Key words: *Management, Farm Information System.*

JEL: *Q12, Q19*

Introduction

Accurate and easy to use Farm Management Information Systems (FMIS) are of fundamental importance for a successful operational farm management. Unfortunately, most farmers do not use FMISs when it comes to operate their business, despite the increasing professionalism in the agricultural sector and its increasing usage of IT technologies.
This research paper's subject are functioning FMISs for multifunctional farms that support farmers in managing their farms both effective and efficiently. Within the scope of this paper the term "Management" incorporates the following activities:

1 Christoph Husemann, Ph.D. candidate, University of Novi Sad, Faculty of Agriculture, Trg Dositeja Obradovica no. 8, 21000 Novi Sad, Serbia, Phone: +381 69 15 12 415, E-mail: christoph.husemann@yahoo.de

2 Nebojša Novković, Ph.D., Full Professor, University of Novi Sad, Faculty of Agriculture, Trg Dositeja Obradovica no. 8, 21000 Novi Sad, Serbia, Phone: +381 62 200 132, E-mail: nesann@polj.uns.ac.rs

1. Planning;
2. Organization;
3. Monitoring;
4. Controlling.

This paper's objective is to deduction of a specific FMIS from a general FMIS to support the management of multifunctional and medium-sized farms. To test the developed FMIS we have introduced it to a multifunctional, medium-sized German farm, serving as a case study.

The intended FMIS has to accurately display all branches of the farm at hand, so that the newly developed FMIS represents a valuable tool for the farmer to successfully manage his farm. Successful farm management in this context means that the farmer is capable of allocating scarce resources in a way that maximizes his profit. To empower the farmer in achieving this aim the FMIS has to master the planning, the organization, the monitoring, and the controlling of all the farm's production and business processes. Besides, the FMIS has to pay special attention to the farm's internal interdependences of the different branches of production and services. Lastly, the FMIS has to be easy to understand and to use, and to be readily adaptable. Only then the system will be most likely used by the farmer. Only if all the mentioned conditions are met the IS might be capable of enhancing the farmer's decision making process and of finally increasing his/her income.

Literature Review

The skillful and conceived management is one of the most important success factors for today's farms (Mishra et al., 1999; Muhammad et al., 2004). Only when a farm is well managed, it can generate the funds to finance its sustainable development and thereby its survival in today's fast changing environment. However, a sophisticated management is a challenging and time-consuming task, and has to be organized as efficiently as possible (Forster, 2002; Doye et al., 2000).

Reasons that explain the importance of a sophisticated farm management are certainly diverse, however, three major factors have been identified in the ongoing academic discourse (Inderhees, 2006; Sørensen, Bochtis, 2010):

1. A complex environment;
2. Complex farm structures;
3. The introduction of modern technologies to the agricultural sector (Glauben et al., 2006).

The environment the farms are involved in has become more and more complex over the past decades. Until the late 1980s it was enough to supply a society with cheap and sufficient food products. Today however, much more is expected from the agricultural sector, in particular when it comes to environmental concerns (Rohwer, 2010). Overall the agricultural business has shifted from a simple production sector to a multifunctional service sector (Schöpe, 2005). The expectations incorporate compliance with regulations to be entitled for EU subsidies (Morgan et al., 2012; Sørensen, Bochtis, 2010), new and

stricter guidelines for the use of agrochemicals (Villaverde et al., 2014), food safety (Magnuson et al., 2013) and animal welfare requirements and environmental concerns (Malcolm, 2004a; BMELV, 2004). Furthermore, agricultural production has become an international business because of the liberalization of agricultural markets (Weiss, Thiele, 2002; Mußhoff, Hirschauer 2004). Together with the decrease of shipment costs it became economically feasible to trade agricultural commodities on the world market. This development makes it possible that a farmer in one country is affected by a drought or a change of agricultural policy in another country by more volatile prices (Malcolm, 2004a; Kristensen, Halberg, 1997).

The second reason, why farm management became more and more difficult lays within the farms them-selves. In Germany the total number of farms has decreased since the 1970s whereas the cultivated area did not change substantially (© Statistisches Bundesamt, 2012). Consequently, the remaining farms have become larger to benefit from economies of scale (Nause, 2003) but they also became more difficult to manage (Glauben et al., 2006). But not all farmers reacted in the way of augmenting their cultivated area. A significant number of farmers started to diversify the business, by introducing new branches of production, offering services or by starting direct-marketing of crops (Weiss, Thiele, 2002; Horstmann, Schulze, 2011). Either way, the management of farms became more complex.

Lastly, the introduction of modern technology contributed to the challenge of sophisticated farm management. In this context modern technology incorporates in particular the usage of PCs coupled with the application of the corresponding software of the financial statements of farms, planning tasks for land cultivation husbandry etc. Additionally, many farmer introduced GPS added tractors and "smart" machinery, GIS-supported landscape modeling and other state of the art technology, making special knowledge indispensable (Linseisen et al., 2000; Zeddies, 2001). All these technologies can be combined under the expression "Wired Farm" or "Precision Farming" (Sigrimis et al., 1999).

A major outcome of the three developments described is the generation of large data volumes. To handle and to benefit from theses enormous data volumes farmers have to be capable of performing the following tasks:

1. Collection of Data;
2. Processing of Data;
3. Providing Data;
4. Using Data.

To deal with these four tasks farmers have to introduce an integrated Information System (IS) - sometimes also called DSS (decision support systems). Integrated in this context means that the IS has to be the connecting part between the farm's ERP (enterprise resource planning system) and the FMIS (management information system), (Sørensen, Bochtis, 2010). Only when an IS fulfils, both the data handling and the integration requirements it can satisfy its overall goal, namely to make the available data usable (McCown, 2002; Bryant, 1999; Kuhlmann, Brodersen, 2001), to contribute to a better decision-making process, and finally

to a better management of the farm (Fountas et al., 2005). At the end farm management is always about analyzing data and making choices in order to allocate the scarce resources of the farm in the best way (Malcolm, 2004b, Parker, 2003).

Today, most IS or DSS have a special focus. "Dairy Comp 305" for instance, is an IS especially for the herd management of milking cows (Cerosaletti et al., 2004, Enevoldsen et al., 1995), whereas MicroLEIS (Meyer et al., 2013), DSSAT (Sonam, Sawhney, 2014) are developed as very useful tools land cultivation. AFFOREST sDSS is especially developed for silvi-culturist (Orshoven et al., 2007) and StocKeeper for herd management of bulls (Grubb, 2010). Others, like FAMOUS e.g. focus particularly on huge and highly professional managed farms (Schmid, 2004). However, a well-designed and easy to use FMIS for medium-sized and multi-functional farms has not been developed yet.

Methods and Data Sources

In a first step, the authors reviewed historical and contemporary literature to analyze different general ISs. Then we examined the medium-sized, multifunctional German farm, which serves as a case study farm. The examination focused particularly on the question how this farm is organized and which kind of data is available. Therefore, we applied a system analysis to the case-study farm to identify and to analyze all the material and information flows, the production processes, and their interconnections and synergies. The data collection incorporated visual inspections (fields, animal facilities, machinery etc.), interviews with the farmer and his laborer and a thorough analysis of the farm's financial data, including balance sheets and profit and loss statements, the operating plan including spraying and fertilizing dates and crop rotation scenarios. We consequently aggregated the gathered information in a farm fact book comprising all relevant data concerning the external and internal conditions of the selected farm. Moreover, the collected data provided the basis for the development of an individual (specific/concrete) IS, which describes all relevant factors of the system like input and output prices, resources, production processes and activities, services and administration. We attached particular attention to the interconnections between the different production process to identify synergies between them these synergies might be positive and thereby increasing the overall farm profitability or they might be negative and thereby decreasing the overall farm profitability.

Result of Research

The research has started with a thorough System analysis of the case-study farm. This system analysis incorporated the preparation of "Farm fact book" as Figure 1 displays.

The "Basic information" includes details about the "Legal status", "Mode of operation", and the "Aim of operation". The examined farm is like the vast majority of German farms an independent business, meaning that the farmer is personally liable for his farm. Despite the fact that the spouse of the farm is working externally the farm is considered a "Main income farm" since the farm supplies major funds to the total household income. The "Aim of operation" is of special interest respecting the scope of this paper. Unsurprisingly, the farmer named profit maximization as one goal. Moreover he plans to further develop

"Direct marking" in connection with "Strawberry cultivation", since he considers this a growing market in the future. The most interesting point however, is the fact that the farmer himself obviously estimates that there is some optimization potential within his farm. This self-induced recognition plays a major role for the motivation later on during the introduction and application phase of the FMIS.

As for every farming business the "Natural conditions" are of vital importance. The local climate and the annual amount of rainfall provide good conditions for land cultivation. Additional most of the soil used for cultivation is of extraordinary quality.

Figure 1. Farm Fact Book

Basic information	
Legal status	Agricultural independent business
Mode of operation	Main income farm
Aim of operation	Profit maximization
	Expansion strawberry cultivation/Direct marketing
	Optimal coordination of all farming activities

Natural conditions	
Elevation	104m above sea level
Climate	Sub Atlantic climate with continental influence
Rainfall	600mm-800mm per year
Average temperature	8,9°C
Sunshine	1.435 hours per year
Soil classification No. (crop land)	64 Points
Soil classification No. (grassland)	48 Points
Terrain	Northern location on a slope of the Weltenegberge. Flat country (North German Plain)

Buildings	
Pig stall (Slatted floor)	
No. of places	750
Subfloor liquid manure storage	900m3 capacity
Animal feed silos	2, Capacity 20t (12t and 8t)
Horse stable	11 Litter bays (3 with outdoor paddock)
Barns	3 (650m2 total area)
Grain elevator	200t

Farm details	
Productive Land	91,7ha
Agricultural land	72,6ha
Forest	11,0ha
Grassland	6,9ha
Farm area	1,3ha
Husbandry	
Hogs	750
Race	Danish landrace/Pietrain
Annual production	1950 hogs
Average slaughter weight	94,5kg
Pension horses	11 (different races)

Machinery	
Tractors	2 (90 PS/83PS with Front loader)
4 mould board plough	1
Grubber	1
Rotary cultivator	1
Cambridge drum	1
Sowing machine	1
Fertilizer spreader	1
Hay rake	1
Square bales	1
Teddes	1
Mulcher	1
Agricultural sprayer	1
Straw chopper	1
Rotary mower	1
Slurry tanker	1
Manure stirring device	1

Infrastructure	
Internal Infrastructure	All buildings are located close to each other and are connected by a paved area, the pig stall is located 400m away from the actual farm and accessible over a public tarred road
	Crop area partially adjoining the farm
	Majority of cropland is located within a distance of 3 km (90% of cropland)
	Some strawberry fields lie up to 20km distant
	All crop areas are accessible by paved roads (partially dirt roads)
External Infrastructure	
Slaughter house	1,5km
Inland port	2,5km
Animal feed suppliers	25-100km
Riding School	200m

Human resources	
Permanent personnel	
Operating manager (Owner)	1
Skilled helper	1
Seasonal personnel	
Foreign pickers	15
Vendors	15

Source: Research results

The so called loess soil is one of the riches soils existing. The soil quality of the farm's location is comparable with fertile areas such as the "Soester Börde" and the "Magdeburger Börde". For the examined farm one can state that these conditions are favorable.

The "Machinery" is generally in good condition, maintained regularly and on the latest state of technology. The 85 HP tractor represents the only exception. It is more than 20 years old and although it was completely overhauled seven years ago it is not up to date. Thus the farmer intends to replace it within one year time.

The "Human resources" display three different types of employees. The farmer employs one additional full time helper. Due to the natural variation in work load between summer and winter a time account provides the flexibility needed. Beside the full time helper the farmer employs 15 foreign pickers and up to 35 vendors during the strawberry and raspberry season. Most pickers are of Polish origin whilst the vendors are mostly German pensioners, students or pupils. According to their occupational background all employees are either marginal employed or short term employed, to achieve a minimum tax charge.

"Buildings" incorporate all premises need for the production processes. The "Pig stall" was erected in 1978 and augmented in 1990 to a capacity of 750 hogs. The installation of a fully automated feeding system at the same time reduced the workload per hog dramatically. The stall serves additionally as a platform for solar panels. The 11 boxes for the pension horses are accommodated in two buildings, both build in 1975. Three boxes with outdoor paddock situated in one building, the residual ones in another. The average size of the boxes amounts to 16m2 and all are equipped with automated drinking water supply. Barely- and wheat-straw serves as litter. All barns are more than 40 years old, however well maintained and appropriate equipped for storing machinery, tools, etc.

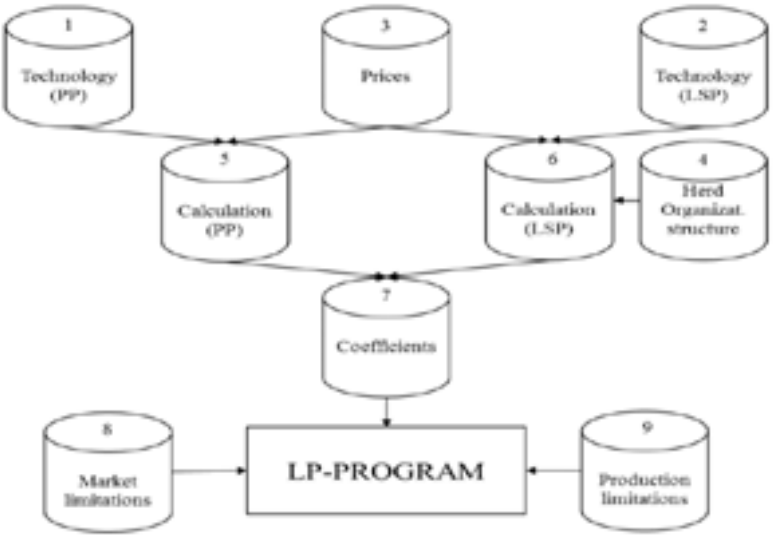
The "Farm details" display, how the 91,7ha "Productive land" are split up. As one can see the agricultural land represents by far the largest share. Forrest contributes the second largest part; however, its effect on the farm's total profitability is minor.

The "Internal" as well as the "External infrastructure" are advantageous. Concerning the internal infrastructure one can state, that all production facilities are located centrally at the farm. The majority of cultivated land is closely situated as well. Some strawberry fields represent exceptions, yet. The preference of many customers to swiftly access strawberry field for self-picking causes the wide dispersion of the fields. The "External infrastructure" provides all facilities to source raw material and to sell finished products cost efficient. The close-by riding school causes a constant need for horse boxes. The fact book provides valuable input for the setting up of the actual FMIS. It contains all the basic information needed for a germane development of the model and it helps the researcher to better understand the farm's productions processes and their interdependencies.

In a second step we analyzed three general FMIS models. Most FMIS models in literature have quite simple structure. The structure of the basic FMIS described in Figure 2 incorporates two different technologies, namely plant production (PP) and livestock production (LSP). When all activities and the input respectively output factors of these

technologies are evaluated with prices, then an accurate calculation can be conducted. In terms of livestock production the "Herd Organization Structure" has to be considered additionally. From the calculations of both the plant production and the livestock production one receives the coefficients necessary for the linear programming program (LP-Program). This program also considers market limitations (e.g. max. quality sellable of a good) and production limitations (e.g. the max. available agricultural land).

Figure 2. Basic FMIS



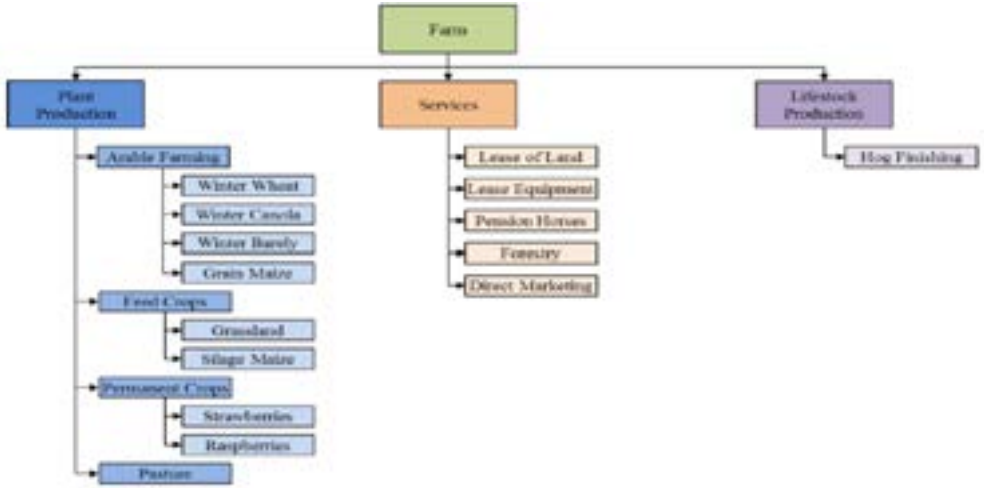
Source: Research results

The basic FMIS shown can only describe the general way of what FMISs should comprise. However, when adapted for real farms many more factors have to be considered. This statement holds unparticular true, when it comes to multifunctional farm with their complex farm structure and their internal connections between the different production process and services.

The analyzed case study farm is a good example of such a complex farm structure. As Figure 3 displays the case-study farm has three major braches, namely "Plant Production", "Services" and "Livestock Production". The branch "Plant Production" has four subunits. The first subunit, called "Arable Farming" displays the three main crops, which the farmer cultivates. These crops follow the common regional scheme of crop rotation: winter wheat, winter barely, winter canola. Grain maize is only occasionally cultivated as a surrogate crop in the case that the three main crops could not be cultivated. "Feed Crops" incorporates grassland for the hay production and grain maize, which is sold to food suppliers who meliorate and resell it as pig feed to the farmer. The pasture is exclusively used for the horses during the summer. The "Permanent Crops" are of particular importance for two reasons. Both, strawberries and raspberries contribute substantially to the total farm income. They are the only products sold directly to end consumers and they are therefore closely related to the service "Direct Marketing".

"Services" are the second major branch and consists of "Lease of Land", "Lease of Equipment", "Pension Horses", "Forestry", and "Direct-Marketing". "Forestry" and "Lease of Equipment" are of minor importance, since they only occasionally contribute to the farm's income. In contrast, "Lease of Land" is more important. Since 2010 on average more than 10 ha per year were leased to potato farmers.

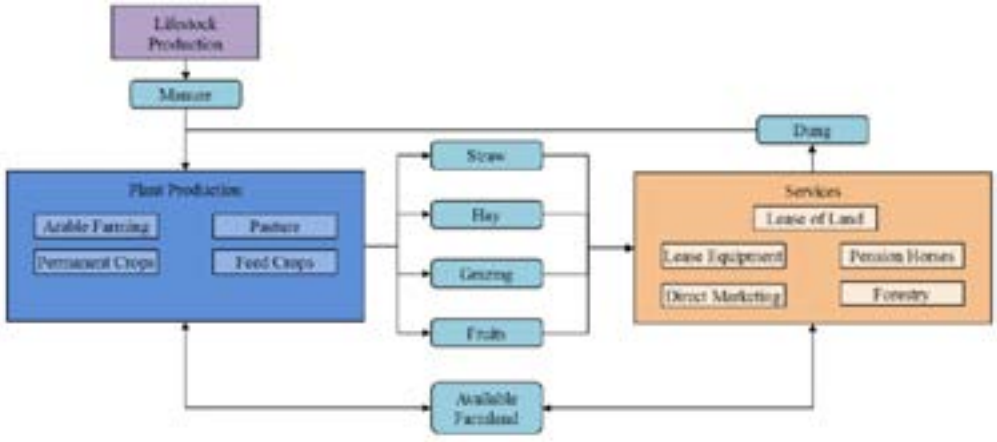
Figure 3. Farm structure of the case-study farm



Source: Research results

Also "Pension Horses" are a moderate source of income. As mentioned earlier, the "Direct-Marketing" plays a major role for the total farm income in combination with the permanent crops strawberries and raspberries. The branch "Livestock Production" solitarily deals with "Hog Finishing". The 700 place of the hog stable are the biggest source of income of the case study farm, which is totally independent of the season.

Figure 4. Internal connections of different branches of production

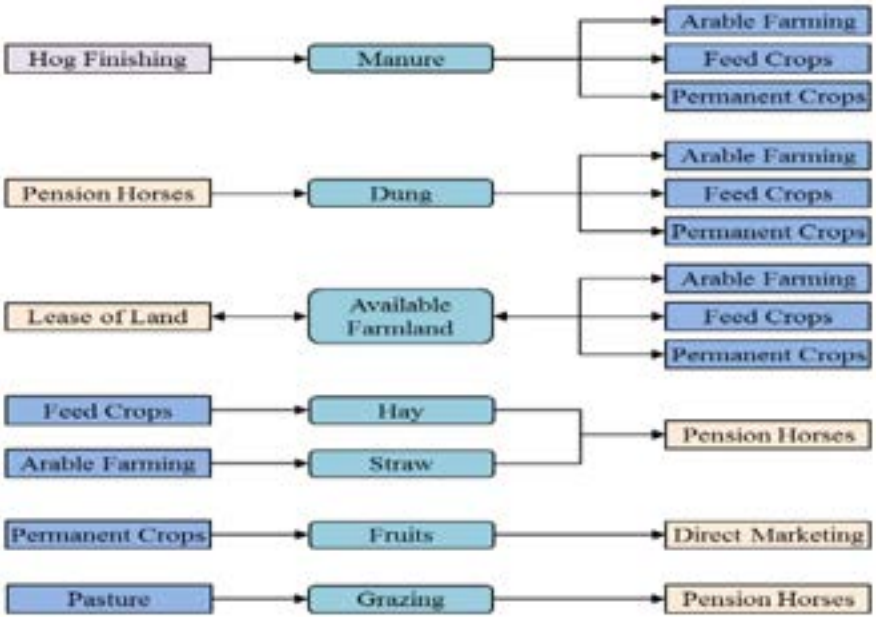


Source: Research results

The interconnection of the different production process and services are explained in Figure 4 and Figure 5. Figure 4 shows the interconnection between the main branches "Plant Production", "Services" and "Livestock Production" whereas Figure 5 displays the interconnection on a subunit level.

As one can observes in both diagrams natural fertilizer in the form of manure and dung is applied in the plant production process. The source for the manure is the "Hog Finishing" and for the dung the source is the "Pension Horses" service. The other way round "Plant Production" is providing hay, straw and pasture to the "Pension horses". A special relationship exists between "Plant Production" and the service "Lease of Land". As the double-headed arrows indicate the connection works in both directions. As more arable land is used for the "Plant Production" as less can be used for the lease to other farmers and vice versa.

