EMPLOYMENT, EDUCATION AND ENTREPRENEURSHIP

16-18 October 2013 Belgrade Serbia

RURAL ENTREPRENEURSHIP: OPPORTUNITIES AND CHALLENGES



Faculty of Business Economics and Entrepreneurship (BEE) from Belgrade, Serbia
www.vspep.edu.rs

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jointly organize

The Second International Scientific Conference

EMPLOYMENT, EDUCATION AND ENTREPRENEURSHIP (EEE 2013)

Belgrade, Serbia, 16 – 18 October 2013

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CIP - Каталогизација у публикацији
Народна библиотека Србије, Београд

338.1(1-772)(082)
005.961:005.914.3(082)
330.34:502.131.1(082)
338.48(082)

INTERNATIONAL Conference Employment, Education and Enterpreneurship (2nd ; 2013 ; Belgrade)
Rural Entrepreneurship : opportunities and challenges / #[The #Second] International Conference Employment, Education and Enterpreneurship [EEE 2013], 16-18 October 2013 Belgrade Serbia ; [organizers Faculty of Business Economics and Entrepreneurship ... [et al.]. - Belgrade : Faculty of Business Economics and Enterpreneurship, 2013 (Beograd : Pegasus advertising). - 394 str. : graf. prikazi, tabele ; 25 cm

Tiraž 150. - Str. 9-10: Editor's note / Mirjana Radović-Marković. - Napomene i bibliografske reference uz tekst. - Bibliografija uz svaki rad.

ISBN 978-86-6069-093-9
ISBN 978-86-6069-092-2 (za izdavačku celinu)
1. Visoka škola za poslovnu ekonomiju i preduzetništvo (Beograd)
a) Предузетништво - Зборници b) Рурални развој - Зборници c) Привредни развој - Одрживи развој - Зборници d) Туризам - Зборници
COBISS.SR-ID 201890316

Printing 250 copies

EDITOR'S NOTE

Book, "RURAL ENTREPRENEURSHIP: OPPORTUNITIES AND CHALLENGES", divided into three separate parts:

I part. Development of rural entrepreneurship

The issues of rural entrepreneurship are increasingly significant in the countries of European Union, as a result of a great number of programs whose goal is to encourage the sustainable rural development. However, these issues are also current in other countries in which the rural development is connected to entrepreneurship more than ever. Several factors influence this, such as the traditional economic activities which are based upon the routine agricultural production and the activities based upon the usage of natural resources which have the goal of obtaining competitiveness. In order to accomplish this, it is necessary to change the agricultural development strategy. Therefore, the experts in this field are trying to find new sources for the development of its competitiveness. This is why, majority of researchers are introducing new concepts and possibilities, which can be used in creating new and sustainable economic development of rural environments.

New approaches can be found in the papers of this thematic monograph, since they deal with wide range of topics – financial aspects of rural development, application of modern technologies in rural entrepreneurship, as well as the opportunities of employment in the green economy.

II part. Rural tourism and ecotourism

This chapter deals with the issues of the rural and ecotourism, which are focused on the possibilities of using the natural environment and the culture of indigenous people.

Namely, the goal of the research is to show the significance of using the natural environment in rural areas without disturbing the natural balance.

III part. Production of genetically modified food and organic food

The problem of genetically modified (GM) food is the area where we cannot separate the issues of health, ethics and economy. They are more described as the elements of conflict between the commercial interests and the interests of consumers. Both parties take very strong positions in order to defend their interests. Therefore, it is completely understandable why the researchers are interested in this area and in giving the answers to these questions as neutral arbitrators, whose aspect is purely scientific. Besides the discussions about the issues that GM food raises and the health safety of its consumers, in this publication we also paid attention to the production of organic food.

While structuring this publication I tried to classify the papers according to their theme in order to achieve the coherence of the text. I hope that it will contribute to the better flow and the understanding of this matter, which can be a useful reading material to all those who are interested in rural entrepreneurship.