Figure 5. Internal connections of different production processes



Source: Research results

Conclusion

Based on the general FMIS model and the selected data from the case-study farm we developed a FMIS that suits the needs of the case-study farm including an easy adaptation, user-friendliness, and accuracy in depicting the various production processes and services.
Our research shows that basic FMISs provide an adequate general structure and the basic functionalities for concrete FMISs. However, when it comes to an application on real farms, a lot of adjustments have to be made to depict all production processes accurately. This statement holds in particular true for multifunctional farm with their complex farm

structure and their internal interconnections and synergy effects between internal production processes and services. How much effort is needed depends on the complexity of the farm at hand.

An elaborate FMIS provides a series of advantages for the farmer. He is not any longer solitarily dependent on his "gut feeling". He becomes capable of quickly realizing divergences between the planed and the actual business performance and he can therefore apply counter measures earlier. Furthermore, he can save time on collecting and organizing data that he has to provide to authorities.

Overall, a well-designed FMIS well increase the total profit of a farm and therefore help to survive in today's fast changing and highly competitive environment.

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INFORMACIONI SISTEM ZA UPRAVLJANJE GAZDINSTVOM: STUDIJA SLUČAJA MULTIFUNKCIONALNOG GAZDINSTVA U NEMAČKOJ

Christoph Husemann[3], Nebojša Novković[4]

Sažetak

Lako i tačno korišćenje Informacionog Sistema za Upravljanje Gazdinstvom (ISUG) je od fundamentalnog značaja za uspešni operativni menadžment. Ipak, ni do danas mnogi poljoprivredni proizvođači uopšte ne koriste ISUG, zbog različitih razloga, kao što je nedostatak znanja, ili sofisticiranost mnogih dostupnih ISUG-a. Za mala i srednja multifunkcionalna gazdinstva odgovarajući ISUG gotovo da i ne postoji.

Cilj ovog rada je da od opšteg ISUG, dedukcijom, kreira konkretni (primenljivi) ISUG. Konkretni ISUG je fokusiran na potrebe multifukcionalnih gazdindinstava srednje veličine. To znači da farmeri treba tržišno da alociraju resurse svog gazdinstva. Kao primer (studija slučaja) izabrana je farma u Nemačkoj, na kojoj je izvršena sistemska analiza gazdinstva i primena ISUG. Studija slučaja na odbranoj farmi pomaže da se identifikuju i analiziraju svi materijalni i informacioni tokovi proizvodnih procesa i sinergija njihovih elkemenata.

Ključne reči: *Upravljanje, Informacioni sistem gazdinstva.*

3 Christoph Husemann, M.A., Univerzitet u Novom Sadu, Poljoprivredni fakultet, Trg Dositeja Obradovića 8, 21000 Novi Sad, Srbija, Telefon: +381 69 15 12 415, E-mail: christoph.husemann@yahoo.de

4 Prof. dr Nebojša Novković, redovni professor, Univerzitet u Novom Sadu, Poljoprivredni Fakultet, Trg Dositeja Obradovica 8, 21000 Novi Sad, Srbija, Telefon: +381 62 200 132, E-mail: nesann@polj.uns.ac.rs

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AGRICULTURAL TRADE AND FINANCING THROUGH FDI

David Jovović[1], Sandra Stojadinović Jovanović[2], Boban Dašić[3]

Summary

The role and significance of agricultural products have been changing over time, both in the world trade and in global flows of foreign direct investments. The subject of analysis in this paper will be exactly those two areas, agricultural trade and agriculture financing through foreign direct investments. Foreign direct investments can contribute to agricultural performance in different ways, bringing a number of benefits and potential positive impacts. Therefore, the paper will analyse the flows and volumes of foreign direct investments in agriculture indicating whether there is potential for these benefits to be used. The aim of the paper is to investigate the agricultural trade flows and agricultural foreign direct investment flows and volumes of foreign direct investments used for agriculture financing in order to determine whether and to what extent they contribute to agricultural performance.

Key words*: agriculture, foreign direct investment, trade, Serbia.*

JEL: *F10, F21, Q1*

Introduction

Agricultural products are extremely important in the world economy and the world trade. Although often neglected, agriculture represents a central part of development, the foundation that not only satisfies the need for food, but also provides the basis for industrial development and economic growth. It represents a significant factor of rural employment, important feature of economic growth, as well as a significant source of foreign currencies for many countries that export these products. In global trade, the role and significance of agricultural products have been changing over time, which will be the subject of analysis in the paper. The position and role of agriculture have also changed in global flows of foreign direct investments (FDI), which will also be the subject of research in this paper. These two areas – agricultural trade and agriculture financing

1 Ph.D., Associate Professor, Faculty of Agriculture, University of Pristina - Kosovska Mitrovica, 38219 Lesak, Serbia, Phone: + 381 64 5999 421, E-mail: jovovicdavid@gmail.com

2 Ph.D., Assistant Professor, Faculty of Economics, University of Belgrade, Kamenicka 6, 11000 Belgrade, Serbia, Phone: + 381 11 3021 102, E-mail: sandra@ekof.bg.ac.rs

3 Ph.D., High Economic School of Professional Studies Pec – Leposavic, 24th November nn, 38218 Leposavic, Serbia, Phone: + 381 65 6265 211, E-mail: bobandasickg@gmail.com

through foreign direct investments – will be subjected to a comparative analysis. Special attention will be paid to the issues related to Serbian agricultural trade and financing of Serbian agriculture through foreign direct investments. Foreign direct investments can contribute to agricultural performance in different ways, bringing a significant number of benefits and potential posit.ive impacts on agriculture. Therefore, the paper will analyse the flows and volume of foreign direct investments in agriculture indicating whether these potentials and resources are being used.

Materials and methods

The materials and data used in the paper come from several sources: Statistical Office of the Republic of Serbia, Central Bank of Serbia, Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia, UNCTAD data and WTO data, as well as certain professional studies and findings from relevant domestic and foreign publications. The selected data have been systematized in the tabular spreadsheet and graphs enabling the presentation and interpretation of findings related to the research subject. The applied methods include analysis of statistical data and analytical and synthetic descriptive methods and comparisons, as well as inductive and deductive methods of reasoning. The paper indicates that agriculture and agricultural trade have great significance for the world economy and world trade and that they can be influenced considerably through direct investments from abroad. Consequently, the relevant issues are related to the volume of agricultural trade and volume of agricultural FDI. Apropos that, the paper is based on two hypotheses. The first hypothesis is based on the opinion that position and role of agriculture have changed both in the world trade flows and in the world FDI flows. The second hypothesis is based on the idea that, despite the importance of agriculture, FDIs in agriculture are very small, which indicates the lack of opportunities for using potential positive effects which FDI could bring to agriculture. Therefore, the goal of the paper is to investigate the comparative movement of agricultural trade flows and agricultural FDI flows and volumes of FDI by which agriculture is financed in order to determine whether and to what extent they contribute to agricultural performance.

Trends in agricultural trade

The importance of agriculture and agricultural trade has been changing over time under the influence of economic changes in countries' economies. Rapid industrialization and structural changes in countries' economies worldwide have led to decrease of significance of agriculture and its neglect. The share of secondary and tertiary sector in GDP has been increased and the share of agriculture has significantly dropped. Although the share of value added of agriculture in world GDP is not on the high level, agriculture, on the other hand, offers significant possibilities for employment, and it also has a very important role in export of many countries (Table 1). Agriculture accounts for 1/3 of total employment in the world, and in particular regions for more than 70% of total employment. Export of agricultural products has a significant place in export of many countries. On average, agriculture accounts for 7% of total export of developed countries, 6% of total export of developing countries and 4.5% of export of countries in transition. In case of individual countries, particularly developing countries, agricultural export accounts for more than 60% of total export.

Table 1. Significance of agriculture in particular regions (%)

Region	Share of agricultural products export in total export	Share of agriculture employment in total employment	Share of value added of agriculture in GDP	Share of rural population in total population
	2002-2006	2002-2006	2003-2007	2003-2007
World	6.5	30.8	3.0	51.1
Developed countries	6.9	4.4	1.6	24.7
Developing countries	5.9	40.0	10.2	57.3
South-East Europe and CIS	4.5	17.5	6.9	36.8
South-East Europe	13.4	25.8	10.7	47.8
CIS	3.9	17.0	6.6	36.0

Source: UNCTAD (2009): World Investment Report 2009, New York and Geneva, p. 101.

Agricultural products belong to the category of primary products, which has been highly ranked in the world trade for a long time and which had a dominant place in the structure of the world commodity trade during the 19th and the beginning of the 20th century. A significant change occurred after the World War II, when the share of this category of products in the world commodity export was reduced to less than a half, more precisely from 57% in 1950 to only 22% in 2000, primarily due to a long-term price drop tendency and rapid growth of industrial products export (Kovačević, 2003). During the 20th century, the most significant change in the structure of international trade occurred, which was reflected in the fact that agricultural products no longer had the most significant role in the structure of international trade that they used to have in the first half of this century. In relation to the other two categories of products, mining and industrial products, agricultural production has had the slowest growth, which has directly influenced the slow growth of these products export and reduction of their share in the world trade. The share of agricultural products in the world commodity export in 1995 was 11.7%, and in 1999 it was 9.9% (WTO, 2004).

Table 2. World commodity export per main groups of products (billion USD and %)

Indicator	Agricultural products	Fuels and mining products	Manufactures
Value (2009)	1169	2263	8355
Share in world commodity trade (2009)	9.6	18.6	68.6
Annual percentage change			
1980-85	-2	-5	2
1985-90	9	3	15
1990-95	7	2	9
1995-00	-1	10	5
2000-09	9	11	7
2007	20	15	15
2008	18	33	10
2009	-13	-36	-20
2010	8	5.5	18.5
2011	4	1.5	6.5

Source: WTO (2010): International Trade Statistics 2010, Geneva, p. 43 and WTO (2012): International Trade Statistics 2012, Geneva, p. 21.

In the first decade of the 21st century, the value of agricultural products export was increasing continuously and in 2009 it more than doubled its value in relation to the period nine years ago, reaching 1,169 billion USD (Table 2). This was influenced by the increase of agricultural products prices after 2004. While the share of agricultural products in the world commodity export had continuously been decreasing until 2006 (from 9.9% in 1999 to 8.0% in 2006), after that it started increasing (from 8.3% in 2007 (WTO, 2007) to 9.6% in 2009), (Table 2). This was assisted by high growth rates of agricultural products export, considering that average growth rate for the period 2000-2009 was 9%, while the annual percentage change only in 2007 was 20% and it was 5% higher than the annual percentage change for fuels and mining products and industrial products (Table 2). One could say that the end of the first decade of the 21st century has brought about certain stabilization, as well as increase of the world agricultural products trade. Furthermore, in the recent period of the global financial crisis, total trade in agricultural products in the world has shown the highest resistance, having the smallest drop in relation to other two groups of products: fuels and mining products and particularly industrial products whose trade had the highest drop (WTO, 2010). The total world export of agricultural products has also had the smallest drop in relation to export drop of the other two product groups (Table 2). World export of agricultural products dropped by 13% in 2009, which is a 7% smaller drop in relation to the drop of fuels and mining products export and a 12% smaller drop in relation to the drop of industrial products export. In 2010 and 2011, agricultural export recovered; it achieved positive growth rates of 8% in 2010 and 4% in 2011, thus significantly exceeding the growth of fuel and mining products export, but still lagging behind the exports of manufactures.

FDI as a source of financing

The main feature of foreign direct investments is that capital owner retains full control over the invested capital, makes a decision on the use of capital and assumes total risk of using that capital (Stojadinović Jovanović, 2008). In order to define the term and characteristics of foreign direct investments, we will point to the definitions that were given and are used by particular international organizations that perform statistic monitoring and publishing of data on foreign direct investments on the level of countries, regions and the world.

According to the International Monetary Fund (IMF, 1993), a direct investment is a type of international investment undertaken by the enterprise – resident of one country (Direct Investor) with the aim of establishing a lasting interest in the enterprise – resident of a country different from the investor's country (Direct Investment Enterprise). A lasting interest implies the existence of a long-term relationship between the direct investor and the enterprise and a significant level of the direct investor's influence on managing the direct investment enterprise. A direct investment also includes initial transaction between two enterprises and all the following capital transactions between them and associated enterprises, both incorporated and unincorporated. Direct investor can be an individual, incorporated or unincorporated public or private enterprise, government, group of related individuals, or group of related incorporated and/or unincorporated enterprises that own the direct investment enterprise (i.e. subsidiary, associated company or a branch office) which operates in the country different from the country (countries) in which a foreign direct investor (foreign direct investors) is a resident. Direct

investment enterprise is incorporated or unincorporated enterprise to which a foreign direct investor gives a direct investment. Criteria for the existence of a Direct Investment Relationship is that the enterprise – resident of one country (foreign investor) owns 10% or more of ordinary shares or voting power in an incorporated or an unincorporated enterprise that is the resident of another country (direct investment enterprise). The direct investment enterprises that are believed to be in direct investment relation with the direct investor are also considered to be in direct investment relations with each other.

According to OECD (1996), a foreign direct investment reflects the aim of establishing a lasting interest of the enterprise – resident of one country (direct investor) in the enterprise – resident of another country (direct investment enterprise). A lasting interest implies the existence of a long-term relationship between the direct investor and the enterprise and a significant influence on enterprise management. Definition provided by OECD is entirely consistent with the definition of IMF, regarding the defining of the very term "direct investment" and all other closely related terms: Direct Investor, Direct Investment Enterprise, Lasting Interest and Long-term Relationship between enterprises, as well as criteria for the existence of a direct investment relationship of 10% (effective voting right in management, acquired through ownership of at least 10%, which means that the direct investor can influence or take part in enterprise management; it is not obligatory that a foreign investor has absolute control). According to the World Bank (2004), foreign direct investment consists of net investment inflows made in order to accomplish a lasting interest in management (10% or more of voting right) of an enterprise that operates in the country different from the investor's country. It includes equity, reinvested wages, the second long-term capital and short-term capital, as presented by the balance of payments.

According to UNCTAD (2004), foreign direct investment is defined as the investment that includes a long-term relationship and reflects a lasting interest and control by the enterprise – resident of one country (foreign direct investor or parent enterprise) in the enterprise that is the resident of a country other than that of a foreign direct investor (foreign direct investment enterprise, foreign subsidiary i.e. branch office). Foreign direct investment implies that the investor has significant influence on management of the enterprise that is the resident of another country. This investment also includes initial transaction between two enterprises and all the following transactions between them and between foreign subsidiaries, both incorporated and unincorporated. Foreign direct investments flows include capital that is provided (directly or through other related enterprises) by foreign direct investor to the foreign direct investment enterprise, or capital that foreign direct investor has received from foreign direct investment enterprise. Foreign direct investment consists of three components: equity capital – part of the enterprise that is purchased by a foreign direct investor in a country different from the investor's residence country, reinvested earnings – part of foreign investor's earnings that is not distributed as dividend, but instead serves as profit that is reinvested and intra-company loans – short-term and long-term borrowing of funds between the direct investor (parent company) and subsidiary as well as between subsidiaries themselves. Same as OECD and other international institutions, UNCTAD also uses the 10% of share in equity as a relevant criterion.

All the given definitions, although different, have certain common characteristics. In order to be considered as a foreign direct investment, an investment must be made in country other than the investor's country. Then, the investment must be made with the intention of a long-term commitment, i.e. establishment of a long-term relationship and lasting interest between a foreign direct investor and foreign direct investment enterprise. In addition, it is important that a foreign investor has a significant control and the right to influence enterprise management due to the investment. There is an agreement that the threshold of at least 10% of property or more is needed for a foreign investor to become qualified as a foreign direct investor (Stojadinović Jovanović, 2008).

Foreign direct investments in agriculture can be achieved in different manners and through different activities. Investors from abroad can be directly included in agricultural production by founding a wholly owned subsidiary. In addition, they can be buyers of agricultural products or input suppliers in agriculture. Furthermore, they can be distributors of agricultural products or can be included in jobs such as processing, trade or marketing. Foreign direct investors' share in agriculture of the country can also be accomplished through activities such as food processing, wholesale and retail, as well as various inputs supply (equipment, fertilizers, seed). Bearing in mind these different forms of foreign capital and foreign investors' share in agricultural production of a country and many other activities related to it, we can observe the significance of each form of foreign participation in agriculture. For individual countries' agriculture these are the reasons why direct investments from abroad, as one form of foreign share in agriculture, could be extremely significant and of great influence (Figure 1).

Figure 1. Types of impacts on host country's agriculture

Producing inputs and supplying them to farmers	Operating plantations or contract farming schemes	Procuring farm produce and processing	Procuring processed products and distributing
	Increasing investment and providing finance to farmers; crowding in or out domestic investment	Promoting the commercialization and modernization of agriculture	
Transferring technology through provision of inputs	Transferring technology by introducing new inputs and methods, and undertaking R&D	Involving some farmers in the value chain and providing assistance to them, but marginalizing others	
Influencing the agricultural innovation system	Influencing the quantity and quality of rural employment	Enhancing access to foreign markets and promoting exports	
	Linkages within and beyond the agribusiness value chain, and various effects on the economy at large	Competitive effects at various stages in the value chain; abuse of market power by foreign affiliates	

Source: UNCTAD (2009): World Investment Report 2009, New York and Geneva, p. 134.

The importance of FDI as a source of agriculture financing results from the fact that FDIs can bring numerous benefits to agriculture of the host country, which reflect in the fact that FDI can:

- contribute to total capital inflows in agriculture;
- increase investment and provide finance to farmers;
- influence investment in infrastructure facilities, such as: transport infrastructure, water supply, electrification etc.;
- transfer technology by introducing new inputs and methods and conducting research and development activities;
- influence the agricultural innovation system;
- intensify the commercialization and modernization of agriculture;
- contribute to diffusion of international standards respecting quality and safety of agricultural products;
- enhance access to foreign markets and promoting of exports;
- bring the different kind of linkages: linkages with suppliers (backward linkages), linkages with customers (forward linkages) and with others, producing various effects on the business activities.

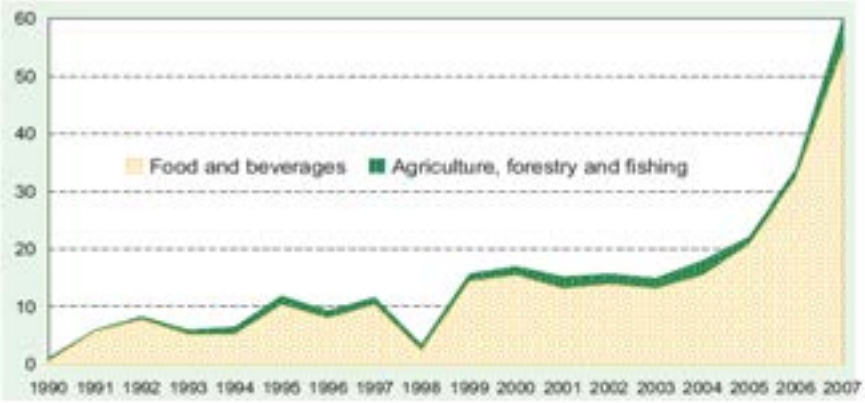
These benefits and potential positive impacts of FDI on agriculture are the reasons why financing of agriculture through FDI and inflow of this form of foreign capital into countries' agriculture is of great importance.

FDI in agriculture financing

As much as agriculture is significant in the world economy and trade, its financing through FDI is not so significant. It can be observed that in global flows of FDI, agriculture is not that important. In the first decade of the 21st century, in spite of significant increase of global flows of FDI, the inflows of FDI in agriculture could be estimated as rather modest. With the growth tendency after 1999, FDI inflows in agriculture and food and beverage production in 2007 reached 60 billion USD (Figure 2), jointly making up 3% of total world FDI inflows in that year. Within this group, there were significant differences between the two categories: agriculture[4], on one hand, and food and beverages, on the other hand, from the aspect of foreign investments inflow value. Between 1989 and 1991, FDI world flows in agriculture were below 1 billion per year, while in case of food and beverages they exceeded 7 billion USD. This trend of significantly higher foreign investments in subsector of food and beverages production has continued. Regarding agriculture, in the period 2005-2007, FDI world inflows exceeded the value of 3 billion USD per year.

4 including forestry and fishing.

Figure 2. World: FDI inflows in agriculture, forestry and fishing, food and beverages (billions of USD)



Source: adopted from UNCTAD (2009): World Investment Report 2009, UN, New York and Geneva, p. 111.

In the following periods, 2007-2009 and 2008-2010, there was a significant increase of absolute amounts of FDI inflows in agriculture, which in fact doubled, exceeding 6 billion USD (Table 3). In the period 2009-2011, FDI inflows in agriculture maintained the same level as in 2008-2010, meaning that they were twice higher than in the period 2005-2007 and more than ten times higher than two decades ago. This increase was the consequence of restored significance of agriculture, at both national and international level, as well as increased significance of a number of issues in world economy relating to 2008 food crisis, the need to meet the targets of millennium developmental goals and the rise of biofuel production. However, despite this tendency of growth of FDIs' absolute level in agriculture, they still make up less than 1% of total world FDI inflow.

Table 3 . Estimated world inward FDI flows, per selected sector and industry (millions of USD)

Indicator	1989-1991	1990-1992	2005-2007	2007-2009	2008-2010	2009-2011
Total (world)	186 549	175 803	1 471 264	1 633 357	1 432 510	1 425 507
Agriculture, hunting, forestry and fishing	623	709	3 328	6 765	6 290	6 280
Food, beverages and tobacco	7 151	7 155	40 545	69 056	70 483	45 739
Share of agriculture, hunting, forestry and fishing in world inward FDI flows	0.3 %	0.4 %	0.2 %	0.4 %	0.4 %	0.4%

Source: Authors' calculations of shares based on UNCTAD (2009). World Investment Report 2009. UN and Geneva, p. 220 and UNCTAD database, Internet, Available at: http://unctad.org/Sections/dite_dir/docs/WIR12_tab26.xls and http://archive.unctad.org/sections/dite_dir/docs/WIR11_web%20tab%2026.pdf, Accessed 20/08/2013 and http://unctad.org/en/Pages/DIAE/World%20Investment%20Report/Annex-Tables.aspx, Annex Table 26, Accessed 30/05/2014.

If we take a look at the cumulative state, i.e. stock of FDI in the world and agriculture, we will also notice that share of agriculture is very small. Total stock of input FDIs in the world in 2007 was 15,696 billion USD and in agriculture, hunting, forestry and fishing 32 billion USD, which was only 0.2% of the total stock of FDIs in the world. This implies a drop in significance of agriculture in relation to 1990, when stock of input FDI in agriculture was 8 billion USD, which was 0.4% of the total world stock of FDI (UNCTAD, 2009). In the following years, 2009 and 2010, stock of FDI in agriculture exceeded 50 billion USD, but without a significant increase of share in the total world stock of FDI (share of 0.3% was achieved)[5]. In 2011, inward FDI stock in agriculture reached 59 billion USD, which, although it was an absolute increase, did not result in increment of their share in world FDI stock but in small reduction in its already small share in total world inward FDI stock (on the level of 0.28%)[6]. On the global level, these data reflect not only insufficient attractiveness of agriculture to foreign investors, but also its declining importance.

On the level of individual countries, share of agriculture in total FDI inflows, in the period 2005-2007 went between below 1% and 15%. Thereat, it was below 1% in 17 countries, including Serbia, out of 40 developing countries that were taken into consideration. It was also observed that share of agriculture in total stock of FDI did not exceed 1% in 21 country out of 40 observed countries (UNCTAD, 2009). This indicates poor financing of agriculture through FDI on both the global level and the level of individual countries, as well as the insufficient attractiveness of this area to foreign capital.

Serbian agricultural trade and financing through FDI

Agricultural products are of special importance for Serbian economy and its foreign trade exchange. Even in the period of financial crisis in 2008, they have maintained their growth and significant role in the total export of the country. Continuous growth of the total merchandise exports of Serbia that started in 2005, was stopped in 2009, due to financial crisis, so the total export of Serbia in 2009 in absolute amount achieved the value that was below the level of 2007 (Table 4).

Table 4. External Trade Balance of Serbia (millions of USD)

Indicator	2005	2006	2007	2008	2009	2010	2011
Merchandise Exports	4 482	6 428	8 825	10 974	8 344	9 795	11 779
Merchandise Imports	10 461	13 172	19 164	24 331	15 807	16 470	19 862

Source: Statistical Office of the Republic of Serbia (2010): Statistical Yearbook 2010. Belgrade, p. 297 and Statistical Office of the Republic of Serbia (2012): Statistical Yearbook 2012. Belgrade, p. 283.

5 Authors' calculations of shares based on UNCTAD database, Internet, Available at: http://unctad.org/Sections/dite_dir/docs/WIR12_tab24.xls and http://archive.unctad.org/sections/dite_dir/docs/WIR11_web%20tab%2024.pdf, Accessed 20/08/2013.

6 Authors' calculations of share based on UNCTAD database, Internet, Available at: http://unctad.org/en/Pages/DIAE/World%20Investment%20Report/Annex-Tables.aspx, Annex Table 24, Accessed 30/05/2014.

And while the total export of Serbia was decreasing after 2008, achieving lower values both in 2009 and 2010 in relation to 2008, the export of agricultural products from Serbia was increasing continuously (Table 5). Over the last ten years, Serbia has significantly increased the value of export of agricultural products, the greatest share of which was achieved by agricultural products from the food group. Food export has accounted for more than 20% of total merchandise export of the country. Data in the following Table 5 show a continuous growth of the value of export of agricultural products from Serbia, especially food whose value of the export in 2011 reached 2,630 million USD (WTO, 2012).

Table 5. Export of agricultural products and food from Serbia (millions of USD)

	2000	**2007**	**2008**	**2009**	**2010**
Exports of agricultural products	389	1822	2100	2031	2359
Exports of food	290	1642	1906	1906	2189

Note: 2000 data refer to Serbia and Montenegro.
Source: WTO (2010): International Trade Statistics 2010, Geneva, p. 52 and 57, and WTO (2011): International Trade Statistics 2011, Geneva, p. 68 and 73.

Measures and activities undertaken in the previous period had a significant influence on such changes. Opening of EU market for agricultural and food products from Serbia, owing to Autonomous Trade Preferences from 2000, as well as numerous bilateral trade agreements with countries from the region, later embodied in CEFTA agreement, have created conditions for the increase of food export from Serbia and transformation of Serbia into a food net-exporter country. Serbia got this status for the first time in 2005, when it created a surplus of more than 150 million USD (Ministry of agriculture, forestry and water management of Republic of Serbia, 2010).

In the following period, by achieving the value of agricultural products export of more than 2 billion USD, Serbia created a significant surplus in the external trade of these products. Thus, with the achieved value of the agricultural products export of 2.03 billion USD, during 2009, Serbia created the surplus of more than 630 million USD (Zekić et al, 2010), which was the highest surplus ever achieved by Serbia in agricultural trade. In addition, the fact that share of agricultural products in total export of the country has increased to over 20% also demonstrates the significance of these products for the overall economy and foreign trade exchange of the country.

From the aspect of Serbian agriculture financing through foreign direct investments, it can be observed, however, that out of total inflow of investments from abroad, a small part goes to agriculture. Inflows of foreign capital into Serbian economy are not directed to all sectors of economy equally. Directing of foreign capital, used for financing particular sectors of Serbian economy, has suffered significant changes in the first decade of the 21st century (Stojadinović Jovanović, 2012). The sector structure of Serbian FDI inflows points out that the majority of FDI goes to financial intermediation, traffic and telecommunications, manufacturing, trade and real-estate business (NBS, 2013). FDI inflows into agriculture and food and beverages production industry are very modest. Furthermore, similar to the worldwide tendency, FDI

inflows in agriculture are significantly smaller than FDI inflows in food industry. Foreign investors are much more attracted to the production of food and beverages, with the annual FDI inflow value that, in some years, was up to ten times higher compared with agriculture sector (Table 6). In the period 2004-2012, agriculture sector accounted for 0.2% to 1.6% of total FDI inflow in Serbia, while food industry accounted for 0.79% to 13.45%. A very small share of agriculture indicates lack of attractiveness of this sector in Serbia and lack of interest of foreign investors for investing in it.

Table 6. FDI inflows in agriculture and food industry of Serbia (thousands of USD)

Year	Total FDI in Serbia	Agriculture		Production of food products and beverages	
		FDI	Share in total FDI (%)	FDI	Share in total FDI (%)
2004	987 239	9 449	0.95	97 759	9.90
2005	1 616 438	11 578	0.72	65 132	4.03
2006	5 425 147	11 345	0.21	78 370	1.44
2007	3 921 220	20 970	0.53	133 688	3.41
2008	3 602 980	57 908	1.61	147 944	4.11
2009	2 497 697	29 288	1.17	335 974	13.45
2010	1 519 490	14 556	0.96	71 167	4.68
2011	3 125 274	13 675	0.44	85 687	2.74
2012	355 287	1 030	0.29	2 807	0.79

Source: Authors' calculation based on the data of the National Bank of Serbia, Internet, Available at: www.nbs.rs, Foreign investments by industries, Accessed 25/08/2013.

Similarly to the worldwide tendency, in Serbia, as well, growth of absolute values of FDI inflows in agriculture did not bring the increase of their share in total FDI inflows in the country. Before 2008, i.e. before the world financial crisis, absolute amounts of FDI inflows had been increasing, but their share had not exceeded 2% of total FDI inflows in Serbia. After that, FDI inflows in agriculture significantly declined and in 2010 they accounted for less than 1% of total FDI inflows in Serbia, and in 2011 less than 0.5%. With significant decline of total FDI in Serbia in 2012, there was also a significant decrease of FDI in agriculture on the level of only 0.3% of total FDI inflow in the country. In the observed period, the lower share existed only in 2006.

Foreign direct investment inflows in agriculture reached their maximal value in 2008, and they amounted to 58 million USD, i.e. 336 million USD in food industry in 2009. After that, they suffered a drastic decline. These inflows in agriculture of Serbia were reduced for more than a half in 2010 and they kept declining in 2011, while the inflow of foreign direct investments in food industry was almost five times smaller in 2010 in relation to 2009, after which there was a mild increase in 2011, but that level was still rather low and four times smaller than in 2009. This resulted in the fact that in 2011, in relation to 2010, share of agriculture as well as food industry in total inflows of foreign direct investments into the country was halved, still demonstrating rather small or even diminished attractiveness of this sector for foreign investors and inflows of direct investments from abroad.

Although the agricultural production is of vital importance for economic development and growth of Serbia, FDIs directed to agriculture of Serbia are rather modest. Most FDIs are directed to services sector and they have no significant effect on agricultural production and export of agricultural products of Serbia. All this was also affected by the fact that for a long time Serbia has not had a clearly defined strategy for foreign direct investments; therefore the encouragement of FDI inflow in agriculture did not get any special attention. Strategy of stimulation and development of foreign investments (Vlada Republike Srbije, 2006). of the Government of the Republic of Serbia represents the most significant document in this field; however, it also failed to give sufficient attention to directing foreign investments towards agriculture in the sense of providing detailed and accurate measures and instruments for proper action. In the draft of the National programme for agriculture of Serbia (Ministry of agriculture, forestry and water management of Republic of Serbia, 2010), increase of investments in agricultural and rural sector was foreseen as one of specific priority goals for the period 2010-2013, but no actual steps for carrying it into effect were given.

Conclusion

Comparative analysis of agricultural trade on the global level, as well as on the level of Serbia, has shown that agriculture has a significant place both in the overall world trade and in trade of individual countries, as well as in Serbia. On the other hand, despite its significance in the overall, global economy and trade, as well as on the national level of individual countries, agriculture is not sufficiently attractive for foreign investments, which is why it is characterized by low FDI inflows. Insufficient attractiveness for direct investments from abroad is the observed characteristic of agriculture on the global level as well as on the national level of individual countries. Low level of FDI in agriculture, both on the global level and on the level of Serbia, points to the fact that direct investments are not sufficiently present in agriculture, and also that in this way possible positive impacts that this inflow could have on agriculture are not used either.

The paper has shown that FDI can contribute to agriculture in different ways, indicating the benefits and potential positive impacts on agriculture. However, small attractiveness of agriculture for FDI inflows and the small volumes of FDI in agriculture lead to the conclusion that these resources and their potentials have not been exploited. By recognizing potential benefits and taking measures for attracting and increasing investments in agriculture, possibilities for achieving potential positive effects, which this investment inflow in agriculture could bring, would be created.

Therefore, one of the important aims of national economic and FDI policies should be improvement of participation of FDI in agriculture and food industry. In order to do this, certain proposals may be made:

- regarding specific features of agriculture and agricultural production, national FDI policy should include a special part that would deal with FDI in agriculture in order to give special attention to this kind of FDI;

- situation in national agriculture and essential agricultural issues such as: agrarian structure and the level of agricultural producers' organisation, the level of regulation of agricultural market and the role of state, the level of rural development as well as the level of competitiveness should be given highlighted importance in order not only to improve the situation in agriculture, but also to improve attractiveness of agriculture for foreign investors;
- regarding the specificity of agriculture in the sense of dependence on nature and subordination to natural conditions, the issue of insurance - the possibility and conditions under which it can be made - comes to the fore;
- as in other areas, national FDI polices should also include some kind of (fiscal, financial and other) incentives for FDI in agriculture, in order to attract foreign investors in this sector;
- improvement of FDI participation in agriculture and food industry can not be achieved in isolation; instead, it must be done in the context of the improvement of total macroeconomic environment of national economy - its macroeconomic indicators and investment climate indicators.

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TRGOVINA POLJOPRIVREDNIM PROIZVODIMA I FINANSIRANJE PUTEM SDI

David Jovović[7], Sandra Stojadinović Jovanović[8], Boban Dašić[9]

Rezime

Uloga i značaj poljoprivrednih proizvoda su se menjali tokom vremena, kako u svetskoj trgovini tako i u globalnim tokovima stranih direktnih investicija. Predmet analize u radu će biti upravo ova dva aspekta, trgovina poljoprivrednim proizvodima i finansiranje poljoprivrede stranim direktnim investicijama. Strane direktne investicije mogu doprineti odvijanju poljoprivrede na različite načine, donoseći određene koristi i potencijalne pozitivne uticaje. Stoga će rad analizirati tokove i obime stranih direktnih investicija u poljoprivredi ukazujući da li su potencijali za ove uticaje iskorišćeni. Cilj rada je da istraži tokove trgovine poljoprivrednim proizvodima i tokove i obime stranih direktnih investicija kojima se poljoprivreda finansira kako bi utvrdili kako i u kojoj meri oni doprinose odvijanju poljoprivrede.

***Ključne reči**: poljoprivreda, strane direktne investicije, trgovina, Srbija.*

7 Dr David Jovović, Vanredni profesor, Poljoprivredni fakultet Univerziteta u Prištini – Kosovska Mitrovica, 38219 Lešak, Srbija, Telefon: + 381 64 5999421, E-mail: jovovicdavid@gmail.com

8 Dr Sandra Stojadinović Jovanović, Docent, Ekonomski fakultet Univerziteta u Beogradu, Kamenička 6, 11000 Beograd, Srbija, Telefon: + 381 11 3021 102, E-mail: sandra@ekof.bg.ac.rs

9 Dr Boban Dašić, Visoka ekonomska škola strukovnih studija Peć - Leposavić, 24. novembra bb, 38218 Leposavić, Srbija, Telefon: + 381 65 6265211, E-mail: bobandasickg@gmail.com

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THE ROLE AND POTENTIAL OF INFORMATION TECHNOLOGY IN AGRICULTURAL IMPROVEMENT

Slavoljub Milovanović[1]

Summary

The agro-industrial sector in developing countries is faced with challenges, such as requirement for increase of food production and yield and creation of opportunity for employment of rural and poor population. In addition, the agricultural sector is influenced by global factors and fast changes. These facts indicate that there is great need for information and information technologies (IT), which can be used to cope with the challenges and changes and to improve agricultural production and marketing. However, the potential of IT is not fully utilized in agriculture. Implementation of IT in agricultural sector and rural areas is relatively slow in comparison to the other sectors of the economy where contemporary IT has been implemented at high speed. The aim of the paper is to analyze role, potential and contribution of IT in agribusiness and to explain opportunities for use of IT in many fields of agricultural sector. Our findings are based on economic theory and available literature, and they suggest that IT has great potential for supporting farmers and the other stakeholders in improvement of efficiency, effectiveness and productivity of agriculture. However, the stakeholders have to cope with many limitations and problems in IT implementation and use.

Key words: *Information and communication technologies, agriculture improvement, agribusiness electronic commerce.*

JEL: *M15, Q10*

Introduction

Agriculture plays a significant role for economic and social development in most undeveloped countries. Reasons for this include issues of food security and health of people, requirement for increasing yields and food quality improvement. Challenges in agricultural development of every country are great, not only because of fulfilment of increasing demand for food, but because of poverty and malnutrition reduction. Issues are also made more complex as agricultural sector development should be achieved on sustainable manner considering natural environment protection.

1 Professor, Ph.D., University of Nis, The Faculty of Economics in Nis, Trg Kralja Aleksandra 11, 18000 Niš, Phone: +381 64 322 73 82, E-mail: smilovan@eknfak.ni.ac.rs

Currently farmers are faced with narrowing profit margins – costs of many inputs like fertilizers and fuel have increased, while product prices have remained fairly constant or even dropped. Increased globalization and market deregulation increase pressures on many smallholder farmers in developing countries. In order to use full effect of these global changes, politics of agricultural products pricing, marketing and trade must be revisited. At the same time, mechanisms for technology transfer must be revisited and revitalized under changed conditions.

In previous decades, significant transformation of agricultural sector is happened. In past, agriculture was driven by bid, but today it is driven by demand. However, we may say that agriculture will be driven by information in the future. New information have to reach end-users very fast in order to use potential opportunities and achieve benefits. Information on seed, water, nutrients and plant protection is one of the main factors for successful farming. Information-intensive and precise techniques of farming based on knowledge are going to be lead factors of sustainable agricultural production. Consequently, farmers should be aware of benefits from internet and the other information and communication technologies (ICT) giving information services that are significant for management of agricultural production. The economic potential of ICT use in agriculture is not fully utilized. Examples include precision farming and livestock management where ICT could facilitate more efficient decision making not only for managers of enterprises related to agriculture, but also for policy makers (Kaaya, 1999; Phougat, 2006).

The potential contribution of ICT to agriculture can be viewed through cost reduction, increase of efficiency and productivity improvement. Foremost, information requirements of farmers should be analyzed and documented and then adequate information systems (IS) should be developed. In development of the systems, focus is on new challenges made from deregulation and globalization of agricultural sector (Samah et al., 2009).

Our review of issues of two worlds (The European Review of Agricultural Economics and The American Journal of Agricultural Economics) and one national agricultural journal (Economics of Agriculture) in last five years shows that implementation and use of ICT as a topic is very rare. In these issues, two papers treat accounting (Zoranović, Vukoje, 2008) and statistical (Odeh et al., 2010) software that can be used in agriculture and two papers (Roe et al., 2011; Diekmann et al., 2008) analyze use of internet auctions in trade of agricultural inputs and outputs. On the other hand, there are IT journals dealing with IT influence on economy and society that also treat IT support to agriculture. The journals mostly publish articles studying implementation and expansion of digital networks in agricultural and rural areas (Blattman et al., 2003; Nicholas, 2003; Ramírez; 2007; Press, 2005; Díaz, Urquhart, 2009).

Obviously, there is gap between requirement for research of role and potential of ICT in agriculture and number of published research papers on the theme. Motivation of this review paper is to reduce the gap, particularly in the Balkan academic research environment. Implications of the research are on farmers, policymakers and researchers. Farmers could get useful knowledge and information about potentials of ICT in management of their crops

and livestock. Policymakers with responsibility of agriculture improvement could get ideas about methods of facilitating implementation of ISs in agricultural sector. Finally, researchers should have conceptual framework for deep investigation of specific contributions of ICT to agriculture improvement and specific problems in ICT implementation and use.

As mentioned earlier, this paper aims to give a theoretical contribution in study of ICT role and potential in providing of information support to the agricultural sector with specific focus on e-commerce in agribusiness, and limitations in ICT implementation, and elimination of the limitations. In order to meet this aim, the paper is structured in six parts. After introductory remarks, information basis of agricultural production is presented. In the third part of paper, direct and indirect contributions of ICT to agriculture improvement are analyzed in brief while ICT use in EU agriculture is presented in the fourth part of paper. Possibilities of internet technology use in electronic commerce of agricultural products are explained in the fifth part of paper. The sixth part of paper deals with limitations in implementation of ICT in agricultural sector and possible solutions for the problems. In the last part of paper, conclusions related to ICT use in agriculture are presented.

Information support to agricultural production and marketing

Information of adequate quality is necessary condition for improvement of all areas of agriculture. The importance of information is particularly high in countries on the verge of entering larger markets. This is for example the case for many Balkan and former communist countries in Eastern Europe where accession to the European Union is an issue. Agriculture in these countries is faced with deregulation that represents logical implication of process of integration to European Union which reinforces need for timely and relevant information, in order to make decisions in agricultural sector and the other sectors related with it as suppliers of inputs for it or as buyers of agricultural products and raw materials.

Improved communication and access to information are directly related to the socioeconomic development of every country. Agribusiness is a economic area that has great potential for ICT use in aim of social and economic development of agricultural population (community) and rural regions. However, farmers still have problems to get important information in form that is understandable for them in order to make timely decisions for agricultural production improvement. With improved evidence of data, detailed analysis of costs and sophisticated marketing strategies, farmers will be able to make better decisions and greater profits. In addition, implementation and use of ICT can significantly support increase of competitiveness of theirs husbandries (Cecchini, Scott, 2003; Courtright, 2004).

In order to improve agricultural production, farmers should have following information:

Information on crops - Following information from field can be collected and transferred via internet in database server: categories of seeded crops, size of land with specific crops, time of dropping seed, time of harvest, yields etc. The information is analyzed to create statistical reviews and tables that can be accessed by farmers through internet with ordinary web browser. Farmers can make their own production plans based on the information.

Information on production techniques developed by experimental agricultural institutes and stations for agriculture improvement can be collected and integrated. The information is made available to farmers through internet and the other channels.

Information on production equipment and agricultural inputs - The information is gathered from enterprises selling equipment for soil processing and other production equipment, seed and the other agricultural inputs. Information collected in such way is offered to farmers.

Market information - In order to support farmers in gaining the best prices for their products, information on market of various agricultural products should be created. Aims of market information activities are to show review of prices on various markets and to facilitate reorientation of farmers' production to markets where better prices are expected. Farmers need overall reviews of food market information. The reviews present valuable information on some most important import and export markets. IT can support to provide forecast information on main agricultural products in subsequent years. Such information helps farmers and traders to make decisions when and how to sell their products (do they sell just after harvest or do they store products in expecting higher season prices). In combination with the other data (for example, available budget of the farm enterprise) such information can be used for decision making about crops which should be produced in next season.

The other information of interest for farmers and their families - Examples of such information includes weather forecast, availability of credit, and expert advice about maintaining crops in healthy state, etc.

There is no doubt that improved information flow has positive effect on the agricultural sector and individual producers, but gathering and distribution of information is difficult and expensive activity. ICT offers capability for increase quantity of information that is available to all stakeholders in agricultural sector and for reduction of information distribution costs to all interested users. ICT can obtain the information to farmers, even when they are in remote places.

Farmers need ICT applications supporting operative aspects of agricultural production for increase of productivity (applications for real-time decision making based on broadband wireless internet, e-mail and chat applications enriched with pictures, video clips and sounds, etc.). These applications are going to play great role in operative management of agricultural production in future. A good example of ICT use for agriculture improvement is mobile communications. This ICT is used as a tool for access to market information (prices), weather forecast, advice of agricultural experts, etc. Today, it is most accessible technology that is available to great number of people including marginalized people in remote, rural areas. All these technological changes give advantage to farmers in creation of effective and inexpensive agricultural production and marketing programs and give opportunity for reduction of poverty and improvement of their life quality (Gorla, 2009).

Contribution of ICT to improvement of agricultural sector

The potential of ICT in agricultural sector can be used on two ways: 1. directly, where ICT is used as a tool that contributes directly to productivity of agricultural production, and 2. indirectly, where ICT is used as a tool that provides information to farmers for making quality decisions in efficient management of their enterprises.

Direct contribution of ICT to agricultural production - Precise farming that is popular in developed countries is based on intensive use of ICT and it contributes directly to agricultural productivity. In order to increase agricultural production, techniques of remote sensors with support of satellite technology, geographic information systems (GIS), agronomics and soil science are applied. ICT supports farmers to track and react to weather condition changes on daily basis. Meteorological stations on field supplied with solar energy can be connected to computers of farmers in order to send information on current temperature of air and soil, rainfall, relative humidity of air, moisture of leaf, moisture of soil, length of day, speed of wind and solar radiation. All these techniques and technologies of precise farming require great capital investments which are payable for big farms. They are appropriate for corporate farming while they are less suitable and efficient for small enterprises and farms.

Indirect contribution of ICT to agricultural production - Indirect benefits of ICT are manifested in enabling of farmers for decision making and should be realized in the future development of agriculture. Farmers need timely and reliable sources of information that is explained in previous section of paper. Presently, farmers depend on conventional sources of information that are unreliable and do not give timely information. Changes in the agricultural environment that farmers face make information not only useful but necessary for them to stay competitive and survive on globalized market.

However, efforts on providing of the information will be wasteful if farmers are not able to use ICT. In order farmers to use internet services for searching useful information and communication, elementary computing literacy is required. Through internet, they can track prices and communicate with colleagues around world as often as they want. They can exchange ideas, ask questions and get answers on specific themes. Of specific importance is receiving advices from researchers and agronomists on cultivation of crops and animals. ICT influences on reduction of gap between agricultural researchers and farmers that leads to high developed agriculture having enormous contribution to national economy and society.