Special quality is given to this publication by the participation of the foreign authors from the region and other parts of the world, who enriched it by their contributions and gave it an international significance. Therefore I expect that this publication will find its place, and contribute to the literature on opportunities of rural entrepreneurship development, which is still not present enough in our country.

October, 2013.
Belgrade, Serbia

Academician Mirjana Radovic-Markovic

CONTENT

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PART ONE

RURAL ENTREPRENEURSHIP DEVELOPMENT

ANALYSIS OF RURAL ENTREPRENEURSHIP UNDER THE THEORETHICAL APPROACH OF RESOURCES AND CAPABILITIES: THE CASE OF A RURAL MICROBUSINESS IN MEXICO

José G. Vargas-Hernández[1]

Abstract: The aim of this paper is to analyze the case of a joint venture stage to determine the successes and failures to undertake this business, based on the theory of resources and skills of entrepreneurship and business. It is intended to answer the question, what were the successes and failures committed by entrepreneurs to run the business plan in this particular case?. The answers were found relating the situations described in the case with the theories of resources and skills and entrepreneurship. The analysis concludes that the empirical knowledge of entrepreneurs, in this case were not sufficient to direct the business to success, and that the lack of structured knowledge and adequate scientific support for this project strongly directed towards the non-permanence on the market.

Key words: Entrepreneurship, Women Entrepreneurs, PROMUSAG, Resources And Capabilities, Competitive Advantage

JEL classification: M13,O13,O18

UDC 005.961:005.914.3(72-772)

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INTRODUCTION

The Mexican government through the Ministry of Agrarian Reform supports rural entrepreneurship projects. One way is PROMUSAG (program for women in agriculture). This is a support program for rural women entrepreneurs, seeking their integration in the productive sector to earn income to help in the fight against poverty in this rural environment. The support consists of a sum of money to start up the business to undertake, which is repayable but it is considered at lost funds. In 2009, hundreds of projects have benefited from PROMUSAG, one of which has been analyzed for this report. This case is featuring nine women in the municipality of San Martin de Hidalgo, Jalisco. In that year, nine women was PROMUSAG order required for each project.

The team for this project consisted of women with little or no preparation in business, but the team had a leader with knowledge and skills acquired empirically that gave the project some routing to success. PROMUSAG central requirements requested to be eligible for funding to the various proposals were teams of nine members, all participants should be female, a project to undertake the business detailing emphasizing the distribution of grant money, it is sent to be developed by an engineer in the agricultural area and the last requirement was to have an area of land sufficient to carry out the purpose of the enterprise activity.

The venture was marked by the fall in leader's illness, which conditioned the project to a resounding lack of profitability, this, coupled with the lack of scientific preparation and support scientists generated a mismanagement of resources and capabilities that had the project, bringing this to its final termination in six months.

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

The enterprise is the basic and elemental production system of an economy, is an indivisible economic unit that is generated in the process of value creation that is the essence, purpose and function of the entire economic system (Alegre, Berne, & Galve , 1995). Strategic management is the scientific discipline that studies issues related to management of organizations and how are managed the functional areas of the firm. Just as the way the company has designed herself, to set their goals and values, and to relate to their environment.

According to Rumelt (1997), the purpose of the strategy is to provide partial support for the company to survive and be successful. Strategic management analyzes and determines the behavior of the target company specifically focuses on the determinants of competitive advantage and how it can be used to generate profits. In any organization or company, it is essential to have certain resources and capabilities that are the basis for the generation of competitive advantages, which are crucial to the achievement of the objectives of the firm, that is, to generate sales and more importantly, getting benefits.

The theory of resources and capabilities focuses on the analysis of assets owned and / or controlled by companies, as well as their differences, and the importance of this fact to explain the evolution of the results (Barney, 1991). From this approach, the company is considered as a unique set of resources and capabilities with a unique story (Castro & Lopez, 2006). In this perspective the strategy is defined as a constant search and maintenance benefits, which shows the economic approach model (Reynoso, 2005).