ICT use in agricultural sector of EU

Detailed statistical data about ICT use and contribution to the agricultural sector in EU and Serbia is hardly available. However available the country reports relating agricultural firms and farmers shows that internet access is different from country to

country in range between 20 and 95%. Statistical data shows that in January 2009 in average 93% of all enterprises in the EU had access to internet. Mobile internet connections were used by 28% of all agricultural firms in the EU. The lowest percent of mobile internet connections is in Greece, Cyprus and Romania (Smihily, Storm, 2010).

Considering the basic level of access to mobile communication infrastructure, the usage of mobile phones and even smart phones (with web applications) is high and it is expected to increase extremely in the coming years. Statistical data (Smihily, Storm, 2010) shows that more than 90% of farmers using mobile devices in countries like Italy, Ireland, Spain but percent of internet access by PC in those countries is relatively low. In these countries, mobile devices are more used as cell phones for call and SMS communication than for mobile applications supporting business transactions based on data communication. Expert estimate the usage of mobile application for business purposes between 2-5% in these countries.

Precision farming (PF) can be used as measure of farm automation. PF is implemented to a small extent by farmers in the most EU countries. PF and use Geospatial data are only in experimental (research) phase in some developed EU countries. There is a important difference in countries across Europe (for example, Western and North Europe). The case of Czech Republic is good example of progress in PF development. Manufacturers of agricultural machines are the key promoters of implementation of PF techniques in developed countries such as Germany, Denmark, Netherland and Finland (Teye et al., 2012).

In many countries in Europe data integration at intra-enterprise and inter-enterprise level is very weak. The availability and accessibility of (broadband) internet in rural areas is an issue in most countries. There are unions or bodies who take care of the organization of dataflow or data standardization in some countries like Germany, France, Denmark, Belgium and Netherland, but some countries do not have these bodies. Collaboration between private and public organizations to advanced ICT infrastructure is low in countries such as Slovakia, Romania, Lithuania and Czech Republic.

ICT development and use is critical issue because of lack of young people in agriculture. It is case in European countries such as Slovakia, Bulgaria, Italy and others. Countries having many small and probably poor farmers have some problems in the capabilities of investing in farm automation. Some countries with fast growing agricultural sector such as the Baltic States have high potentials referring the implementation of new ICT infrastructure because they have not legacy of old systems and infrastructures. Availability of broadband internet in rural areas is very often mentioned as a main factor influencing ICT development and use in agriculture. A summary of the level of ICT and agricultural technology development and use in some of the EU countries and Switzerland is presented in Table 1.

Table 1. Level of ICT and agricultural technology use in the EU countries and Switzerland

Country	Farm PC	Inter-net	Farm Info. Sys.	Phone	LPIS rele-vance	Geo-fertilizing	Animal registra-tion	Data Exchange Level of Develop.
BGR	Low	Low	Low	-	Average	-	-	Hardly any
CZE	High	High	High	Low	Average	Average	-	Averagely
DNK	High	High	-	High	High	Average	High	Well
EST	High	High	Ave-rage	-	Average	Low	Average	Poorly
FIN	High	High	High	High	High	Average	High	Well
FRA	High	Ave-rage	Ave-rage	High	High	Average	High	Well
HUN	Ave-rage	Ave-rage	Low	Low	Average	Low	Average	Poorly
ITA	Ave-rage	Low	Ave-rage	Ave-rage	Average	Average	High	Average
LVA	Low	High	Low	-	Average	Low	High	Poorly
NLD	High	High	High	High	High	Average	High	Well
POL	Ave-rage	Ave-rage	Ave-rage	-	Average	Low	Average	Hardly any
ROM	Low	Low	Low	Low	Average	-	Average	Hardly any
SVK	High	Ave-rage	Low	Low	Average	Low	Average	Poorly
SVN	Low	Low	Low	Low	Average	-	Average	Poorly
ESP	High	-	Ave-rage	Low	High	Low	High	Averagely
SWE	High	-	-	High	High	Low	High	-
CHE	High	Ave-rage	Ave-rage	Low	Average	Low	High	Averagely

Source: Teye et al., 2012.

Electronic commerce in agricultural sector

ICT gives opportunity to farmers to extend their market and to gain new customers through the Internet. The Internet improves communication and creates business opportunities for agricultural communities which in the past have operated in relative isolation in remote rural areas. Farmers, researchers, cooperatives, suppliers and buyers can use internet to exchange ideas and information and to govern business as well. Machinery, chemicals and the other types of agricultural inputs can be bought and sold electronically. People can search for jobs and employers can seek new workers through internet (Henderson et al., 2006)

The internet appears to have two roles in agribusiness: as a market venue and as a new source of information. Many internet applications are developed by various interested groups. Applications related to electronic markets can be categorized from farmers' point of view according to following areas: 1. production factors and inputs, 2 services and 3 outputs. Services, production factors and inputs can be provided mainly through internet by fixed prices, while outputs usually can be sold on auctions. This is because many outputs are perishable products, so market prices are sensitive to changes in bid and demand (Cloete, Doens, 2008; Manouselis et al., 2009).

Production factors and inputs - This application area is related to internet sites through which buyers and suppliers can trade by all things of importance to agriculture, such as land, chemicals for plant protection, agricultural equipment and machinery and fertilizers.

Services - This area of internet use relates to web sites offering electronic services related to logistics, transport and warehousing. The other services that are offered to farmers are: financial services (lending money), insurance services, legal services (advices) etc.

Outputs - As we already mentioned, application on the output side are usually in form of electronic auctions. Some of these typical applications are related to auction web sites for trade by cattle, hay, fish and special market products such as vine and nuts.

Internet applications that are information-oriented can be categorized by following areas: providing information, management tools and liaison with regulatory bodies.

Providing information - This service concerns–obtaining information content from following sources: electronic agricultural magazines, web sites offering market information and analyses, on-line weather reports and recommendations of agricultural experts.

Management tools - These are on-line tools including calculators, data base tools, tools for specific information tracking, analytical tools and electronic forms. Examples for calculators are: calculator of profitability in production of veal, calculator of milk quotas, calculator of loans and credits. Tools for information tracking and analysis can be found in accounting application packets. Also, representative data base applications can be found on data base software markets.

Liaison with regulatory bodies - Many web sites obtain links to regulatory bodies that create official publications, reports, official pronouncement for media, etc. Examples for typical regulatory bodies are: Ministry of agriculture, European Commission, OECD, World Trade Organization, etc.

Therefore, as the Internet becomes popular among people dealing with agribusiness, more and more it is becoming basis for electronic commerce (e-commerce) with agricultural products and inputs for agricultural production. Participation in e-commerce implies that buyers and vendors are able to effectively use adequate software and hardware. In e-commerce, transactions between agricultural enterprises (B2B -Business-to-Business) are more prevalent in comparison with transactions between agricultural enterprises and individual farmers (B2C -Business-to-Consumer). Reasons for such state in agricultural e-commerce are lower acceptance of new ICT and internet by farmers. In next section, we are going to explain in more details reasons for low acceptance and use of ICT in agricultural sector.

Limitations in implementation of ICT and possible solutions

Except the great potential that ICT has in improvement of agriculture, there are some limitations that can make implementation and expansion of ICT in agricultural sector difficult. Some researches (Rao, 2003; Mittal, 2012) explain factors and limitations preventing effective implementation and use of ICT in agricultural sector and rural areas. These limitations include:

Lack of awareness about benefits of ICT - Many people in rural areas have no-computer and internet access. This contributes to their lack of awareness of the benefits from using

ICT. On the other side, providers of ICT and policymakers are sceptical about ability and willingness of the rural population to accept and use of ICT. As a result, there are small number of projects that improve implementation and use of ICT in agricultural sector and rural areas.

Uncoordinated and chaotic development of systems - If we take into account huge volume of work related to information systems (IS) development for improvement of agriculture, coordination mechanism in form of specialized agency should be created. Aim of the agency is to concentrate efforts on support to agricultural community. Such coordination agency can have only consultative role in following areas: user interface, overall design of system, mechanism for content delivery and standards for setting of information kiosks.

Easiness of system use and language barriers - Success of strategy of ICT implementation in agriculture depends on easiness of system use by rural population. In many instances, ISs supporting agriculture are not easy to use and there is lack of appropriate internet information contents suitable to needs and abilities of rural population. This requires intuitive presentations based on graphics. In addition, touch screen information kiosks should be installed in order to encourage greater participation of rural population in using of ISs. Moreover, there is a language barrier for large segments of the rural population to use systems. In order to solve this problem, commands of applications should be translated to native language and fonts for native language and mechanism for content synchronization should be installed.

Connectivity - Cost of computers and fees for internet access are still high for the most rural population that is poor in developing countries. In addition, availability of internet access is low in rural areas because Internet Service Providers (ISP) delivers services mainly in urban centres. Although great advancement is made in several past years, connectivity in rural areas should be improved. Reliable network connection is prerequisite for successful implementation of ICT in rural areas. Many private ISPs have installed huge networks connecting great cities and towns. As these networks are going through rural areas, it is possible to provide connectivity for great number of villages. There are several technologies to make connectivity in remote rural areas without fixed telephone network. Presently, cellular telephone network appears as the most appropriate wireless medium for connection of remotest villages while satellite technology is very expensive.

Bandwidth of network - Even where telephone and the other communication services exist, available bandwidth can be limitation for effective use of networks. Whereas internet services for rural and agricultural areas require intensive use of graphics, low bandwidth of network can be main limitation for providing of electronic services to farmers. Storage of static information in kiosks and transfer dynamic information from remote locations could be solution for the limitation.

Points for information distribution - Massive use of information kiosks is critical for effective use of internet contents and services. Such kiosks should be designed as electronic supermarkets. In addition to serving as information sources these kiosks provide, other services to people who live in rural areas including distance learning, training, rural e-mail centre, chat sessions with experts, and e-government. Government can obtain financial

support for unemployed graduates of agronomy who live in rural areas who could play role of efficient liaison with low educated rural users of systems. Aims of these actions should be transformation of rural information kiosks to communication gateways for farmers and the other rural population.

Idea of engaging unemployed graduates of agronomy as liaisons and instructors for low educated rural users of systems is presented by Mittal, but is not further developed by the other researchers. In spite of scarce public funds and budgets in the time of economic crisis, the government could obtain time limited sponsorship of firms that employ unemployed graduates to make ICT use expands. After this limited time period firms employing these graduates would decide whether to keep these graduates or not. However this time period can be used for implementation of the most needed applications which provide increased profitability for both farmers/farm enterprises and for firms employing these graduates. Profitability of such applications and systems would provide venture capital, and make it possible to gradually phase out government financial supports to these firms. In addition, great number of poor educated farmers would get opportunity to acquire knowledge and skills for ICT use.

Responsibility for implementation of ISs in agricultural sector - Collective and coordinated effort of many stakeholders is necessity for creation of specialized web sites and portals in agriculture. This task is so great that it cannot be done by only one institution and organization. Main stakeholders in the agricultural sector such as the fertilizer or food industries should join effort in achieving of the task. As already mentioned, government can initiate creation of coordination agency where various stakeholders join efforts in expansion of computing culture in rural areas and in same time gain benefits from efficient operations taking place in computing environment. Various stakeholders should create appropriate private-public partnership (PPP) in order to improve coordination and collaboration.

Creation of effective private-public partnership - There are numerous experiences of PPP creation in domain of ICT implementation in agricultural sector that are presented in literature (Kazlauskiene, Meyers; Twaakyondo et al., 2002; Gakuru et al., 2009; Brewster et al., 2012; McNamara et al., 2011; Qiang et al., 2012). For example, the EU's Future Internet Public-Private Partnership (FI-PPP) program is directed to use of Future Internet technologies in order to make service infrastructures more efficient and intelligent. The SmartAgriFood is one of the eight projects in FI-PPP program that treats applying ICT to three sub-domains: agricultural production ("Smart Farming"), the transportation sector ("Smart Agri-logistics") and improving food awareness for consumers ("Smart Food Awareness"). The project is currently in the phase of developing pilot implementations since user requirements are successfully gathered and analysed (Brewster et al., 2012).

Partnerships among organizations with different specialties, capacities, and profit motives are appropriate way to implementation of ICT in agriculture. Enabling such partnerships and maintaining them is a main government role. PPPs provide a framework for governments to exploit the synergies between the public and private competences and to access the funds and skills needed for ICT implementation. A major strength of the private sector is in

achieving cost-benefit analysis of ICT projects that is usually driven by the profit motive. On the other side, public sector has motive and ability to finance ICT projects that provide public goods such as access to government information. The public sector expresses great interest in ICT as a mean for providing better public services significant to agriculture such as land registration, forest management, and collection of agricultural statistical data. Private sector engagement can enhance the access, affordability, and adaptability of ICT for agriculture development. Many other development projects suffer from lack of public funds and private interest but development projects concerning ICT have benefited from growing private sector interest and public demand (McNamara et al., 2011).

PPPs were first created for infrastructure projects where the private sector had insufficient funds and the public sector had insufficient skills to manage. The attitude that PPPs are significant only for infrastructure is based on numerous successful infrastructure projects supported by PPPs. However governments realized soon that PPPs can also be used to develop applications and services. The motive to use PPPs in areas besides infrastructure became stronger as governments experienced great public deficits. The entrepreneurial nature of ICT attracts new partnerships and forms of investment. Software design, development of mobile phone applications and mentioned local language customization represent the opportunities for continued innovation supported by PPPs. Private firms providing applications are often interested in working with the public sector in order to offer their technology products and services to smallholders.

However, problem with PPPs in developing countries is in poor planning, design, and measurement as well as unclear goals. Hence public and private stakeholders interested in PPPs must have sufficient capacity for creation and managing this kind of partnership (Qiang et al., 2012).

Lack of motivation to use computers and internet - Despite internet access, users in rural areas have to be motivated for internet use. In order to use internet, farmers and the other individuals in rural areas must have adequate level of competence and skills. Besides explained engagement of unemployed rural agricultural graduates as computer educators in rural areas, the other methods of computer literacy improvement of farmers could be used. For example, a group of farmers can install a computer with internet connection and any educated young man from that group can experience training in using computer and internet tools. He can help his colleagues to acquire computer knowledge and skills and to increase motivation to use computers and internet (Phougat, 2006). Key challenge in adoption of these methods of farmers' education is to motivate young and educated people to stay in rural areas. General suggestion (Kazlauskiene, Meyers) for governments in retaining and attracting people to rural areas is to make incentives and conditions for development of services of general interest, such as accessibility (roads, railways, waterways), ICT (broadband access, e-services, e-health, etc.), and public services (water, waste treatment, energy, health, education, etc.)

Lack of online government information - Much of potentially vital government information is not available online. Governments in many developing countries do

not focus on the poor population in rural areas and do not give them appropriate information and services through internet that could be used for improvement and development of agriculture.

Conclusion

Farmers and policymakers working on improvement of agriculture should be able for effective use of ICT, in order to react to new conditions which are characterized by: complete and partial deregulation of agricultural market, reduction of protectionist measures of government, opening of agricultural markets, fluctuations in agricultural environment and use of chances for export. Quality of rural life also can be improved by quality information enabling better decision making. ICT can play a main role in support of transformation of rural areas and agriculture in order to respond to these challenges and reduce digital inequality and divide between rural and urban areas.

Fast changes in ICT domain enable development and dissemination of electronic services in agriculture. National strategies for implementation and use of ICT in agriculture should be formulated. National coordination agencies with consultative role can act as catalyst in this formulation process. No single institution can alone successfully implement ICT in agriculture and rural areas. Therefore, industries with great influence on agriculture, like the fertilizer or food industry, should jointly initiate and encourage implementation of ICT in agriculture.

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ULOGA I POTENCIJAL INFORMACIONE TEHNOLOGIJE U UNAPREĐENJU POLJOPRIVREDE

Slavoljub Milovanović[2]

Rezime

Agroindustrijski sektor u svakoj zemlji u razvoju je suočen sa izazovima, kao što su zahtevi za povećanjem proizvodnje hrane i prinosa i stvaranje šansi za zapošljavanje ruralnog i siromašnog stanovništva. Osim toga, poljoprivredni sektor je pod uticajem globalnih faktora i brzih promena. Ove činjenice pokazuju da postoji velika potreba za informacijama i informacionim tehnologijama (IT) koje se mogu iskoristiti u borbi sa ovim izazovima i promenama i u unapređenju poljoprivredne proizvodnje i marketinga. Međutim, potencijal IT nije u potpunosti iskorišćen u poljoprivredi. Implementacija i širenje IT u poljoprivrednom sektoru i ruralnim oblastima se odvijaju relativno sporo u poređenju sa drugim sektorima ekonomije gde se savremene IT implementiraju velikom brzinom. Cilj ovog rada je da analizira ulogu, potencijal i doprinos IT u unapređenju abrobiznisa i da objasni mogućnosti korišćenja IT u mnogim oblastima poljoprivrednog sektora. Metod teorijske analize istraživanja koja su vođena na ovu temu je iskorišćen u ovom radu. Rezultati prezentirani u ovom radu pokazuju da IT ima veliki potencijal za podršku farmerima i drugim subjektima u unapređenju efikasnosti, efektivnosti i produktivnosti poljoprivrede. Međutim, svi subjekti uključeni u poljoprivrednu proizvodnju moraju da savladaju mnoga ograničenja i probleme u implementaciji i korišćenju IT.

Ključne reči: *informaciono-komunikacione tehnologije, unapređenje poljoprivrede, elektronska trgovina u agrobiznisu.*

2 Prof. dr Slavoljub Milovanović, Univerzitet u Nisu, Ekonomski fakultet, Trg Kralja Aleksandra 11, 18000 Niš, Telefon: +381 64 322 73 82, E-mail: smilovan@eknfak.ni.ac.rs

Review Article

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POTENTIALS FOR DEVELOPMENT OF RURAL TOURISM IN BAČKI PETROVAC MUNICIPALITY[1]

Radovan Pejanović[2], Dunja Demirović[3], Jasmina Đorđević[4], Gordana Radović[5]

Summary

The main goal of this paper is to prove the assumption that in the municipality of Bački Petrovac there is a predisposition for the development of rural tourism, taking into consideration the existing Spatial plan of the municipality, its conception and planning priorities. The analysis of internal and external preconditions for the development of tourism was conducted and also a field survey of registered rural households. Results of the analysis show that the external features do not represent a significant obstacle to the development of tourism, while on the other hand internal assumptions can be a limiting factor because of the extremely unfavourable demographic situation and the inadequate offer of rural households, which are mainly based on the services of accommodation. Proposals for the development of tourism through tourist spots have been given, noting which combination of existing tourist attractions is the best for the further development of every place except Maglić because this settlement has no predisposition for the development of rural tourism. In order to position tourism as an important economic activity and appropriate use of all available resources eight activities which are necessary to be conducted in the future have been proposed.

Key words: *spatial planning, rural tourism, the municipality of Bački Petrovac*

JEL*: L83, O13, Q12*

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2 Radovan Pejanović, Ph.D., Full Professor, Faculty of Agriculture, Trg Dositeja Obradovića no. 8, 21000 Novi Sad, Serbia, Phone: +381 63 600 217, E-mail: pejanovic@polj.uns.ac.rs

3 Dunja Demirović, M.Sc., PhD student, Faculty of Sciences, Trg Dositeja Obradovića no. 3, 21000 Novi Sad, Serbia, Phone: +381 64 26 86 290, E-mail: demirovic.dunja2@gmail.com

4 Jamina Đorđević, Ph.D., Full professor, Faculty of Sciences, Trg Dositeja Obradovića no. 3, 21000 Novi Sad, Serbia, Phone: +381 21 485 2837, E-mail: jasmina.djordjevic@dgt.uns.ac.rs

5 Gordana Radović, M.Sc., PhD student, Faculty of Agriculture, Trg Dositeja Obradovića no. 8, 21000 Novi Sad, Serbia, Phone: +381 64 13 78 643, E-mail: gordana.radovic09@gmail.com

Introduction

In many countries spatial planning is used to strengthen regional economic development, the rational organization of place, achieving balance between developmental needs and demands of environmental protection and other goals and politics (Đorđević et al., 2008). Tourism has numerous economic and social functions and the ability to influence the development of other economic activities, so its spatial planning and deployment has become an integral part of overall development plans. Tourism and spatial planning are two interrelated processes and should be based on real social, economic, cultural and political conditions/circumstances in the region. Spatial planning is a tool for organizing tourism activities to facilitate the integration of this sector with other sectors and areas within a locality or region (Dede, Ayten, 2012).

In most countries, spatial planning is associated with urban areas, while rural areas are under-represented (Udovč, 2007). Spatial planning in rural areas must adapt to the specific situation and challenges in each area and respond by developing adequate visions, strategies and tasks that have the full support of local inhabitants, organisations and authorities as well as other important actors (Amdam, 2005). During the planning and development of rural areas it is necessary that the use of the space is clearly defined and that the effects and the implementation of the spatial plan are known. Only in this case the approved spatial plan can be implemented, and that through the implementation control actions in the planning area.

The possibility of development of rural tourism in the Municipality of Bački Petrovac according to the Spatial plan of the municipality has been analyzed in this paper. Municipality of Bački Petrovac is the smallest municipality in Vojvodina and it belongs to South Bačka District, consisting of four villages: Bački Petrovac, as the centre of the municipality, Kulpin, Maglić and Gložan. The municipality has a very favourable geo-strategic position as it is located only 25 km from Novi Sad, which is a functional urban area of international significance. The area of municipality lies on the banks of the Danube River in the village Gložan and it is intersected by a network of canals of irrigation system Danube – Tisa – Danube (DTD). Through the village Gložan passes Danube bike path Eurovelo 6. In this area there are also small game hunting grounds, and DTD canal and the Danube River are rich in fish. According to the last census (2011), in the Municipality of Bački Petrovac live 13.302 inhabitants and the municipality is multi-ethnic and multi-cultural environment, and majority of population is of Slovakian (66.42%) and Serbian (25.74%) nationality. Municipality of Bački Petrovac is characterized by intensive agricultural production and investment in the development of agro-industry. Second place is held by industry, and it is followed by manufacturing, public work/activity, services and other activities. Crafts evolved along with the economy, and today also intensively the rural tourism.

Rural tourism in the existing planned documents of the Republic of Serbia

Spatial Plan of the Republic of Serbia- the period from the year 2010 to the year 2020 (2010) aims to regulate the use, development and protection of the country's territory. In

terms of economic development of Serbia, the advantage will be in addition to agriculture and energy resources given to tourism since those are activities whose available resources, market conditions and technical advances allow faster development. The SWOT analysis of spatial development of the Republic of Serbia as one of the advantages pointed out the existence of a number of areas with potential for development of rural tourism. One of the basic strategic priorities of the Republic of Serbia prominent in the national spatial plan is the restoration and development of rural areas and villages in a sustainable and socially rational way. To achieve this, emphasis will be placed on the development of agriculture according to the model of multifunctional agriculture and introduction of additional activities (handicrafts, various forms of rural tourism, hunting, fishing, etc.). In order to further and better develop the agriculture in the whole country certain economic and financial measures have been provided that involve the development of compatible non-agricultural activities such as agro-tourism and other forms of tourism, crafts, recreation, small industrial plants, the introduction of special loan programs and easier access to loans for women who live in rural areas and are engaged in agricultural production and rural development, as well as other forms of economic activity in the country, including rural tourism and healthy/eco food production. Rural tourism is recognized as one of the key tools for developing regions with low agro-ecological potential, underdeveloped agricultural structure and preserved natural areas.

In The Regional Spatial Plan of AP Vojvodina until the year of 2020 (2011) it was pointed out that the involvement of tourism in economy and employment is low, which shows that its potentials have not been fully exploited. The form of tourism which prevails is the city tourism because the urban centres have the highest tourist traffic. Although, according to the Tourism Strategy of the Republic of Serbia, rural tourism is one of the key aspects of tourism in Vojvodina, in the Spatial plan it was marked as a tourist product of exceptional potential, but not enough furnished and unrecognized. Among the basic principles of spatial development of AP Vojvodina the guidelines for the preservation, enhancement, protection and sustainable use of natural resources and cultural heritage have been raised, which should be the basis of tourist, but also economic development, while within the goals of the regional spatial development prominent role has the strengthening of the position of the village, and it is believed that villages which focus their development on tourism, agriculture and industry would become a significant factor in the development. One of the forms of tourism that is related to the rural area is rural tourism which, according to the spatial plan, is carried out in two forms: on farms and as tourism in rural areas, but villages that have tourist function have not yet been codified as rural tourist spots. As for the municipality of Backi Petrovac the analysis of demographic indicators revealed that it belongs to a demographic endangered area, which can have a very negative effect on its further development. The segment of tourism of Bački Petrovac municipality has not been specifically addressed in the Regional Spatial Plan of AP Vojvodina, but its particular value has been recognized for the spatial development of AP Vojvodina. From tourist attractions on several places have been highlighted the importance of the castle in Kulpin. Among other tourist attractions of Bački Petrovac municipality the Slovaks have been mentioned as

a nation that has preserved its tradition which provides an opportunity to realize the vision of Vojvodina as a "multicultural and humane".

Certainly the most detailed document when it comes to tourism development in the municipality of Bački Petrovac is *The Spatial Plan of the municipality Bački Petrovac* (2007), in which as the main goal of the creation of Plan in terms of tourism is set valorisation of all natural and anthropogenic values in the municipality on the basis of which forms of tourism that could be developed in order to increase tourist traffic, and therefore revenue from tourism would be determined. In the municipality it is possible to develop different forms of tourism (cultural manifestation, hunting, fishing, sports and recreation, cycling and rural tourism) due to favourable natural predisposition. The biggest limitation for the development of tourism is the lack of clearly defined tourism product, unsatisfactory material basis of receptive tourism in terms of the number of facilities, but also the quality of services, and lack of a strategy for tourism development of areas, which would include a clear model of the development of this activity. Based on the analysis of natural and created values the entire municipality was divided into two territorial units, or zones: The River bank zone of the Danube River, forests, tourism, recreation and agricultural production and The Zone of intensive agricultural production. Among the important objectives whose fulfilment will contribute to the development of tourism raises the further protection of natural and cultural resources in order to develop tourism which will on the one hand threaten natural values, and on the other hand will contribute to the preservation of the material heritage of national culture as a prerequisite for the preservation of national identity. Municipal spatial plan envisages that tourism would be one of the leading economic activities in the future.

Natural, cultural and historical values of importance for the development of rural tourism in Municipality of Bački Petrovac

In the municipality there are natural sites that may be of importance for the development of tourism, and some of them are in the process of protection as they have great value. In the process of protection is the park around the castle Dunđerski in Kulpin in which there are rare and protected plant species. The remains of Gložan Rit, which consists of depressions under the reeds which serve as nesting for wildfowl, natural rarities are also predicted for protection. The 1st degree of protection mode is respected in this site. The municipality has a rich fauna so it is possible to develop hunting and fishing tourism.

Among the immovable cultural property whose value has been recognized and featured in the Spatial Plan of the municipality (2007) for the development of tourism stand out facilities that are monuments of folk architecture and construction. The architectural development of the rural houses can be traced back to the late eighteenth to the early nineteenth century, and the oldest type of house is "Homeland House" (Bački Petrovac), which is the most important work of the old architecture of Vojvodina in the 18th century. It was built in 1864 and it represents the only preserved old hemp-spinning mill in the territory of Vojvodina.

The next important piece of architectural heritage, the Slovak Evangelical Church with the parish centre in Bački Petrovac was built in 1783. Parish House of the Evangelical church

represents the most characteristic features of the classicist style that dominated in the first half of the 19th century and at the same time it is one of the very few buildings of this period on the territory of Vojvodina, which has been preserved in its original appearance.

Based on the analysis of the Spatial Plan of the municipality (2007), the authors recognize that some of the values of importance for the development of rural tourism were omitted or only mentioned adequate valorisation. In the Regional Plan it was only mentioned the existence of association AHOJ, and it is of great importance for rural tourism since it is a unique meeting centre of craftsmen, farmers and artists in order to preserve and encourage the development of traditional crafts, preservation of traditional cuisine and healthy environment.

In addition, in the Spatial Plan of the municipality (2007) points out that the two castles (Dunđerski), park and fence surrounding the palace in Kulpin are placed under the state protection. It is mentioned that in the castle today there is an agricultural museum; however, what is not stated is that the museum is the only specialized museum institution in the country for research and study of the agrarian sector, established in 1993 (Kišgeci 2010).

Picture 1. Castle Dunđerski in Kulpin

Picture 2. Event "Wedding then and now"

Source: Tourist Organization of Bački Petrovac.

For the development of current and potential tourism products of the municipality from events the importance of only one event was highlighted, although there are others that might be attractive to tourists. In the Regional Plan of the Municipality traditional event of Slovaks has been mentioned, Slovak National Festival (the first was held in 1919). At this event shows the folk and contemporary art of Slovaks in Serbia and the region are presented. Among the other events that might be found in the offer of rural tourism are the events "Dance, Dance" ("Tancuj, tancuj"), (since 1970.), in which the costumes, dancing and singing groups are presented, "Wedding then and now", an international event that is held in Kulpin, in the castle Dunđerski, in which the wedding customs, antique wedding dress are presented and local dishes are served.

Gastronomy, although it has considerable potential for tourism development, is omitted from the Spatial Plan of the municipality. Slovak dishes which, prepared in a traditional way, can be an attractive tourism product include: *Krumple na Tapsi* (potato casserole),

*Kapustnica (*traditional soup), *Bryndzove halusky* (potato dumplings in melted cream), *Retes* (a dish of sour dough that is stretched into the crust and filled with cheese, potatoes, pumpkin, cherry or grits), "Petrovac cakes" which are specific in that they are high, large and full of ornaments.

A special culinary product to which to the event is dedicated (Festival of pork sausage) is a "Petrovac Sausage" ("Petrovska klobasa"), which is the first food product from Serbia who won the right to protect its geographical origin. It was first officially mentioned in the great exhibition of agricultural products in 1873 in Vienna (Elaborat, 1992).

Analysing the natural, cultural and historical value, it is evident that rural tourism has a good basis for making a quality tourism product that could in correlation with hunting, sports and recreation and event tourism and with the high-quality, sustainable strategy and modern marketing approach significantly contribute to the socio-economic recovery and sustainable development of the entire municipality.

Valorisation of the basic assumptions of importance for the development of rural tourism in the Municipality of Bački Petrovac

According to numerous studies (Ćatović, Mešković, 2011; Vukoja, 2011; Klarić, Gatti, 2006) the basic assumptions for the development of rural tourism are assumptions of the environment (external assumptions - clean air and water, preserved nature and natural heritage, cultural heritage, good traffic and telephone connection, commitment and affection of the community and institutions towards the tourist activities) and the assumptions in the household (internal assumptions - the possession of the estate, commercial and residential property, possession of livestock, the ability of rural production presentations, attractiveness of location and residential building, resolved communal infrastructure of the household, as well as the number, age and the tendency of members of rural households to provide tourist services).

Conditions of major infrastructure in the municipality of Bački Petrovac could be assessed as satisfactory. All paved roads in the municipality are 28 km long and belong to the third category. According to the level of modernization of roads, this municipality, of the 45 municipalities in Vojvodina, takes place 7. Good traffic communication, accessibility to a broader level and closeness to Novi Sad as one of the most important emissive tourist centres can enhance the attractiveness and visit to the municipality of Bački Petrovac.

Significant environmental and largely unsolved problem in all of the Republic of Serbia is the disposal of waste. With the organized collecting of waste only about 60% of the urban population is covered, while in rural areas there is almost no organized waste collection (Zelenović Vasiljević, 2011). A significant source of pollution in the municipality of Bački Petrovac represents municipal solid waste landfill located near the village and even in the village itself. None of the landfill has the necessary documents, the necessary protective measures are not performed, and only the landfill in Glożan has a protective strip. Inadequate waste management can have a negative impact on the image of tourist destinations, especially those who want to develop rural tourism.

The state of public service facilities which are important for the stay of tourists is good, a little denser network structures are characteristic of the health and culture. The capacity of health facilities (clinics, health centres) is appropriate, but in rural areas it is necessary to provide better equipment. In all areas, there are pharmacies and veterinary stations. The capacity of cultural institutions (cultural centres, museums, galleries and exhibition spaces) are sufficient, but it is necessary to introduce new and more modern contents. In the municipality of Bački Petrovac several outdoor swimming pools have been built. Among the special attractions in the municipality there is the aqua park "Petroland" opened in April of 2012, which represents the largest so far built tourist and entertainment attraction in Serbia and the most modern aqua park in the Balkans.

The attitude of the local population about the importance of tourism on the development of an area is very important, especially in those rural areas with preserved ecosystem. According to earlier conducted studies (Čomić, 2010) on a sample of 100 citizens in Bački Petrovac, customs and events may be the most interesting for tourists, and when it comes to understanding the potential benefits that rural tourism can bring to the community what singles out is the increase of employment of local population, development of manufacturing and service industries, rich cultural life and creating opportunities for young people to stay in rural areas. This research conducted shows that there is a positive attitude of the local community towards the development of rural tourism in the municipality and that they recognize only the positive effects that this type of tourism can bring, so it is necessary to further inform and educate the local community to take active participation in providing services to tourists.

According to the Tourism Organization of Bački Petrovac there are registered 16 people that provide accommodation services (capacity of 85 beds in 45 rooms), and among them dominates accommodation in apartments and private homes and providing a bed and breakfast service. The existing accommodation capacities are characterized by insufficient number and equipment. Favourable situation is with catering facilities and restaurants which are present in every place of the municipality (about 50), and some facilities have sports and leisure facilities. It is essential to raise the level of service in the existing restaurants and to serve mainly local food and drink as they can be an attractive tourist product. Analysing the current external conditions for the development of rural tourism in the municipality, it can be concluded that they do not represent a significant obstacle to the development of this type of tourism, and some of them (already built all kinds of infrastructure, existing public service, positive attitude of the local community towards the development of tourism) can be incentive for further development.

The problems that the rural area is facing have become almost universal at level of the whole world. Demographers and economists point out the alarming demographic trends that have a negative impact on many industries, including tourism. Numerous studies (Pejanović, 2010; Milovanović et al., 2010; Pejanović, 2013) point out that the rural areas are faced with reduced fertility and birth, increased inequalities between age groups, the aging of the population, increased external migration.

According to the census from 2002 in four villages of the municipality of Bački Petrovac lived 14,681 people (according to the census of 2011. 13,302 inhabitants) (Table 1.), while in the centre of the municipality lived 45.8% of the population (in 2011. 45.58%). Analysis of the movement of total number of population of the municipality Bački Petrovac, for the period from 1948 to 2002, showed a trend of increasing the total number of population, at an average annual rate of 0.11%, however, population policy has a trend of continuing decline in population since the Census from 1981.

Table 1. Population trends from 1948. to 2002.

Settlement	Census year						
	1948	1953	1961	1971	1981	1991	2002
B. Petrovac	7,452	7,503	8,104	7,822	7,729	7,229	6,727
Gložan	2,776	2,754	2,839	2,682	2,569	2,487	2,283
Kulpin	3,578	3,728	3,742	3,312	3,226	3,207	2,976
Maglić	8	1,157	2,180	2,226	2,571	2,733	2,695
Municipality	13,814	15,142	16,865	16,042	16,095	15,656	14,681

Source: The Spatial Plan of the municipality of Bački Petrovac (2007).

Analysis of the population structure according to large age groups indicates unfavourable age structure of the population with high aging index of 1.0, which in settlements ranges from 0.9 (Kulpin, Maglić) to 1.1 Gložan. If this index is compared with data from the National Rural Development Programme 2011-2013, and the Plan of Rural Development Strategy 2009-2013, it can be concluded that it is lower than the rate of population aging in rural areas all over Serbia which amounts 1.08%. Disturbing information in the municipality is that older middle aged and old people constitute 51.7% of the total population.

Observing the settlements, the highest percentage of highly educated people is in Bački Petrovac, in Maglić is the highest percentage of completed secondary education, and in Kulpin with a degree in elementary education, which compared to prior periods indicates significant improvement of the educational structure of the population in the municipality.

Based on the mentioned data, the general demographic situation in the municipality of Bački Petrovac is unfavourable. It is necessary to increase the exploitation of rural areas in non-agrarian purposes, in order to increase income and improve the living conditions of the existing population, and to make the environment more attractive to attract new businesses and immigration of population from other parts.

In order to determine the internal characteristics of households that are engaged in tourism survey has been conducted during January 2014. by personal visit to randomly selected households. Six households, out of ten, were interviewed to determine whether the current offer matches the needs of the tourism market. All households are in Bački Petrovac. The questionnaire consisted of two parts and five questions, two of which were open-ended, where the respondents wrote responses, while other questions had offered answers.

Asked how many family members were involved in tourism, only in two households all family members were involved in rural tourism. With regard to the demographic characteristics of

household members engaged in rural tourism it is observed that women predominate (80% of respondents), that they completed secondary education, while the average age of people involved in tourism is 44 years.

The next question related to the characteristics of the households and respondents answered "yes" or "no." All the surveyed households have arranged driveway and parking area, but few have a clear or almost no set signs for tourists that it is a facility which provides accommodation. Also, all facilities have electricity and phone number (Mobile or Fixed), while e-mail have only two households. Of the total number of households, only one household has a shared bathroom, i.e. guest bathroom, which must be shared with the owner. None of the households has its own agricultural production, and only one household has domestic animals and ancillary facilities in the yard. When it comes to services provided to tourists, the average household has three beds, while breakfast is the only the food service, and it is practiced in three households. Buying food and various products such as Petrovac Sausage (pork sausage) and winter stores is available in only two households. None of the households provides the opportunity for tourists to actively or passively participate in the preparation of food with the hosts, as well as the opportunity to participate in the affairs of the host. Also, no household has organized workshops, and only one household has all conditions for sports and recreational activities. One household organizes excursions for tourists in the village and its surroundings, while others point out that they can always make recommendations to tourists what they should see.

When asked which the structure of visitors is the product intended to, all households responded that it fits all structures (students, youth, families, and the elderly), and that there is no special customization of products and services, depending on the structure of guests.

Analysing the responses received, it can be observed that the tendency of family members to provide tourist services is at a low level (e.g. in a household of five members, only one is involved in tourism), and it is necessary to encourage other members to be actively involved in the providing the services. Age and educational structure of persons engaged in tourism is somewhat satisfying, but it can certainly be improved by including other family members (a young and college-educated people). Lack of computers in households, the lack of e-mails and the presence on social networks reduces the possibility of households to have adequate marketing and attract more tourists. The biggest drawback of households represents a very modest tourist product consisting mainly of providing accommodation, i.e. bed and breakfast with no additional activities for visitors. Considering the fact that households do not have adequate resources to organize additional activities, it is necessary to encourage rural households to engage in tourism because it would enrich the final product (e.g. the ability to participate in agricultural work).

Discussion

In order to position tourism as a major economic activity and appropriate use of all available resources, it is necessary to fulfil the following:

1. **Record the existing tourism resources and make their valorisation** - it is necessary to establish a tourism database and perform a valuation of resources in accordance with the requirements of tourism demand and sustainable development of tourism;
2. **Establish a tourism offer** - It is desirable to create an offer that will combine different types of tourism and thus emphasize the priority forms and scale of tourism activities, and in this way achieve diversity of the offer. It is necessary to avoid forcing the development of tourism in the entire municipality, but focus on those sites that are predisposed.
3. **Perform segmentation of tourists** - Holders of tourism offer in the Municipality of Bački Petrovac need to perform segmentation of tourists based on various criteria, because it is the only way to achieve a better market position against competitors.
4. **Educate all participants in the tourism industry** - it is necessary to educate professionals and the population as it is the only way to ensure sustainable tourism development.
5. **Quantitative and qualitative improvement of accommodation capacities** - to encourage local residents that they should by complying with the possibilities reorganize part of their household for the needs of receptive facilities or to build new ones. Motivation for this activity, the municipal government can achieve through soft loans or grants.
6. **Improving the condition of public utilities** - for tourism, it is necessary to provide at least an optimal level of equipment of infrastructure and superstructure. Adequate municipal system would allow a better connection between tourist facilities.
7. **Formulating marketing strategy** –Advertising material should be well designed and content should be presented in a professional manner and adapted to a particular type of tourists. Offer of the municipality should be presented on the sites of organizations at the regional and national level, in accordance with the financial capabilities of the domestic and international tourism fairs.
8. **Formulating a strategy for tourism at the local level** - strategy for tourism development in the municipality of Bački Petrovac should include all the mentioned points, and in addition it is necessary to define what are the individual forms of tourism that can develop in certain part of the municipality, to determine who are the subjects that will take care of the implementation of tourism (public enterprises, the private sector, tourism organizations, municipal bodies, etc.), and what are their powers, and to establish a public (municipal)-private partnership for better performance in the market.

Analysing existing tourism values in the municipality, the following spatial organization of tourism through tourist spots is proposed:

- *Traditional architecture* – on the territory of the municipality, especially in Bački Petrovac and Gložan a large number of authentic Slovakian house of charge with the original furniture have been preserved. It is necessary to maintain these facilities in order

to prevent their devastation because it would lead to losing a significant part of the history of the region and an important tourism potential;

- *Heritage area* – Kulpin can be marked as heritage area because it possesses only agricultural museum in the country and as such can be very attractive and recognizable destinations.
- *Active or passive participation in community life* - in Bački Petrovac there the highest number of facilities where tourists can actively or passively participate in community life (association "AHOJ", the gallery "Urbanček", women's association). In Gložan, tourists can make themselves a souvenir of maize.
- *Gastronomy* - A special culinary product that should be promoted is the "Petrovac Sausage". Traditional dishes should prevail in the offer of private farms of rural farms and restaurants, and it is necessary to devise a better promotion of Gložan that is already among the tourists (small number) identified by the production of healthy food. Kulpin is becoming recognized for its production of wine;
- *Events* - Their importance lies in the fact that they preserve the tradition and activate almost the entire local community. Among the events that are recognized as a potential product in rural tourism as "Slovak National Festival" (Bački Petrovac), "Dance, Dance" (Gložan) and "Wedding then and now" (Kulpin);
- *Recreation* - current existence of sports and recreation complex "Oasis MB Gložan" and after the completion of project ethno-park "Danube dream" south of Glozan, on the Danube, this place could become a recognized destination for sports and recreational tourism.

Conclusion

Analysing all natural and anthropogenic values in the municipality of Bački Petrovac the assumption that there is a predisposition for the development of different forms of tourism, including rural tourism has been confirmed. Analysis of existing external preconditions for tourism development shows that they are not significant obstacles to the development of tourism, and even provide an adequate basis. However, in order to meet the basic needs of tourists, it is necessary to maintain existing external assumptions regularly, if needed to renovate or replace with the addition of new contents (cultural institutions and sports facilities). On the other hand, internal assumptions may represent a limiting factor for the development of rural tourism due to unfavourable demographic situation which together with the current trend of migration can be a factor of slowing down the entire rural development.

Existing supply of rural households is unsatisfactory because it is based on the providing the accommodation and breakfast with no additional activities that tourists can practice, that can cause dissatisfaction of tourists and their weak loyalty. There is currently no agricultural household engaged in tourism, so it is necessary to show how agriculture and tourism are related and which may have those who engage in this area. This would enrich the existing

tourist offer; it would enable additional employment of family members, and would achieve the multifunctional agriculture development. Positive attitude of local people towards tourism development should be used in terms of them being stimulated to work in rural tourism. While on one hand the demographic situation is unfavourable, on the other hand, it is one of the most significant development potential because it has a quality workforce.

In the future, in order to have better position of tourism, it is necessary to do an accurate tourist data base and perform valorisation of all values. The creation of tourist offer should be based on these activities which would emphasize the priority forms and scope of tourism activities. Working on the development strategy of tourism in the municipality arises as a priority, since the existing spatial plan did not provide clear directions and concepts of tourism development, and some of the tourist attractions were just mentioned or completely omitted.

It is undisputed that the Municipality of Bački Petrovac has quality predisposition for the development of different forms of tourism, but without a clear vision of sustainable development and cooperation with the local population, tourism will not be among the holders of economic development.

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POTENCIJALI RAZVOJA RURALNOG TURIZMA U OPŠTINI BAČKI PETROVAC[6]

Radovan Pejanović[7], Dunja Demirović[8], Jasmina Đorđević[9], Gordana Radović[10]

Rezime

Osnovni cilj ovog rada je da dokaže pretpostavku da na području opštine Bački Petrovac postoji predispozicija za razvoj ruralnog turizma uzimajući u obzir postojeći Prostorni plan opštine, njegovu koncepciju i planske prioritete. Izvršena je analiza internih i eksternih pretpostavki za razvoj turizma i sprovedeno je terensko anketno istraživanje registrovanih seoskih domaćinstava. Rezultati analize pokazuju da eksterne karakteristike ne predstavljaju značajniju prepreku za razvoj turizma, dok s druge strane interne pretpostavke mogu biti ograničavajući faktor zbog izrazito nepovoljne demografske situacije i neadekvatne ponude seoskih gazdinstava koja se u najvećoj meri bazira na pružanju usluga smeštaja. Dati su predlozi za prostornu organizaciju turizma kroz turističke tačk, ističući koja je kombinacija postojećih turističkih vrednosti najbolja za dalji razvoj svakog mesta osim Maglića jer ovo naselje nema predispozicije za razvoj ruralnog turizama. U cilju pozicioniranja turizma kao značajne privredne delatnosti i adekvatnog korišćenja svih raspoloživih resursa predloženo je osam aktivnosti koje je neophodno sprovesti u narednom periodu.