Achieving success in business depends on the performance of the tasks of management and internal coordination and the efficiency with which the company competes. The theory of resources and capabilities and the structural theory explain the existence of extraordinary benefits of this success, although the empirical analysis shows that the first explains even better.

The value of the company is more related to intangibles than tangibles aspects on which the valuation was done traditionally (Jiménez, 1999). In turn, intangible resources and capabilities are usually based on information and knowledge, so they have no limits in their ability to use (Guerras & Navas, 2007) and therefore it is necessary to manage knowledge, which means managing the processes of creation, development, dissemination and exploitation of knowledge to gain organizational capacity (Revilla , 1995). This makes every day more evident that the value of the company that is more related to intangible aspects than with tangible on which the valuation was done traditionally (Jiménez, 1999), and thus, with knowledge.

According to Arranz (2000), when the company discusses how to achieve competitive advantage based on resources and capabilities, should take into account that these attributes, to become forms of knowledge, are the result of merging the ideas of the hierarchy with the rest of the organization. Ferrer (1989) argues that this merger or organizational ethos contains a latent energy of known and unknown resources, used or unused, which tells the company how to progress and change, because it can build on this potential enhanced capabilities and routines. Also these attributes should have the following characteristics: be valuable, rare or idiosyncratic, imperfectly imitable and transferable, and have hardly substitutes (Barney, 1991; Peteraf, 1993 and Fernández, 1993).

Characteristics of valuable resources in the model of Barney (1991): Simplicity in use, shortages, difficult imitation, difficult to replace, analysis of managers. In addition there should be strategically equivalent resources, whose existence can be seen as an additional amount in offering a superior resource. Reynoso (2005) mentions three definitions of company capabilities:

1. The company's capabilities are the skills that are equally to integrate, build and reconfigure internal and external competencies of the company in order to react quickly to the changing environment.
2. Ability to use resources through organizational processes of the company, with the aim of obtaining a particular purpose.
3. High level routines (or collection of routines) that, together with resource flows, provides company management a set of decision options for producing significant results.

Efficiency is manifested in three complementary aspects: strategic capabilities allow the company to perform functional activities in a better way than their competitors, will dynamically adjust to the demands of the environment and foster the enterprise to obtain strategic resources (Collis, 1994) Teece, Pisano, & Shuen (1997) mention that the capabilities of the company are supported by organizational processes, i.e., organizational routines that take place in the organizations and they have three functions: integration-coordination as static concept, learning as a dynamic concept and reconfiguration. Implications of learning: skills involves both the organization and the individual, organizational knowledge generated by activities that are performed on a daily basis in the company, reflected in new patterns of activity, in routines or a new organizational logic.

Routines are patterns of interaction that represent successful solutions to particular problems. These behavioral patterns reside in behavioral groups where some simple routines can be represented by individual behaviors. One of the determinants of the strategic position of the company is the active control, which are plants and specialized equipment and, even more, the knowledge-based assets are difficult to trade and the complementary assets. These assets determine the market share and profitability at any given time. Asset capabilities relevant to the company can be classified in different ways. One is to use the following categories: technological, complementary, financial, associated to reputation with structural, institutional derivatives market structure and organizational boundaries (Teece, Pisano and Shuen, 1997).

The orthodox explanatory scheme has eliminated the entrepreneur of this system has had its recognition throughout economic history, making it the fulcrum (pivot) on which everything turns business (Bustamante, 2004). The Royal Academy of the Spanish Language (La Real Academia de la Lengua Española, 2012) gives the following definition of an entrepreneur: "That undertakes with resolution difficult and eventful actions".