Ključne reči: *prostorno planiranje, ruralni turizam, opština Bački Petrovac.*

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7 Dr Radovan Pejanović, redovan profesor, Poljoprivredni fakultet, Trg Dositeja Obradovića 8, 21000 Novi Sad, Srbija, Telefon: +381 63 600 217, E-mail: pejanovic@polj.uns.ac.rs

8 M.Sc. Dunja Demirović, student doktorant, Prirodno-matematički fakultet, Trg Dositeja Obradovića 3, 21000 Novi Sad, Srbija, telefon: +381 64 26 86 290, E-mail: demirovic.dunja2@gmail.com

9 Dr Jamina Đorđević, redovan professor, Prirodno-matematički fakultet, Trg Dositeja Obradovića 3, 21000 Novi Sad, Srbija, Telefon: +381 21 485 2837, E-mail: jasmina.djordjevic@dgt.uns.ac.rs

10 Mr Gordana Radović, student doktorant, Poljoprivredni fakultet, Trg Dositeja Obradovića 8, 21000 Novi Sad, Srbija, Telefon: +381 64 13 78 643, E-mail: gordana.radovic09@gmail.com

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MARKETING RESEARCH FOR CHOOSING THE PROMOTIONAL MESSAGE CONTENT FOR DOMESTIC ORGANIC PRODUCTS

Suzana Salai[1], Tomislav Sudarević[2], Nenad Đokić[3], Ljubomir Pupovac[4]

Summary

Choosing the content of promotional messages is a part of the activities of integrated marketing communication. As far as organic products in the world are concerned, research related to the choice of promotional message content is the object of much attention, primarily based on the conduct of research among the consumers of these product (information for defining the aim of promotion, creating and testing promotional messages, selecting media and media mix, and determining the number and frequency of promotional events). Promoting domestic organic products also inevitably implies conducting consumer-centred marketing research, in order to choose the appropriate promotional message. In this respect, this article defines several goals: study the choice of the promotional message content in relation to other activities of integrated marketing communication; consider this question in the context of relevant foreign market research into organic product consumers; determine the level of marketing research, which could be used for approaching the issue from the domestic perspective; and establish which recommendations and implication could be generated when domestic organic products are concerned.

Key words: *Organic products, consumer-centred marketing research, integrated marketing communication, integrated marketing communication activities, choosing promotional message content.*

JEL: *M31, M37*

1 Ph.D., Full Professor in retirement, Faculty of Economics Subotica, University of Novi Sad, Segedinski put 9-11, 24000 Subotica, Serbia, E-mail: sazu@ef.uns.ac.rs

2 Ph.D., Associate Professor, Faculty of Economics Subotica, University of Novi Sad, Segedinski put 9-11, 24000 Subotica, Serbia, E-mail: tsudarevic@yahoo.com

3 M.A., Assistant, Faculty of Economics Subotica, University of Novi Sad, Segedinski put 9-11, 24000 Subotica, Serbia, E-mail: djokicn@ef.uns.ac.rs

4 M.Sc., Assistant, Faculty of Economics Subotica, University of Novi Sad, Segedinski put 9-11, 24000 Subotica, Serbia, E-mail: ljubomirp@ef.uns.ac.rs

Introduction

Two approaches are identifiable regarding the placement of homemade organic products. The first approach (e.g. März et al., 2012) primarily recommends exporting domestic organic products (especially to certain EU countries: Italy, France, Great Britain and Germany), with the rationale that foreign markets could absorb the surplus supply of organic products, which is not certain on the domestic market, among other things, due to the population's insufficient purchasing power and a long time period required to change eating habits. The other approach (e.g. Sudarević et al., 2011) primarily highlights the need to develop the domestic market, i.e. increase the consumption of organic products by domestic consumers, with lower risks compared to export orientation as the main advantage. The argument in favour of this approach is the case of Hungary, where organic products were predominantly placed on foreign markets, but problems occurred when lower-priced organic products of the same quality level from India, China, Egypt and other countries entered their export markets.

Regardless of whether the placement of domestic organic products will be oriented to export or the domestic market, it is essential for all participants in the value chain to have organic product accepted by the final consumers. This implies the need to adopt a marketing concept, i.e. achieve the company's objectives by means of higher efficiency than its competitors in creating, delivering and communicating greater consumer value on the chosen target markets (Kotler, Keller, 2006), that is, achieving corporate objectives through meeting customers' needs better than their competitors (Jobber, Fahy, 2006) – in a nutshell, marketability and profitability. Marketing concept is recognised as vital for food industry in general (Grunert et al., 1996), and consumers and their satisfaction are identified as the key factor of future organic product market as well (Hughner et al., 2007).

Promotion, which is the research subject in the broader sense in this article, is not only a marketing mix instrument, but also one of the marketing functions in the company, i.e. a marketing activity performed within the company, referring to planning and organising the company's promotional strategy and tactics (Salai, Grubor, 2011). Actually, together with marketing research, product planning and development, and distribution, promotion features as a marketing function where, based on marketing research information, the promotional message is created for the product or service that is to be available to consumers by means of chosen marketing channels at the appropriate price. Another point that must be mentioned in relation to promotion is that the period since the 1990s is dominated by the trend of integrated marketing communication (Salai, Grubor, 2011), which includes marketing communication integrated at three levels: integrating marketing instruments into the marketing mix; integrating promotion instruments into the promotion mix; and integration at the level of a unique message to actual and potential consumers, i.e. the market. The need for integrated marketing communications in food industry is stated in article written by Mesaroš at al. (2013).

As far as domestic organic products are concerned, promotional activities have so far been researched in relation to the application of the integrated marketing communication in promoting these products (Salai, 2004), or promoting the brands of these products (Salai,

2005). However, bearing in mind that promotion requires previous integrated marketing communication activities, the research subject in this study is conducting consumer-centred marketing research with the aim of choosing the content of the promotional message for domestic organic products. Together with defining the structure, form and source of the promotional message, choosing its content qualifies as creating the promotional message within the integrated marketing communication activities (Salai, Grubor, 2011). The choice of the content of the promotional message is extremely important, and is dynamically changed under the influence of changes in consumers' attitudes regarding not only food products in general, but also organic products in particular (Sudarević, 2000).

Several goals were set regarding the research subject: to look into the choice of the content of the promotional message in relation to other integrated marketing communication activities, to consider this issue in the context of relevant foreign market research into organic product consumers, to study the level of marketing research so far that could be used in approaching the issue from the domestic perspective, and find out which recommendations and implications could be generated regarding domestic organic products.

Methods and materials

Choosing the content of promotional message as an element of programming integrated marketing communication activities

In view of the fact that the choice of the promotional message content is one of the elements within the process of conducting integrated marketing communication activities, this element first needs to be studied in the context of relation to other activities. More specifically, the activities within the process of conducting integrated marketing communication activities are (Salai, Grubor, 2011):

- identifying the target auditorium of organic products;
- determining the objectives of promoting organic products;
- creating the promotional message of organic products;
- choosing the communication media of organic products;
- defining the total promotional budget of organic products;
- deciding on the promotional mix of organic products;
- measuring the effects of promoting organic products and
- managing and coordinating the marketing communication process of organic products.

Identifying the target auditorium of organic products may refer to current consumers, potential consumer, marketing channels, consumer segments, companies, and specific as well as general public. Identifying the target auditorium is performed based on marketing research information on consumers' demands, needs, wishes, attitudes, motives, habits and preferences. The identified target auditorium is what the decision about marketing communication depends on.

The ultimate goal of all company's activities is purchase of the product (the economic goal is profit, and communication goal is forming and maintaining of a positive and clear image that will contribute to attaining the economic goal) by providing value, and thus providing long-term consumer loyalty.

Creating the promotional message of organic products refers to four issues, or questions; promotional message content (what to say), promotional message structure (how to say it), promotional message form (how to express it symbolically) and promotional message source (who should say it). The promotional message content is determined by the communicator, given that he assesses what is to be said to the target auditorium in order to provoke the desired response. Appeals can be: rational, emotional and moral. Ideally, the promotional message should attract attention, maintain interest, stimulate desire and lead to action.

The purpose of media, i.e. carriers of integrated marketing communication, is to carry the communicator's unique promotional messages to the target auditorium and can be: personal communication media, i.e. face-to-face communication and impersonal communication media or general communication.

Defining the total promotional budget of organic products in practice involves the application of a whole set of possible methods: the commission method, the remuneration per unit method, the arbitrary method, the competitive parity, the goal and task method, etc. What must particularly be borne in mind is the importance of promotion in the overall marketing mix, which depends on the life cycle stage, frequency of shopping trips, etc.

When deciding on the promotional mix, the promotional budget is allocated to various promotion instruments (mass media advertising, internet advertising, sales promotions, personal sale, media advertising, marketing public relations, direct marketing etc), which company applies depending on the characteristics of individual promotion instruments, type of product market, the stage of the consumers' readiness for shopping and the stage of product life cycle.

Measuring the promotion effect is performed in preliminary research, i.e. pre-testing the promotional message and subsequent studies and measuring, i.e. post-testing (which includes measuring the effect of promotional messages, i.e. memory, perception, and response to the promotional message content).

Management and coordination of marketing communication for organic products are approached from several aspects: the first relies on production life cycle stages and various promotion strategies (from aggressive to reminders) in individual product life cycle on the market as its support. The other approach, the promotion spiral, is based on the concept of the intention to expand the market by extending the product's utilisation range.

Foreign consumer-focussed marketing research for the purpose of choosing the promotional message content for organic products

Marketing research conducted for the purpose of promoting organic products on foreign markets, primarily EU countries, should mainly be viewed in the context of new tasks set before the promotion by the development of organic product market in these countries (Đokić et al., 2011): to build the image of specialised organic product sales result, to target promotion at occasional organic product consumers, conceive and devise a promotion in the conditions of globalised organic farming product market. Consumer-centred marketing research for the purpose of choosing the promotional message content will be discussed on two studies carried out in EU countries.

The first marketing research was conducted in the UK, in January and February 2003 (Anon, 2004) and dealt with the analysis of respondents' consumption behaviour and attitude formation in 15,000 households using the Super-panel database possessed by Taylor Nelson Sofres, a company conducting marketing research worldwide. These results were expanded with more detailed marketing research into the opinions of respondents in charge of shopping, where further 4,000 people were interviewed in their homes. This marketing research stemmed from the need to increase the understanding of consumer needs, with the aim to promote organic food more effectively and raise sales, and a special accent was placed on the choice of the promotional message content. In addition to general recommendations for marketing and promotion (for more detail, see Đokić et al., 2011) and market segmentation (for more detail, see Đokić, Ćetković, 2013), the above mentioned research enables following the activities of integrated marketing communication.

It starts from segmentation of the organic product market. Three market segments were identified first: heavy, medium and light, in such a manner, that, taking into account the annual consumption of organic product consumers, the first 20% by consumption volume were categorised as heavy consumers, the following 30% are medium consumers, whereas the remaining 50% consumers were characterised as light. Segmentation was continued by introducing a number of organic product categories (fruit and vegetables, eggs, dairy products, packed groceries, fruit juices and soft drinks, pork, poultry, beef and mutton) used by consumers in these market segments. It was concluded that the 23% heavy consumers accounted for 84% of the total consumption of organic products that light consumers could only be converted to medium consumers, and medium consumers could be converted to heavy consumers. Medium consumers were therefore defined as the target auditorium. The basic goal is to convert these into heavy consumers, so that organic product market development could continue.

As regards creating the promotional message, special attention was devoted to research consumers' attitudes for the purpose of choosing the promotional message content. This research was conducted on 4,000 respondents in charge of shopping both on the total sample level and on the level of individual market segments (Table 1), and also depending on individual categories of organic products (Table 2). In addition, market segments were defined slightly differently: very light, light, medium and heavy consumers (Table 1).

Table 1. Promotional message content and market segments (shaded background – statistically significant difference at 95% level).

	Total percentage	Very light	Light	Medium	Heavy
Organic tastes better	24	20	27	23	23
Food safety concerns	22	14	22	29	27
Wish to reduce exposure to pesticides	18	9	16	26	22
GM food concerns	15	9	16	18	16
Environmental concerns	15	7	12	26	15
Products from organic farms are higher quality	15	7	16	22	16
Animal welfare concerns	14	10	12	21	16
Organic products contain more minerals and vitamins	10	5	12	14	10
High awareness of organic approach	9	3	8	18	11
For my children	8	4	7	10	9
Medical advice	6	4	5	9	7
I know a local organic producer	5	4	5	6	8
None of the above	11	21	10	2	9
Don't know	10	18	7	5	9

Source: Annon (2004).

Table 2. Promotional message contents and organic product categories (shaded background – statistically significant difference at 95% level).

	Total percentage	Milk products	Eggs	Beef	Chicken Pork	Packed food	Fruit juices	Fruit and vegetables
Organic tastes better	24	23	27	23	31	23	17	25
Food safety concerns	22	23	24	18	12	23	25	23
Wish to reduce exposure to pesticides	18	16	12	24	20	26	14	20
GM food concerns	15	12	14	23	24	17	20	16
Environmental concerns	15	13	13	12	18	19	20	15
Products from organic farms are higher quality	15	17	12	6	16	20	31	14
Animal welfare concerns	14	11	22	12	15	15	11	13
Organic products contain more minerals and vitamins	10	12	8	21	5	20	16	11
High awareness of organic approach	9	8	9	6	5	18	3	10
For my children	8	7	5	2	5	10	22	8
Medical advice	6	11	5	10	1	19	3	4
I know a local organic producer	5	3	6	5	9	2	6	5
None of the above	11	11	6	15	7	12	8	11
Don't know	10	6	9	12	8	4	4	10

Source: Annon (2004).

Buying organic food usually begins by buying organically grown food and vegetables, followed by eggs and dairy products, then packed food in grocery shops, and finally, meat and soft drinks.

Bearing in mind the conclusion that two basic motives driving organic product consumers are taste and health, and also that these are the essential factors in stimulating consumers to try organic products for the first time, recommendations are given about promoting organic products to medium consumers.

The other example is the Farmer Consumers Partnership project (2007-2010), which encompassed conducting several marketing research projects in Austria, Germany, Italy, Switzerland and the United Kingdom, with the aim to choose the promotional message content to be used in communication with organic product consumers. This project emerges in a setting where organic producers in Europe increasingly fear competition originating from producers from the countries where production costs are significantly lower due to climatic conditions, lower labour or land cost, or lower production standards. On the other hand, the consumers are dissatisfied because of the consequences of organic food market, with the high presence of anonymous, uniform and replaceable organic products produced under unfavourable social or environmental conditions. The project assumption and results were published in four works: Padel & Gössinger (eds.), 2008; Zander & Hamm (eds.), 2009; Naspetti & Zanoli (eds.), 2010; and Stolz & Stolze (eds.), 2010.

In the first part of the project (Padel & Gössinger (eds.), 2008), based on literature review and the positions of suppliers and their initiatives, promotional message contents were defined that were expected to be most effective. The initial point was research into the concept of ethical consumerism and corporate social responsibility and identifying the "organic plus" value. 72 different promotional message contents were identified as used by companies supplying organic products in the above listed 5 countries. This number was reduced to 14 through expert assessment, with 2 different promotional message contents for each of the following ethnical attributes: biodiversity, animal welfare, regional production, fair trade, farm welfare, social aspect of production and preservation of cultural characteristics.

The second part of the project (Zander & Hamm (eds.), 2009) included offering two different promotional message contents within defined ethical attributes to consumers in the five observed countries, and then adding price, with the aim to test the influence of these different promotional message contents on the choice of products with desired characteristics. Marketing research was based on the application of the information-display-matrix technique.

A two-dimensional matrix displays the alternative product varieties in columns, whereas rows present their attributes, where the intersection fields contain various hidden promotional message contents, describing the content of product-related attributes, which must be approached successively so as to reach the information. This is a possible way of identifying relevant criteria relating to the product and their relative importance for the purchase decision.

In this specific case, the two-dimensional matrix lists the types of organic milk in columns, while ethical attributes are given to surveyed consumers accessing this matrix to make a

choice, while the fields whose content is not immediately seen are at the intersections of columns and lines.

When the consumer accesses the matrix, the promotional message about an ethical attribute of organic milk, invisible until then, appears (Figure 1). One by one field must be accessed to get information. After closing the field whose content was disclosed to the consumer, its colour would change so that the consumers could know which fields they had opened. Also, they could highlight particularly interesting fields with a third colour, and the same fields could be opened several times. When the consumer would decide to "buy" a certain product (s)he had to click the header of the chosen product (i.e. the top of the column where its name is stated). The software would then ask the consumer to confirm the decision (Figure 2) and store the information on the order of accessing individual field, time devoted to each individual field, and the total time until making the purchase decision.

The results indicate that the most popular ethical attribute for promoting "organic plus" value are animal welfare, regional or local food production and fair trade.

Figure 1. The information-display-matrix with open promotional message content with "animal welfare" ethical attribute of organic milk B

Source: Zander, K.,& Hamm, U. (eds.) (2009). Farmer Consumer Partnerships – Information search and decision making – the case of ethical values of organic products. Tjele: International Centre for Research in Organic Food Systems (ICROFS).

Figure 2. The information-display-matrix – choice of organic milk C

Source: Zander, K.,& Hamm, U. (eds.) (2009). Farmer Consumer Partnerships – Information search and decision making – the case of ethical values of organic products. Tjele: International Centre for Research in Organic Food Systems (ICROFS).

In the third part of the project (Naspetti, Zanoli (eds.), 2010) labels with two arguments each were made for all three chosen attributes (animal welfare, regional or local food production and fair trade), and consumers' impressions about made labels were researched, in this case, on the example of organic eggs. Discussion on the made labels was conducted in eighteen focus groups in all five countries. The opinions on labels were expressed through discussion, and then through a questionnaire. In the second stage, a recollection study of offered arguments was performed, ten days after the discussion in focus groups. Results were related to the appeal, persuasiveness, reliability and effectiveness of the label. The consumers did not express sympathy to arguments related to their own emotions. Animal welfare was the most preferred argument, local food production took up the second place, while the third place was taken up by fair trade. As for argument persuasiveness, difference between individual was more manifest, while effectiveness was measured through purchase intention.

The fourth part of the project (Stolz, Stolze (eds.), 2010) consisted of market research conducted in all five countries, by means of consumer choice experiments. The research subject was consumers' preferences and willing to pay for organically produced eggs, with the following contents printed or not printed on the packaging: country of origin (e.g. Great Britain), region of origin (e.g.) Berkshire), with the highest animal welfare standards, and fair price for organic farmers, plus twenty cents extra. Each consumer evaluated maximum one of three offered packages in six sets (it was possible to choose none). Each set included two packages featuring one or several contents printed,

whereas one package did not feature any content, and was the lowest-priced. After this, a questionnaire was filled in, so as to research the variables of market segmentation that could describe consumers with different preferences.

The consumers showed higher preference for eggs whose packaging featured the above mentioned contents than those featuring no content, but the preference varied depending on the content and the country. Stating the regional origin was preferred most in all countries except Austria, where the fact that eggs were produced with the highest animal welfare standards and originated from a certain country accounted for more preference. On the other hand, stating that the organic eggs were produced with the highest animal welfare standards was less preferred in Germany and Switzerland than stating the region. The Germans and the Swiss also preferred the statement that the eggs were fair trade products (and 20 cents more expensive), but only after stating a certain region and the fact that the eggs were produced with the highest animal welfare standards.

Final outcome of the research gave the following picture: the higher the consumers' education level, the higher the share of organic food and drinks in their shopping, the more preference of a certain region; the higher the consumers' purchasing power, the higher share of organic food and drinks in their shopping cart, involvement in animal welfare, belief that the government and food producers should apply high animal welfare standard levels and the farmers should be subsidised for integrating these standards in the production system, the more preferred statement that organic eggs were produced with the highest animal welfare standards.

Although partially the message content differs from the one shown in the previous section, and although the message content is presented only by means of packaging of the organic product, the second project presented in this section of the paper confirms the importance of conducting consumer-centred marketing research for the purpose of choosing the promotional message content. The above mentioned differences, notably in terms of choosing the target audience in the second stage do not diminish the image of the importance of the topic of this article in foreign research. In relation to this, at the same time, relatively less space was devoted to presenting the information-display-matrix as an underrated technique in domestic marketing research that can be implemented for promotional purposes.

Results and discussion

Consumer-centred marketing research for the purpose of choosing the promotional message content for domestic organic products

Whether we opt for export or turn to domestic consumers, the placement of domestic organic products should be based on the marketing concept principles. As regards promoting these products, what is needed is managing all the integrated marketing communication activities, including the choice of the promotional message content, which requires consumer-centred marketing research for its purposes.

Before choosing the promotional message content, it is necessary to define the target auditorium, i.e. segment the market. Notably, the already defined segments can be studied further, e.g. in Serbia: mothers with infants, the health conscious, the elderly, the young and fashion conscious (Stevanović, 2010), or the research can be conducted on a representative sample of the general population. One of the possible approaches is food-related lifestyle market segmentation. Food-related lifestyle is, in fact, the basic pattern of how consumers use food to fulfil the basic drives and achieve core life values (Brunsø et al., 2002).

Another possible approach to market segmentation is preference-based market segmentation. The advantages of organic consumers' preference-based market segmentation could principally be identified in possibilities of (Đokić et al., 2012):

- wording the question in a manner that suits the choice in real-life shopping situations consumers find themselves in;
- reducing the amount of socially desirable bias;
- testing the significance of various other (socio-demographic, psychographic and/or behavioural) market segmentation criteria for describing identified segments;
- increasing the comparability of results of different pieces of research;
- using them in planned new product launches and on emerging and developing markets;
- studying the difference between expressed preferences and purchases, in terms of obstacles to translating preferences into purchases.

As regards the objectives of promoting organic products, it is beyond doubt that the ultimate goal is the sale of the placed domestic products. Moreover, if the placement occurs on organic food markets in the initial development stages, a special attention must be devoted to educating the general population on value added characteristic of the products, on institutional market development and on distribution channel development. It is the value added that communicates with consumers by using various, targeted appeals that should be in compliance with the consumers' motives and desires (Davčik, 2004).

The choice of organic products' promotional message is also possible based on previous research, but the ideal option is to conduct consumer-centred marketing research for the purpose of choosing this content. To this purpose, it is possible to use the focus group or in-depth interviews, starting from the means-end approach to consumer behaviour based on the assumption that consumers are not interested in the product per se, but in what the product enables them to achieve (Grunert, 2005). Laddering is the most used technique in this respect in order to study how consumers create mental associations from product characteristics to a more abstract quality dimensions, down to core life values. The results of these studies are mostly presented in hierarchical value maps. Organic products are characterised by credence quality, which will be based on earlier inference even after the purchase.

As regards the domestic organic product market, some studies can be cited that also refer to promotional message contents. It is emphasised (Stefanović, 2010) that an

average consumer in Serbia associated words "organic" and "healthy", and future market development requires intensive campaign with a clear communication strategy targeting defined consumer segments: mothers with infants, the health conscious, the elderly, the young and fashion conscious, where the promotion activities and health food awareness-raising campaign would focus on health and highlight the natural features of such food and its significance for environmental protection. Results of conducted research (Vlahović et al., 2010) point out that younger generations are more motivated for consuming organic food, both for environmental and health concerns. Other conducted research (Đokić, Tomić, 2011) argues that the promotional message content could also refer to the dynamic concept of quality immanent to organic products.

The authors' proposal regarding the choice of promotional message content for domestic organic products would include themes "the way our grandparents did", or "ethno-style" for domestic consumers. As for placement to developed foreign markets, provided that the diasporas is not the target auditorium, the country's image needs to be working on in general, simultaneously with providing a sufficient quantity of supply. In addition to research on the example of specific products, it is also necessary to research the content of promotional message to various segments.

When choosing the promotional content, certain legal limitations must be borne in mind as well e.i. limitations stemming from the EU legislation regarding the health related claims that would be used in product promotion (Aschemann et al., 2008). Health claim is defined as "any claim stating, suggesting or implying that there is a relationship between food category or one of its ingredients and health". Thus, the Regulation on Nutrition and Health Claims Made on Foods (EC No 1924/2006) was passed in order to harmonise similar regulations within the EU and customer protection, and pertains to all claims on nutrition and its health impacts stated on packaging, in advertising, even in brands.

Conclusion

Promoting organic food products requires conducting integrated marketing communication activities. Choosing the promotional message content, together with designing the structure, form and source of promotional message, is a part of creating a promotional message within the integrated marketing communication activities. The research subject in this article was consumer-centred marketing research for the purpose of choosing the promotional message content for foreign and domestic organic products that resulted in several practical recommendations:

- maintain detailed communication with all consumer segments about food quality (include avoiding the use of pesticides and additives, and especially highlight the nutritional value);
- "tell the organic story" so that the promotional message content includes the origin of the product;
- use the appeal to buy domestic products produced "the way our grandparents did", in "ethno-style";

- include various benefits of consuming organic product (possible through information provided on the product packaging, encouraging visits to farms, developing contacts with the media);
- highlight the taste of products in the promotional message content, and, in relation to this, organise promotional tasting events;
- create promotional messages of simple content, which would suggest consumers how to identify organic products and distinguish them from other "natural" ones;
- emphasise the health benefits in the promotional message content, to the extent allowed by advertising legislation;
- develop relations and connections with humanitarian environmental organisations.

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MARKETING ISTRAŽIVANJE U FUNKCIJI IZBORA SADRŽAJA PROMOTIVNE PORUKE DOMAĆIH ORGANSKIH PROIZVODA

***Suzana Salai*[5]*, Tomislav Sudarević*[6]*, Nenad Đokić*[7]*, Ljubomir Pupovac*[8]

Rezime

Izbor sadržaja promotivne poruke spada u aktivnosti integrisanih marketing komunikacija. Kada su u pitanju organski proizvodi u svetu, istraživanjima u vezi sa izborom sadržaja promotivne poruke posvećuje se velika pažnja prvenstveno na osnovu realizacije marketing istraživanja potrošača tih proizvoda. Promocija domaćih organskih proizvoda takođe nužno podrazumeva realizaciju marketing istraživanja potrošača u funkciji izbora sadržaja promotivne poruke. S tim u vezi, u ovom radu je definisano nekoliko ciljeva: istražiti izbor sadržaja promotivne poruke u odnosu na ostale aktivnosti integrisanih marketing komunikacija, istražiti navedeno pitanje u kontekstu relevantnih inostranih marketing istraživanja potrošača organskih proizvoda, sagledati nivo dosadašnjih marketing istraživanja koja bi iz domaće perspektive mogla koristiti pristupanju navedenoj problematici, kao i istražiti koje preporuke i implikacije bi se mogle generisati kada su u pitanju domaći organski proizvodi.

Ključne reči: *organski proizvodi, marketing istraživanje potrošača, integrisane marketing komunikacije, aktivnosti integrisanih marketing komunikacija, izbor sadržaja promotivne poruke.*

5 Prof. dr, redovni profesor u penziji, Ekonomski fakultet Subotica, Univerzitet Novi Sad, Segedinski put 9-11, 24000 Subotica, Srbija, E-mail: sazu@ef.uns.ac.rs

6 Prof. dr, vanredni profesor, Ekonomski fakultet Subotica, Univerzitet Novi Sad, Segedinski put 9-11, 24000 Subotica, Srbija, E-mail: tsudarevic@yahoo.com

7 M.A., asistent, Ekonomski fakultet Subotica, Univerzitet Novi Sad, Segedinski put 9-11, 24000 Subotica, Srbija, E-mail: djokicn@ef.uns.ac.rs

8 M.Sc., asistent, Ekonomski fakultet Subotica, Univerzitet Novi Sad, Segedinski put 9-11, 24000 Subotica, Srbija, E-mail: ljubomirp@ef.uns.ac.rs

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APPLICABILITY OF DIFFUSION OF INNOVATION THEORY IN ORGANIC AGRICULTURE[1]

Mirela Tomaš Simin[2], Dejan Janković[3]

Summary

The authors discuss the possibility of applying the theory of diffusion of innovations in the concept of organic farming. Agricultural and food sector has been exposed to significant changes over the past two centuries. That was very significant for the theory of diffusion of innovations that sought to better understand the process of knowledge transfer and adoption of innovations. Organic farming has developed as a response to the environmental and other problems of conventional agriculture. Also, it is a reaction to some issues regarding rural development. By introducing the theory of diffusion of innovation, the aim of the paper is to take into the consideration the possibility of its application to the organic system analysis. By that, we wish to take into account all the specifics which enable to observe the system of organic farming as an innovation itself. The authors conclude that the theory of diffusion of innovations can be used in the research of organic farming systems, with the respect of all characteristics and particularities of organic farming.

Key words: *organic agriculutre, innovation, diffusion of innovation, adoption of innovation.*

JEL: *Q01, Q56, Z13*

Introduction

Agriculture has always been a specific economic activity. Therefore, it has specific characteristics associated with knowledge, innovation and transfer of new technologies within the knowledge and information system. The major changes that have affected the food sector in the period after the Second World War must be considered with the help of global

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2 Mirela Tomaš Simin, M.Sc., teaching assistant, University of Novi Sad, Faculty of Agriculture, Trg Dositeja Obradović 8, 21000 Novi Sad, Serbia, E-mail: mirelat@polj.uns.ac.rs

3 Dejan Janković, Ph.D., assistant professor, University of Novi Sad, Faculty of Agriculture, Trg Dositeja Obradović 8, 21000 Novi Sad, Serbia, E-mail: jankovic@polj.uns.ac.rs

approaches, such as those developed in the social theories of the time and date. Exploring the causes and effects of these changes caused the process of knowledge transfer and diffusion and adoption of innovations in this field to be analyze from a sociological point of view. When accessing such analysis one should take into account the diversity of peasant society and the ways in which innovation and knowledge are transfered and adopt.

The aim of the paper is to introduce the theory of diffusion of innovation and the possibility of its application in the assessment of organic farming. Organic farming has developed in response to the growing problems of conventional agriculture, especially in relation to the environment. Although it is farming, organic agriculture, in this context (diffusion of innovation) is significantly different from conventional production. For example, in organic agriculture there is an increased volume of indigenous agricultural knowledge. For these reasons, it is necessary to understand the ways that knowledge is being transfered into organic agriculture and to identify fundamental differences of this process in conventional and organic production.

According to Petrović et al. (2004) rural communities are part of a global society and share its destiny. However, in many ways, they are very specific social organisms, especially when it comes to changes in the countryside and agriculture. Therefore, the process of spreading (diffusion) and introduction (adoption) of innovation, knowledge and technology - which is usually at the center of social change in rural communities – is a complex and contradictory process.

Associated with organic production is the "production of ecological culture" - new lifestyles in modern society and its way of life. According to Ćifrić (2003) ecological (or organic) agriculture has existed as a practice in a traditional peasant society. Here, it must be noted that, even though being similar to traditional agriculture, organic agriculture is indeed modern agricultural practice based on up-to-date scientific knowledge or integration of modern scientific knowledge with the indigenous knowledge of local farming practices and circumstances. With the emergence of industrial (conventional) agriculture and its consequences for humans and the environment, organic farming became theoretical, environmental, technological, social and political problem and current world topic (Ćifrić, 2003). Organic farming is the result of a much broader context of modern development and environmental discourse than agriculture itself and the specific social circumstances. Incentives are most often from practice (health, economic, environmental, social), (see: Čikić, Petrović, 2010) and theoretical discourses (the search for a new development paradigm). Organic agriculture - along with a number of other alternative food movements - according to some authors (Lockie, Halpin, 2005) produces food «*not only good to eat but good to think*". Vlahović et al. (2011) defined organic agriculture as the most acceptable form of agriculture in the context of environmental criteria and it is not just "*farming without the use of artificial chemicals*".

While the analysis of the historical development of organic agriculture is present in the world and national literature (Lampkin, Padel, 19945; Lazić et al., 2008; Offerman, Nieberg, 2000), systems analysis of mutual relations of producers, researchers and extension agents in organic agriculture has so far been neglected (Aeberhard, Rist, 2008). Rogers (2003) stated that the

adoption of new ideas, even when it shows clear advantages, is a difficult process. According to Rogers (2003), many innovations require a certain period of time before becoming adopted by wider population/users. Problem that arises is how to shorten this period. Also, according to Rogers (2003), diffusion is the process in which an innovation is communicated through certain channels over time among the members of a social system. It is a special type of communication, in that the messages are concerned with new ideas (consult: Leeuwis C. (2008): *Communication for rural innovation: Rethinking agricultural extension*).

The problem of diffusion and implementation of innovations in agriculture should not be considered simplistic, so one would possibly thought that the process of diffusion and implementation of innovation will take place successfully if there are sufficient financial resources, agricultural experts, awareness of adopters, access to innovation etc. In the last century, the experiences of many countries (particularly less developed and developed ones) have often proved unsuccessful in modernization of agriculture and rural development. Although the activities were (sometimes) carefully prepared, generously financed and supported otherwise by the governments of these countries and influential international organizations, the expected outcome haven`t occured (Petrović et al., 2004). Failure of *Training & Visit* extension approach is a good example of previous statement.

Methodology and data sources

The aim of the paper is to introduce theory of diffusion of innovation and identify possibility to apply this theory to the organic production system, taking into account all its specifics. Descriptive method was used to study the problem, combined with the method of abstraction. With the deduction model, existing theoretical knowledge was considered. Method of induction was used in generalization of the data and conclusion. Secondary sources of literature were used as well as primary data resulting from the research in mentioned projects.

Theory of diffusion of innovations

Diffusion theory, developed in the U.S. by rural sociologists, is a very important theory that describes the process of change, for example, diffusion of innovations in a community. This theory attempts to predict the behavior of individuals and social groups in the process of adoption of innovation, considering their personal characteristics, social relations, time factor and the characteristics of the innovation (Padel, 2001).

Innovation is an idea, practice or object that is perceived as new by an individual or other unit of adoption (Rogers, 2003). Pejanović and Njegovan (2009) stated that "*innovation is a new method of production of known goods, discovery and production of new types of products, introduction of new production combinations"*.

According to Rogers (2003), diffusion of innovation is a kind of social change. It is a social process that involves interpersonal communication. Communication is a process in which participants create and share information with one another in order to reach mutual understanding. Diffusion is a special form of communication related to new ideas. It is

a specific form of social change, defined as a process by which alteration occurs in the structure and function of a social system. Hall (2003) states that in the study of innovation the term diffusion is most often used to describe the process by which individuals or groups (companies) in the society/economy adopt a new technology or replace old technology with new.

Innovation as a social construction is created in interaction of awareness and the need for innovation (utility, acceptability, compatibility of innovation, the need to overcome the existing and well-known), openness and focus on creating a system of social innovation, creative personalities. Anyway, innovation is the result of synthesis of innovative individuals - talented and brilliant personalities, their physical and mental characteristics, as well as social conditions and scientific environment, and a position within the wider scientific community (Janković, 2005). In this regard Aeberhard and Rist (2008) states that new ideas can be generated by individuals, but only through collective cooperation in the process of social interaction. The adoption of innovations in agriculture is positively correlated with the level of education of the adoption unit (farmer), the experience and the property of holdings (measured in assets of the farm), (Rijn et al., 2012).

The roots of the modern theory of diffusion of innovations can be found in the research that was most represented in the American rural sociology from the 1940`s to the 1970`s[4]. Scientific research area of diffusion of innovation, especially in rural areas and agriculture, was one of the main themes of early American rural sociology and it was developed for practical needs (Janković, 2005). Sociological research of the diffusion of innovation developed mostly from antropology, due to its qualitative methodology. However, as Rogers noted (2003), creation of the paradigm had to wait for the the rural sociology tradition which has the highest percentage of participation in studies of diffusion of innovations. According to Rogers (Rogers, 2003; Janković, 2005; Padel, 2001), one of the most important research associated with the diffusion of innovations was the research study of Ryan and Gross (1943) who studied the diffusion of hybrid corn among North American farmers. This research led to the establishment of «research paradigm» in the study of diffusion of innovation, especially in the U.S.A.[5]. In this study (Ryan, Gross, 1943), empirical data show that based on the time of adoption of the specific sample, categorization of adoptive paterns can be made and it will show cumulative curve that takes the (famous) S-shape, while in the inspection of frequency of adoption it has a shape of a bell.

At first glance, the diffusion of innovation theory looks good and is applicable to the process of adoption of organic farming (Padel, 2001). However, there are some concerns. The diffusion theory was developed in the 1980`s, during the paradigm of productivity of

4 It should be noted that a significant legacy for future researchers of diffusion process was given by Gabriel Tard with its study of the diffusion process and the "law of imitation", almost at the same time when some anthropologists and researchers have dealt with evolutionary concepts (Janković, 2005).

5 The paradigm was influenced beyond U.S.A., since most researches on the subject in the world was often performed according to the American model.

agriculture and "green revolution". Organic farming is a challenge to this paradigm, because it is characterized by a series of goals related to environmental protection and sustainable development (Padel, 2001). Organic farming is the closest to the ecological principle of sustainable agriculture, which is, compared to conventional agriculture, rather innovative (Beauchesne and Bryant, 1999). Considering organic agriculture as complex of agricultural innovations, Sutherland and Darnhofer (2012) stated that it has becoming more acceptable nowadays, especially "*when it was seen to be profitable, especially if it was more profitable than neighbouring conventional farms*".

According to Padel (2001), diffusion theory could help understanding the process of diffusion of organic agriculture in a community and the way in which this process can be supported and improved, for example, through the information system in agriculture or agricultural extension.

Organic agriculture and diffusion of innovation

After the Second World War, in accordance with the increasing global need for food, conventional agriculture prevails and takes growing trend. Companies that have been producing synthetic chemicals for military purposes faced the lost of market. Therefore, they had to turn to new customers - farmers. Pharmaceutical companies began to offer the full range of toxic chemicals in the form of pesticides, growth hormones, fertilizers and others. Their application combined with heavy machinery and intensive irrigation, gave very high yields. Thus began the era of the development of agriculture which was later called the "green revolution". Technology and agricultural chemical products were exported to developing countries with the purpose of (or justification) stoping the world hunger. In addition, the poor were offered genetically modified grain seed which gives a high yields while, at the same time, is resistant to pesticides (Puđak, Bokan, 2011). However, in later years, there was a manifestation of the negative impact of conventional agriculture on the environment. On that ground, the idea of organic farming was borne.

By the end of the 1960's, as a result of innovations, the rotation of crops is considered obsolete and many farmers believe that they have almost complete freedom of management of production, at least in terms of weed control. Ward states that (according to Morgan, Murodch, 2000) "*thirty years, since 1950 until the 1980s, were witnesses of the chemical revolution in British agriculture. Production practices changed and the use of pesticides in general terms*" became the basis of crop production. This revolution had set agriculture on a separate development path associated with the constant use of innovative technology, which aimed to increase output and productivity. Scientific researches in agriculture and food production in the pre-war and post-war period (especially) were mainly concentrated on the search for technological solutions that will increase production efficiency. The key instrument of government policy was the research and development aimed at encouraging primary production (Lowe et al., 2008).

Tovey (1997) stated that, according to the dominant perspective of rural sociology in developed countries, modernization of agriculture is primarily related to the production of

more output using less rural resources. The dominant trend in the countryside during the past century or more has been the decrease of resources usage - primarily rural labor and, later, agricultural land - for purposes outside the agricultural production.

When studying the diffusion of innovations in agricultural production, one must have in mind that, in comparison with scientists` and researchers` focus on how and why things happen, for farmers is of particular importance that the applied production method really works. "*If there is a positive result, farmers are willing to use a certain farming method and to accept the underlying scientific or philosophical explanation*" (Aeberhard, Rist, 2008).

Beauchesne and Bryant (1999) defined organic agriculture as a social and technological alternative to conventional production, although in this dichotomy lays something more complex reality. Organic farming is often associated with the "old" method of production and often looks like "return to the past". However, it should be noted that there is a difference between organic agriculture and peasant agricultural production, as Ćifrić (2003) calls it. According to Ćifrić (2003): «*it is sufficient to say that the peasants' production is fundamentally ecological (organic) production as farmer's work has always focused on sustainability*. *Not only the production is ecological, but also rural way of life and rural society in general".* Ecological (organic) agriculture is not a conservative concept. It should not be understood as a request to: a) return to the pre-industrial mode of production in terms of technological obsolescence and b) return to the rustic, traditional way of life which includes a return to the old relations in the family, including gender and generation relations, etc.

Ecological (organic) agriculture is a social innovation. In this way, organic agriculture is not only a new form of farming. It is a social innovation aiming to change patterns in the relation between community and environment. It should be understood as: a) the abandonment of domination paradigm of industrial agriculture, b) the possibility of additional employment of labor on the family farm and society, c) benefit of quality products in small areas, d) boost of the development of "closed" system of production, e) the increase use of natural energy and organic processes. Organic farming is contemporary version of peasant agriculture because it assumes: a) recognition of some experiences of the peasant economy (especially those which are related to a balanced relationship with nature) and b) involves the application of science in a way that guarantees its ecological character (Ćifrić, 2003). Ecological (organic) agriculture is the idea (and practice) which represents a change in thinking about food. It goes beyond the question of the nutritional composition of our meals and becomes a part of our lifestyle. Some authors (Lowe et al., 2008) call food produced according to organic principles as alternative food.

Despite of some differences in the definition of the concept of organic farming, the main goal of this system of production is sustainability.The term «sustainable» is used in a broad sense, including economic, social and natural sustainability. Katić et al. (2010) state that «*organic farming, as a special form of agricultural production, is the basis for sustainable agricultural production. It is a form of production that best meets the requirements of environmental protection and sustainability principles*". The development of organic agriculture is

primarily related to the farmers, who were the pioneers in this production. Knowledge and information on organic farming was often distributed through informal networks, initially. This was followed by the establishment of the different organizations and associations in organic agriculture, sometimes encouraged by individuals interested in the development of agriculture and rural development. In the early stages, research, as an important factor of agricultural development, played a minor role (Padel, 2001).

Motives for conversion to organic production are different. The pioneers of organic agriculture primarly stated philosophical and ideological reasons (Padel, 2001; Puđak, Bokan, 2011), such as the connection with nature, a holistic approach to life, the desire to move away from the capitalist system of production and life. Nowdays, motives are much more profane and associated with the economic benefits of organic agriculture, expressed through a premium price which, under certain conditions, can enable a profit equal to or higher than in conventional production (Offerman, Nieberg, 2000). By changing motivation, community of organic producers takes on new characteristics. This phenomenon is also associated with a change of political circumstances relating agriculture. At the beginning or in the formation of the organic movement, this production system represented an opposition to the authorities and policies. Aeberhard and Rist (2008) stated that organic agriculture is currently supported by subsidies in many countries. The course of the acceptance of organic farming was carried out through phases: in the first phase, the organic movement has been stimulated by the pioneers (innovators, according to the theory of diffusion of innovations) that were developing new ideas and concepts and not necessarily follow the usual way of life. Pioneers were often seen as the outsiders and newcomers. They were constantly in a position to defend their views and ideas. These created a strong social cohesion among the pioneers in organic farming and promote the intellectual and spiritual connection. Today, organic farming is regulated by law, well positioned in the market, widely accepted in society and organic producers have no more a role of outsiders.

Sociological framework of understanding the process of diffusion of innovations in rural areas and agriculture is analyzed by researchers (see Jankovic, 2005; Čikić, Petrović, 2013) indicating the complexity of this process and sociologically relevant factors that affect it. Compared to organic production, Čikić and Petrović (2010) stated that if the development of organic farming is regarded from the farm perspective, a key factor in making a decision about the conversion from conventional agricutlure is the awareness and knowledge of farmers (and other members of the household who participate in making decisions) about what organic farming means, what are the preconditions for engaging in the production, what organic farming can bring to the farm, etc. As organic production evolve, a significant change in the organization of work on the farm and the role of knowledge and information is essential to the successful execution of a change.

The question is whether the diffusion of knowledge in organic farming differs from those in conventional agriculture, and if so, what is the major distinction? The answer to this question must be sought in the general factors that determine the diffusion of knowledge in agriculture (Čikić, Petrović, 2010). The entire process of diffusion of knowledge,

innovation and skills in organic farming is impossible to fully consider, much less evaluate its effectiveness, if one do not have in mind the "*general characteristics of agricultural production and the level of development of agricultural area, the level of development and characteristics of organic production, the general characteristics of organic farmers and farms, characteristics of the agricultural policy, the institutional framework of the whole process (from the state through research institutions to agricultural extension services) etc"* (Čikić, Petrović, 2010). From this list, one should not leave out the influence of the local community, migration effects, the degree of urbanization, the impacts of different social groups (such as Manufacturers› Association) and the broader macro-factors such as social structure, type and openness of society for innovative processes (in terms of socio-cultural value system) and so on. All these factors provide a in-depth explanation of the individual as a «*unit of adoption*" which actually represents the "*tip of the iceberg*" and is always "*situated in specific social relations that directly and indirectly determines its social action and thus the adoption of innovations*" (Janković, 2005).

According to the theory of diffusion of innovations, the assumption is that innovators are better informed compared to late adopter and have more social capital in, but also outside of their local community. In organic farming, there are a high proportion of producers with urban origin, with high level of academic education and less experience in the agricultural production. Early researches suggest a lack of social acceptance of organic farmers as a result of the conversion process, while in subsequent studies this relationship is less important (Padel, 2001; Puđak, Bokan, 2011). Organic producers with the urban origin can be prepared for such difficulties, because they are less dependent of the local community. On the other hand, they are not taken seriously as an example because they are not considered real farmers. Researches suggest that early adopters are more oriented to the commercial aspects of production, that is to a viable or financial motives compared to sustainable motives. This may be correlated with the increasingly difficult position of agriculture (Padel, 2001). These so-called "generalizations" are more or less argued in many studies of diffusion of innovation and they are reported by Rogers in the analysis of all relevant elements of the diffusion process, *ie.* innovation decision process (Rogers, 2003).