Entrepreneurs are considered an important part of the process of job creation and stimulating factor of growth as they create new businesses, and thus, creating more wealth and prosperity in a country (Martín, 2009). As defined by Wennekers, Sander, Thurik, & Roy (1999) the entrepreneur is linked to the manifest ability and desire of individuals, either by themselves or by teams within or outside existing organizations, to create new economic opportunities, that is, new products, new forms of organization, new methods of production, etc. and introduce their ideas in the markets, facing uncertainty and other obstacles, by making decisions on location and in the form and use of resources and institutions.

Bilbao & Pachano (2002, p. 35), proposed the following definition of an entrepreneur:

"The successful entrepreneur is a person with a dream, a goal, a desire to create, to innovate, to capture a business opportunity, which is able to" see "HIS idea into finished form, which is not stopped by obstacles, so the persistence and tenacity are typical characteristics of HIS behavior. "

Malagón (2003) found that entrepreneurs meet the following characteristics:

- Constance.
- Sense or business opportunity.
- Knowledge.
- Personal responsibility.
- Leadership.

To develop entrepreneurship, according to Rojas (2003) is:

- Make things, no look for excuses or reasons to prove that you can do.
- Getting stronger every time he falls, never dig in his heels to find the reason for his failure.
- It is worthy, conscious, responsible for his actions.
- The creator of something, a home, a business.
- Understand that honest work, well there is not a need or sacrifice but a privilege and opportunity it gives us life.
- Dreaming of something, do it and discover how special and unique we are, are always positive.

THE PROMUSAG PROGRAM

The Secretary of Agrarian Reform (Secretaría de la Reforma Agraria, SRA) is the institution of the Federal Government that serves women and men who live and work in the rural communities and ejidos or community´s owned land across the country. The SRA provides legal certainty for the owners of the land and promote comprehensive rural development social justice. One of the ways the SRA supports rural development is through the promotion of entrepreneurial and productive projects in ejidos and communities through its programs Support for Productive Projects in Agrarian Nucleolus Fund (Fondo de Apoyo para Proyectos Productivos en Núcleos Agrarios, FAPPA) Program for Women in the Agricultural Sector (Programa de la Mujer en el Sector Agrario, PROMUSAG) and Young Rural Entrepreneur and Land Fund (Joven Emprendedor Rural y Fondo de Tierras, JERFT). PROMUSAG is aimed at women who are organized to develop a productive project that allows them to earn an income and thus help fight poverty in rural areas (H., L. V. 2012).

Within PROMUSAG program, projects can be installed in various areas, such as ecotourism, cattle fattening, rural stores, food production or various services. Women living in the countryside can access the program PROMUSAG women's groups of 3-6 members, over 18 years old, who inhabit agrarian and rural areas owners of community land. The financial support is of $30,000.00 per member provided it does not exceed the amount of $ 180,000.00. Women may be benefiting from the support of PROMUSAG until they have been supported in the past five fiscal years by himself or by the FAPPA PROMUSAG (Fund for supporting productive projects in agrarian).

METHOD

The methods employed are the analytical and descriptive. The first aims to analyze the case and identify failures and successes which led the company for the ensuing year and the descriptive method to detail the situations experienced by the venture.

CASE TO ANALYZE

The history and details of the case were provided by one of the women who undertook this business which in turn is a daughter of the initial principal leader of the enterprise. To gather the information, a personal informal interview was conducted on May 2012. What more motivated the business venture was the fact that the main entrepreneur has a great taste an innate ability for this type of business, her personal qualities and characteristics mostly agree with those of a successful entrepreneur. The main obstacle for this business venture was the lack of funding, which it once existed, the project was launched.

In 2009 the entrepreneurial principal, was blessed with a support of $ 100,000.00 in cash, with the advantageous feature called "sunk" to the implementation of a rural business in the town of San Martin de Hidalgo, Jalisco, which consisted of raising and fattening cattle. Support was received from the government body called Agrarian Reform Secretariat by rural support program to women entrepreneurs "PROMUSAG". PROMUSAG central requirements requested to be eligible for funding to the various proposals were teams of nine members, all participants should be female, a project to undertake the business detailing emphasizing the distribution of grant money, it is sent to an agricultural engineer to develop the agricultural area and the last requirement was to have an area of land sufficient to carry out the purpose of the enterprise activity.