The process of testing or the phase of experimenting with innovation, as one of the most important in making a decision on their adoption of organic production, is significantly different from the same phase in the conventional agriculture, because of its very technological and organizational specifity (Čikić, Petrović, 2010). Sutherland and Darnhofer (2011) have also confirmed that in their study, where some participants indicated how their decisions was affect by the ability to «experiment» or «try out» organic production before the conversion process. According to the diffusion theory, the innovation should meet certain criteria in order to be (easily) adopted. One of them is obvious economic advantages. Organic agriculture is a complex system which affects the entire household, not just farm as a specific production unit. The application of the diffusion theory on such a complex system is not common, because most of the research of diffusion is related to the adoption of a single new technology. It was observed that farmers often experiment with innovation, experimenting on the part of households, for example growing organic vegetables, which can be linked to «trying» the

organic agriculture (Padel, 2001). Some researches suggest that for some farmers the decision to switch to organic production system payed off (Offerman, Nieberg, 2000). If one discovers the benefits of the adoption of innovations, and if there is an internal need for the adoption of innovations, the farmer will adopt the innovation (Janković, 2005).

In the organic agriculutre it is not just the technical aspects but anthropological relation of man and Earth and the earth as a specific plot (Ćifrić, 2003). However, when researching different farming systems, one should always bear in mind the shortcomings of it. So Kirchmann and Thorvaldsson (2000) reported that many problems related to conventional agriculture and environment are also present in organic farming. However, this analysis is beyond the scope of this paper, although it remains an open question for future research.

Conclusion

Puđak and Bokan (2011) emphasize that holistic approach in analysis is too complex. Therefore, most of the scientists simplify their analysis to a specific factor or characteristic. Taking into account all economic, nutritional, environmental, and social factors together is too much trouble, and maybe (quantitative) impossible. In addition, and perhaps more important is the explanation of Kuhn's paradigm. If monocultural farming and the entire system of conventional agriculture, together with the economic goals and global markets, is understood as part of the same (scientific) paradigm, it is not surprising that many arguments, even if scientifically validated "against" these practices, does not mean that they will be rejected. New scientific knowledge about the harmful effects of conventional agriculture and multiple benefits of organic farming simply does not fit into the current system of truth in current paradigm[6]. In this regard, it should be noted that some of the most serious criticism of the consequences of modernization and technological, economic and structural determinism are still present in the social sciences of developed countries (those disciplines that deal with agriculture and rural development), (Janković, 2012). In these, modernization is seen as «*a powerful political and economic project in which the state, science and agribusiness have been central*" (van der Ploeg, 1995). Social theory that deals with these issues has witnessed increasing quantity of evidents that the modernization paradigm in agriculture in developed countries, in some respects, has long been experiencing crisis. This paradigm is marked by exogenous and sectoral approach, with an emphasis on specialization in agriculture, land policy (the enlargement) the concept of adoption of new technologies, encouraging the mobility of labor and capital from farms that are not considered "optimal" for the dominant development trends (Janković, 2012). The crisis of this development paradigm was sensed

6 They fit in the paradigm as a set of scientific hypothesis/statements which enables us to understand reality. Nevertheless, according to Kuhn, paradigm also entails social values which determine type of the research, method to be applied etc. Because of this, paradigm (as science, in general) is not excluded from the influence of social circumctances (see: Kun, T. 1974. Struktura naučnih revolucija, Beograd: Nolit.). The question whether knowledge about the benefits of organic farming fits to the current system of truth is much more related to the issues that go beyond strict boundaries of sciences. It is a question of power relations in the production/economy sphere.

at the end of the last century, through the emergence of a large surplus of food and instability of agricultural markets as a result of modernized and globalized agriculture. Since then, socio-economic considerations for the future of European agriculture and its changing role in modern European societies has begun. This role is now being pondered in terms of deviation from productivism in agriculture, which is regarded as virtually synonymous with the postwar modernization model. Post-productivistic transition imposes a different trend (Woods, 2005): extensification, farm diversification, an emphasis on countryside stewardship and enhancing the value of agricultural products.

The conventional agriculture is in the crisis from the 1970`s so that the difficulties of the economic situation of farmers came to the fore. One of the important aspects of these difficulties is their dependence on external, specialized sources of knowledge, because modernization (according to productivism model) makes farmers weak in ability to explore new farming practices. In the organic system, farmers have to forgott practices that are used in the conventional production system, and must re-learn how to practice agriculture in a way that is more in line with the eco-system and the rhythm of nature. This process of food production also involves learning new forms of distribution some of which are highly localized. Organic agricultural production is a possible solution for certain problems of conventional agriculture. However, if farmers want to convert to organic production, they have to adopt new knowledge and innovation. Refusal to re-educate is as a barrier to organic agriculture same as poor financial incentives, because without the public support designed to help farmers to acquire the skills needed for this type of production, the burden of conversion will fall only on a few farmers committed to preserve the environment.

Ecological (organic) agriculture is not simply just agricultural production, but it assumes a definite social system - a society, which in itself has not only developed the rational dimension of the application of new knowledge in agricultural production and processing, but also a set of values (moral and aesthetic) that legitimize such production and moral action (Ćifrić, 2003). Janković (2005) states that it must be concluded that sociological analysis and explanation of the phenomenon of diffusion of innovations in society, especially in peasant society, must take into account the undeniable fact - traditional peasant society is transforming.

Theory of diffusion of innovations can be used in order to obtain a better understanding of the process of diffusion of organic production systems, especially the process of adoption of innovations in this type of the production. Of course, the theory must be applied with caution, bearing in mind the limitations that come with it, especially in relation to organic farming which is a complex set of innovation. Taking into account the mentioned elements of the diffusion of innovation, it is necesary to draw attention to the characteristics of innovation (eg, relative advantage, compatibility, complexity, triability, observability) that are usually absent in such systems[7]. A similar situation applies to the complexity of innovations, which is present in the organic production in the form of the key rules of production, certification,

7 Especially for long term effects that are present conserning environment or well-being and health of the consumer, as well as the public interest because the producers do not need to be aware of these when deciding on the acceptance of the principles of organic production.

etc., which can not be ignored. It is, therefore, important to support these values and practices through agro-environmental programs as instruments of agri-environmental policy, as it provides producers exchange for the provision of environmental management, offering regular payments which contribute to raising awareness and values, and practices which supports the concept of sustainability. Accordingly, we agree with the Janković statement (Janković, 2005) that the theory of diffusion of innovation, no matter to critical remarks, however, reached a level of development where its findings must be considered a significant contribution to the explanation of the process of diffusion as a form of social change. In accordance with the principles of this theory organic production can be supported and spread among producers with significant impact on their incomes, but also protects the public interest in terms of environment, quality and safety in the food chain, consumer health, etc.

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MOGUĆNOST PRIMENE TEORIJE DIFUZIJE INOVACIJA U ORGANSKOJ POLJOPRIVREDI[8]

Mirela Tomaš Simin[9], Dejan Janković[10]

Rezime

Autori razmatraju mogućnost primene teorije difuzije inovacija na koncept organske poljoprivredne proizvodnje. Poljoprivredni i prehrambeni sektor je tokom prethodna dva veka bio izložen značajnim promenama, što *je pokazalo značajnim fenomenom za teoriju difuzije inovacija koja je nastojala da bolje razume proces prenosa znanja i usvajanja inovacija. Organska poljoprivreda se razvila kao odgovor na probleme zagađenja* životne *sredine a kasnije i druge probleme u konvencionalnoj proizvodnji uključujući i pitanja ruralnog razvoja. Cilj rada je da se upoznavanjem sa teorijom difuzije inovacija razmotri mogućnost njene primene na sistem organske proizvodnje, imajući u vidu sve njene specifičnosti,* što *otvara prostor za posmatranje samog sistema organske proizvodnje kao inovacije. Autori zaključuju da se teorija difuzije inovacija može koristiti prilikom istraživanja organskih sistema poljoprivredne proizvodnje, ali da se istraživanju mora pristupiti oprezno, uz obavezno uvažavanje svih njenih specifičnosti i karakteristika.*

Ključne reči: *organska poljoprivreda, inovacije, difuzija inovacija, usvajanje inovacija.*

8 Rad je deo istraživanja na projektu broj III 46006 "Održiva poljoprivreda i ruralni razvoj u funkciji ostvarivanja strateških ciljeva Republike Srbije u okviru dunavskog regiona" i projektu projektu ON 179028 „Ruralno tržište rada i ruralna ekonomija Srbije – diverzifikacija dohotka i smanjenje siromaštva".

9 Mirela Tomaš Simin, M.Sc., asistent, Univerzitet u Novom Sadu, Poljoprivredni fakultet, Trg Dositeja Obradović 8, 21000 Novi Sad, E-mail: mirelat@polj.uns.ac.rs

10 Doc. dr Dejan Janković, Univerzitet u Novom Sadu, Poljoprivredni fakultet, Trg Dositeja Obradović 8, 21000 Novi Sad, E-mail: jankovic@polj.uns.ac.rs

ZAPISNIK

sa VII (sedme) sednice Skupštine NAUČNOG DRUŠTVA AGRARNIH EKONOMISTA BALKANA održane 06.06.2014. godine u Beogradu (na Skupštini su prisustvovala 42 člana)

Sednicu Skupštine NDAEB je otvorio predsednik Društva, prof. dr Radovan Pejanović, koji je predložio sledeći dnevni red:

1. Izbor radnih tela skupštine (predsedništva, verifikacione komisije, zapisničara i overača zapisnika).
2. Izveštaj o radu NDAEB-a za 2011., 2012., 2013. i 2014. godinu.
3. Plan aktivnosti NDAEB-a za 2015. godinu.
4. Razrešenje dosadašnjeg i izbor rukovodstva za sledeći mandat od 2015-2019. godine.
5. Razno.

Ad-1.

1.1. Za članove radnog predsedništva Skupštine NDAEB-a, predloženi su:

Prof. dr Radovan Pejanović, Srbija, predsednik,
Prof. dr Drago Cvijanović, Srbija,
Prof. dr Milan R. Milanović, Srbija,
Prof. dr Zorica Vasiljević, Srbija,
Prof. dr Dragić Živković*, Srbija,*
Prof. dr Mile Peševski, Makedonija,
Dr Jean Andrei, Rumunija.

1.2. Za članove verifikacione komisije Skupštine NDAEB-a, predloženi su:

- *Dr Jonel Subić,*
- *Mr Gordana Radović.*

1.3. Za zapisničare Skupštine NDAEB-a, predloženi su:

- Mr Ma*rijana Jovanović i*
- *Mr Lana Nastić.*

1.4. Za overače zapisnika Skupštine NDAEB-a, predloženi su:

- Dr Vladim*ir Filipović i*
- *Dr Branko Mihailović.*

Svi predlozi su jednoglasno prihvaćeni.

Ad-2.

2.1. Izveštaj o radu NDAEB-a za 2011., 2012., 2013. i 2014. godinu

Predsednik Naučnog društva agrarnih ekonomista Balkana prof. dr Radovan Pejanović podneo je izveštaj o radu Društva. Izveštaj se odnosi na period od Izborne Skupštine NDAEB-a (01.12.2011. god.) sa posebnim osvrtom na dosadašnji period 2014. godine.

U dosadašnjem mandatnom (četvorogodišnjem) periodu dominirale su tri grupe aktivnosti:

- Rad i unapređenje rada časopisa Ekonomika poljoprivrede, u tesnoj saradnji sa glavnim i odgovornim urednikom časopisa. S tim u vezi uspeli smo da izdamo četiri redovna broja godišnje, na engleskom jeziku.
- Rad oko pripreme, organizovanja i realizacije naučnih skupova, u tesnoj saradnji sa direktorom i pojedinim članovima Instituta za ekonomiku poljoprivrede iz Beograda. Uspeli smo, s tim u vezi, da realizujemo organizovanje i održavanje međunarodnih naučnih skupova jednom godišnje. Istovremeno smo suorganizatori nekih drugih skupova.
- Rad oko izdavačke delatnosti, gde smo, pored izdavanja odgovarajućih brojeva časopisa Ekonomika poljoprivrede, uspeli da izdamo i nekoliko monografija, što se vidi iz godišnjih izveštaja o radu.

Inače, svi naši zapisnici sa svih prethodnih skupština NDAEB-a objavljeni su u časopisu „Ekonomika Poljoprivrede".

U toku dosadašnjeg dela 2014. godine, urađeno je sledeće:

1. U prethodnom periodu Naučno društvo agrarnih ekonomista Balkana bio je suorganizator dva Međunarodna naučna skupa:

- Međunarodni naučni skup Instituta za ekonomiku poljoprivrede ODRŽIVA POLJOPRIVREDA I RURALNI RAZVOJ U FUNKCIJI OSTVARIVANJA STRATEŠKIH CILJEVA REPUBLIKE SRBIJE U OKVIRU DUNAVSKOG REGIONA - ruralna sredina i (ne)ograničeni resursi, Privredna komora Beograda, 05-06.06.2014. godine,

- 5th International Agricultural Symposium "Agrosym 2014"- Jahorina, 23-26. oktobar 2014. godine, Bosna i Hercegovina.

2. Časopis Ekonomika poljoprivrede je i dalje na nivou međunarodnog časopisa M-24. Časopis je upisan u deset baza podataka: **EBSCO, AgEcon Search, Index Copernicus Journals Master List (ICV2012:5,12), Social Science Research Network (SSRN), ProQuest, Ulrch`s Periodicals Directory, CABI, J-Gate, the World Wide Web Virtual Library for European Integration, SCIndeks.**
3. U 2014. godini, je objavljen 1 (prvi) redovni broj časopisa Ekonomika poljoprivrede, drugi redovni broj je u pripremi, i izlazi do kraja juna meseca. U prvom broju objavljeno je 18 radova (14 radova domaćih autora i 4 rada stranih autora).
4. NDAEB-a je i dalje suizdavač časopisa „Ekonomika" i „Tranzicija".

Izveštaj o radu NDAEB je jednoglasno prihvaćen.

Ad-3.

3.1. Plan rada za 2015. godinu

- Da se po potrebi, a u granicama finansijskih sredstava, održavaju sastanci Predsedništva NDAEB-a;
- Za hitne odluke, važiće mogućnost donošenja odluka telefonski ili E-mejlom, što će biti potvrđeno na prvom narednom sastanku Predsedništva NDAEB-a;
- Četiri redovna broja časopisa EP će se izdati na engleskom (pokušati izaći na SCI listu);
- Organizovanje naučnih i stručnih skupova;
- Dalje izdavanje monografija;
- Jačanje naučne uticajnosti časopisa.

Ad-4.

4.1. Razrešenje članova organa NDAEB-a (predsednika NDAEB-a, članova predsedništva NDAEB-a, sekretara NDAEB-a, nadzornog odbora NDAEB-a, i Glavnog i odgovornog urednika časopisa „Ekonomika poljoprivrede“)

Dosadašnji predsednik NDAEB-a prof. dr Radovan Pejanović, saopštio je, da po Statutu NDAEB-a mandat svim organima NDAEB-a (predsedniku, članovima predsedništva, sekretaru, članovima nadzornog odbora i glavnom i odgovornom uredniku časopisa „Ekonomika poljoprivrede“) traje četiri godine. Posebno je istakao da treba izabrati nove organe NDAEB-a kako bi svi članovi Društva imali šansu u rukovođenju Društvom.

Posle kraće diskusije, Skupština NDAEB-a jednoglasno je razrešila sve organe društva: Predsednika NDAEB-a, članove predsedništva, sekretara, članove nadzornog odbora i glavnog i odgovornog uredniku časopisa „Ekonomika poljoprivrede“, koji su izabrani na sednici Skupštine NDAEB-a od 01.12.2011. godine u Banji Vrdnik.

4.2. Izbor novih organa NDAEB-a (predsednika NDAEB-a, članova predsedništva NDAEB-a, sekretara NDAEB-a, nadzornog odbora NDAEB-a, i Glavnog i odgovornog urednika časopisa „Ekonomika poljoprivrede“)

Prof. dr Radovan Pejanović, pozvao je sve prisutne da predlože nove kandidate za sve organe NDAEB-a.

Doc. dr Jonel Subić je za predsednika Naučnog društva agrarnih ekonomista Balkana predložio prof. dr Radovan Pejanović, kako bi se nastavio kontinuitet u radu NDAEB-a. S obzirom da protivkandidata nije bilo, predlog da u naredne četiri godine predsednik NDAEB-a bude prof. dr Radovan Pejanović je jednoglasno usvojen.

Posle kraće pauze, predsednik NDAEB-a prof. dr Radovan Pejanović, predložio je nove **članove** predsedništva, i to:

1. *Prof. dr Radovan Pejanović, po funkciji*
2. *Prof. dr Milan R. Milanović,*
3. *Prof. dr Dragić* Živković,
4. *Doc. dr Grujica Vico,*
5. *Prof. dr Mile Peševski,*

6. *Prof. dr Aleksandra Despotović,*
7. *Prof. dr Zorica Vasiljević, po funkciji*
8. *Prof. dr Ferhat* Ćejvanović,
9. *Prof. dr Marko Ivanković,*
10. *Prof. dr Drago Cvijanović, po funkciji*
11. *Prof. dr Biljana Veljković,*
12. *Prof. dr Victor Manole,*
13. *Doc. dr Goran Maksimović.*

Predlog je jednoglasno usvojen.

Za sekretara je predložena prof. dr Zorica Vasiljević.

Predlog je jednoglasno usvojen.

Za nove članove **nadzornog odbora predloženi su sledeći kandidati:**

- *Dr Branko Mihailović, predsednik*
- *Prof. dr Sreten Jelić,*
- *Prof. dr Zoran Njegovan.*

Predlog je jednoglasno usvojen.

Za glavnog i odgovornog urednika časopisa **„Ekonomika poljoprivrede“** predložen je prof. dr Drago Cvijanović. Predlog je dao doc. dr Jonel Subić, koji je istakao da nije moguće obaviti sve zadatke u toku jednog mandata, te da je ova predlog dobro prihvatiti zbog kontinuiteta ka putu dobijanja zelenog svetla za ulazak na Thomposon Reuters listu i jačanja međunarodnog uticaja časopisa „Ekonomika poljoprivrede“.

Predlog je jednoglasno prihvaćen.

Ad-5.

5.1. Razno

Pod tačkom razno predloženo je da članovi NDAEB-a u narednom periodu pokrenu inicijativu za prikupljanje sredstava za kupovinu softvera, kojim bi se omogućilo utvrđivanje plagijata, za potrebe časopisa “Ekonomika poljoprivrede”.

U Beogradu, 06.06.2014. godine

Zapisničari:

- *Mr Marijana Jovanović,*
- *Mr Lana Nastić.*

Overivači zapisnika:

- *Dr Vladimir Filipović,*
- *Dr Branko Mihailović.*

Respected reviewers,

I would like to thank you on selfless contribution you gave in the process of quality improvement of the papers published in the journal Economics of Agriculture during 2013.

Editor - in - Chief
Prof. dr Drago Cvijanović

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Anđela Marković[2], Petar Petrović[3], Mirko Mirković[4]

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2 Anđela Marković, Ph.D., Principal Research Fellow, Institute of Agricultural Economics, Volgina Street no. 15, 11060 Belgrade, Serbia, Phone: +381 11 444 444/int 112, E-mail: andjela.markovic@iep.bg.ac.rs

3 Petar Petrović, Ph.D., Full Professor, University of Belgrade, Faculty of Agriculture, Nemanjina Street no. 6, 11080 Zemun, Serbia, Phone: +381 11 222 222, E-mail: petar.petrovic@gmail.com

4 Mirko Mirković, M.A., Assistant, University in Belgrade, Faculty of Forestry, Kneza Viseslava Street no. 1, 11000 Belgrade, Serbia, Phone: +381 64 33 33 333, E-mail: mirko.mirkovic@yahoo.com

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
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;
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Anđela Marković[2], Petar Petrović[3], Mirko Mirković[4]

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Key words: *navesti, maksimalno, pet, ključnih, reči.*

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2 Anđela Marković, Ph.D., Principal Research Fellow, Institute of Agricultural Economics, Volgina Street no. 15, 11060 Belgrade, Serbia, Phone: +381 11 444 444/int 112, E-mail: andjela.markovic@iep.bg.ac.rs

3 Petar Petrović, Ph.D., Full Professor, University of Belgrade, Faculty of Agriculture, Nemanjina Street no. 6, 11080 Zemun, Serbia, Phone: +381 11 222 222, E-mail: petar.petrovic@gmail.com

4 Mirko Mirković, M.A., Assistant, University in Belgrade, Faculty of Forestry, Kneza Viseslava Street no. 1, 11000 Belgrade, Serbia, Phone: +381 64 33 33 333, E-mail: mirko.mirkovic@yahoo.com

Introduction

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Tabele moraju biti formirane u tekstu rada, a ne preuzete u formi slika iz drugih materijala. Tabele unositi u sam tekst rada i numerisati ih prema redosledu njihovog pojavljivanja. Nazivi tabela moraju biti dati neposredno iznad tabele na koju se odnose. Koristite dole prikazani stil tokom njihovog formatiranja. Naslov tabela pisati sa razmakom 6 pt – iznad/before i 3pt – ispod/after, u fontu TNR, font size 11, ravnanje Justified. Tekst unutar tabela pisati fontom TNR, font size 9. Tekst u zaglavlju tabela boldirati. Izvor i potencijalne napomene pisati sa razmakom 3 pt ispod tabela (before). Izvore i napomene pisati u fontu TNR, font size 10,

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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)

Grafike, dendrograme, dijagrame, šeme i slike treba unositi u sam tekst rada (ne koristiti opciju Float over text) i numerisati ih prema redosledu njihovog pojavljivanja. Njihovi nazivi se moraju pozicionirati neposredno iznad grafika, dendrograma, dijagrama, šeme ili slike na koju se odnose. Kod navođenja naslova, izvora i napomena koristiti isti stil koji je predhodno prikazan za formiranje tabela. Tokom pisanja rada u originalnom tekstu treba markirati pozive na određeni grafik, dendrogram, dijagram, šemu ili sliku (*Graph 2*.). Svi grafici, dendrogrami, dijagrami, šeme i slike u radu se svojom veličinom moraju uklapati u zadati format strane, te moraju biti centralno postavljeni. Fotografije nisu poželjne u predmetnom radu, a ukoliko se one ne mogu izbeći molimo Vas da koristite optimalnu rezoluciju (preniska rezolucija dovodi do pikselacije i krzavih ivica, dok previsoka samo povećava veličinu fajla bez doprinosa čitljivosti rada).

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