The selection criteria for the formation of the task force were: being female is the PROMUSAG prerequisite required and indispensable, belonging to the family, time available for the project and interest in it. The skills and / or abilities that have the formed team made are the leadership, expertise in law, some livestock knowledge and empirical knowledge of small business management. The way in which it was given the work distribution between women entrepreneurs was by making meeting arrangements, where they defined their roles. The "lady" was the project leader, his daughter is bachelor in law and has the role of administrator of financial resources, and the other members would act as support staff, i.e. performing operational tasks of supplies purchase, cleaning stalls, feeding cattle and attention to situations that may arise in the production area.

The business plan prepared was paid before the monetary benefit was granted, it just detail issues relating to investment in equipment and production inputs such as instruments, equipment, food, young livestock, among others. Therefore, only was useful to structure the production plant and neither for business organization or healthy

finance to sustain within inside. The way to get to the end customer and more convenient for the type of business, existing resources and the region where they conducted the enterprise, was to sell the product at a much larger broker to sell the product it the final consumer. The project lasted only six months from commissioning to decommissioning, which corresponds to a period of fattening cattle.

APPLICATION OF THE THEORY TO THE CASE

It is necessary to analyze the internal aspects of the company to find the main successes and failures committed in undertaking this business, as the main reasons for the success of a company are brewing inside of it. A business venture begins with the idea and the desire of an individual undertaking, which must have certain qualities and characteristics. In this case, for the entrepreneur's main business was a success in life, as she is a person who has the characteristics and qualities of a successful entrepreneur, which are constancy, sense or business opportunity, knowledge, personal responsibility and leadership skills.

The monetary resource was, together with the decision of entrepreneurship, the main trigger of the business. This financial resource was needed for the purchase of instruments and appliances for conditioning the production plant. These acquired assets would be tangible resources with which the company would have to begin to build a road and build competitive advantage. Unfortunately these were not innovative or special characteristics that could lead the company to take advantage of some sort as cost leadership, differentiation or focus. It really was the most common for a company to take from this type of business.

The fact that there was no proper business plan to guide this enterprise in the formation of a solid organizational structure led to the existence of a variety of situations, which the organization was not in a proper way as there is no basis for internal coordination. That is, the organization did not developed intangible resources, neither knowledge nor skills, and also did not took advantage of the existing resources in good way, and there was no strategic plan to guide the company towards a goal through proper orientation of each of the actions to be undertaken. This due to the existing empirical knowledge and not theoretical basis exists. When it happened the disease of the entrepreneurship leader in the early stages, when the project did not even started to run was one of the situations for which the organization had no way to handle properly.

0. -The lack of evidence document-based to guide the integration of the existent resources and capabilities propelled an unsuitable an inadequate knowledge management tied to hand and feets to the organization in terms of the creation and development of competitive advantages. There were three reasons why the venture was short-lived for only six months:
1. - Failures in the leadership capability, the main leader fell ill soon after received financing and abandoned the project, not permanently but did not have enough contact to conduct business to success, being at the head of the

project the daughter of the main leader. Her daughter is Bachelor in Law as a profession, but without certainty in knowledge about business management and effective leadership skills. This created an atmosphere of des governance, which brought conflict among team members and discouragement to work and / or continue in the project.

2. - Lack of capacity in the area of procurement, equipment and supplies were bought at high prices, which were not covered by the investment project. This situation created a debt in addition to the already acquired through funding from PROMUSAG, turn in a few days unviable the business that was being undertaken, as the rate of return on investment would hardly be necessary for the project to survive in the short term.
3. - Lack of marketing capacity to market the product, at the time it was possible to have a finished product, feedlot cattle in optimum conditions, the price at which it was sold was low. However, it was not possible to recover the investment in the production stage, the money raised was used to pay debts owed to suppliers and creditors, leaving the project without resources and women without encouragement to continue. This happens due to a lack of capacity in the area of negotiation and the lack of market intelligence to analyze the situation and to anticipate future price to implement the actions that were relevant.

CONCLUSIONS AND RECOMMENDATIONS

Empirical knowledge of entrepreneurs, in this case, was not enough to route this business to success and the lack of structured knowledge and appropriate scientific support to this project strongly directed towards not stay in the market.

The recommendation for PROMUSAG is that it needs to call for a strategic plan as a requirement to be eligible for financial support.

To start a business the entrepreneurs should also count on empirical knowledge, a scientific basis, either by the project members, or by external consultants.

REFERENCES

[1] Alegre, L., Berné, C., & Galve, C. (1995). Fundamentos de la economía de la empresa: perspectiva funcional. Barcelona: Ariel Economía.

[2] Arranz, S. D. (2000). El potencial competitivo de la empresa: recursos, capacidades, rutinas y procesos de valor añadido. Investigaciones Europeas de Dirección y Economía de la Empresa, 71-86.

[3] Barney, J. B. (1991). Firms Resources and Sustained Competitive Advantage. Journal of Management, 99-120.

[4] Bilbao, A., & Pachano, S. (2002). Rasgos y actitudes de los emprendedores. Venezuela: Corporación Andina de Fomento.

[5] Bustamante, J. C. (2004). Crecimiento económico, nuevos negocios y actividad emprendedora. Visión gerencial, 3-15.

[6] Castro, G. M., & López, J. N. (2006). La importancia de la reputación empresarial en la obtención de ventajas competitivas sostenibles. Investigaciones Europeas de Dirección y Economía de la Empresa, 29-39.

[7] Collis, D. J. (1994). Research Note: How Valuable are Organizational Capabilities? Strategic Management Journal, 143-152.

[8] Fernández, Z. (1993). La organización interna como ventaja competitiva para la empresa. Papeles de Economía Español, 178-194.

[9] Ferrer, J. F. (1989). La Práctica del liderazgo transformacional. Barcelona: ESADE.

[10] Guerras, L. A., & Navas, J. E. (2007). La dirección estratégica de la empresa: Teoría y aplicaciones. Thomson-Civitas, 249-250.

[11] H., L. V. (Mayo de 2012). promusagg-fappa-proyectos-sra.blogspot. Recuperado el 5 de Junio de 2012, de promusagg-fappa-proyectos-sra.blogspot: www.promusagg-fappa-proyectos-sra.blogspot.mx

[12] Jiménez, A. (1999). Las Competencias y el Capital Intelectual: La manera de gestionar personas en la Era del Conocimiento. Boletín Club Intelec, 2-5.

[13] Malagón, F. A. (2003). ¿Cómo orientar el espíritu emprendedor hacia la creación de empresas? Revista escuela de administración de negocios, 72-81.

[14] Martín, M. A. (2009). El comportamiento de los emprendedores españoles en 2008. Boletín Económico del ICE. Información Comercial Española, 23-32.

[15] Peteraf, M. (1993). The cornerstones of competitive advantage. A resource-based view. Strategic Management, 179-191.

[16] Real Academia Española. (Junio de 2012). Real academia española. Recuperado el 5 de Junio de 2012, de Real academia española: www.rae.es

[17] Revilla, E. G. (1995). Factores Determinantes del Aprendizaje Organizativo. Un Modelo de Desarrollo de Productos. Valladolid: Club Gestión de Calidad de Valladolid.

[18] Reynoso, C. F. (2005). La teoría de recursos y capacidades, fundamentos microeconómicos. Guadalajara: Universidad de Guadalajara.

[19] Rojas, S. A. (2003). La actitud emprendedora. México: McGrawHill.

[20] Rumelt, R. P. (1997). Towards a Strategic Theory of the Firm. En N. J. Foss, Resources firms and strategies (págs. 131-145). New York: Oxford University.

[21] Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic Capabilities and Strategic Management. Strategic Management Journal, 509-533.

[22] Wennekers, Sander, Thurik, & Roy. (1999). Linking enterpreneurship and economic growth. Small Business Economics, 27-55.

CRITICAL REFLECTION ON RURAL ECONOMY OF SERBIA-SMALL FARMS PRECONDITION FOR THE DEVELOPMENT OF RURAL ENTREPRENEURSHIP

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Abstract: This paper is a case study that provides an integrated view of rural entrepreneurship and sets the agenda for future research in this area. Rural defines a territorially specific entrepreneurial milieu with distinct physical, social and economic characteristics. Location, natural resources and the landscape, social capital, ruralgovernance, business and social networks, as well as information and communication technologies, exert dynamic and complex influences on entrepreneurial activity in rural areas. Rural is a dynamic entrepreneurial resource that shapes both opportunities and constraints. Agriculture and agricultural extension service are facing numerous problems in present times when good solutions are not easy to find.Providing the agricultural extension service is an important foreign-policy instrument of a state, which stimulates the development of agricultural production. Agricultural extension service must serve as an effective link between holdings-producers, agricultural research and other sources of information. Agricultural extension agents must be aware of psychosocial and social aspects of group action and individual counseling.

Therefore, one of the priorities in the agricultural development of our country is raising the level of extensionoperations and the establishment of extension service based on modern principles.

Available socio-economic indicators define Serbia as a mostly agrarian country, in which the agricultural production is a developmental priority in the near future. From many factors of agricultural production, more active relations between the domestic producers and all lines of organic agriculture may affect an increase of the Republic's agricultural competitiveness, compared to close surroundings, as a more qualitative development of rural areas. Suitable climate and geographical conditions, unpolluted environment, exceptional biodiversity and constant demand growth for organically produced foods, definitely are on the side of this production organizers.

Key words: Rural Economy, Rural Development, Organic Production, Government, Virtual Village Serbia

JEL classification: O13, O18, Q13

UDC 005.961:005.914.3(497.11-772)

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INTRODUCTION

At the very beginning, it is important to say that this is a unique approach to the rural problem, which willgive an overview of the current state of the rural landscape on the one hand, and on the other through scientific research and case study on virtual village go through the mathematical-statistical indicators, ecological, psychological, philosophy and sociology indicators. The paper shall present some unpublished hypotheses, mathematical functions, ideas and proposals needed to boost the economy and entrepreneurship in the rural scenery. On the one hand, readers of this paper may conclude that it represents an overly idealistic definition of the rural landscape problems, and an overly radical approach to stating hypotheses on man and his position on the planet Earth. However, it should be emphasized that the authors allow the freedom to criticize and upgrade everything proposed here, while remaining clear in their belief in the necessity to change people's perceptions of their environment, as well as to reject some previously formulated ideas on this topic, because except for the fact that the ideas are still the same, nothing has changed.

It is a known fact which must not be rejected, that the Earth is a living organism, in which changes do not happen chaotically, even when they seem chaotic to us, but are always mutually related and life-giving, and therefore the same, although opposite (South Pole - North Pole, deserts - tropical rainforests, etc.), and even the smallest chaotic change in this living organism's cycle would mean the end of mankind. All the effects that can occur on the Earth, regardless of whether we understand them or not, make a uniform series of mutually conditioned effects, in which even a small chaotic change, disturbing the natural order in this cycle, would be an end for humanity, except in the case when the change itself is the essence of existence. So for example, while the man is alive, he performs the natural functions of thinking, working, eating, his heart is beating, he is breathing, etc., a man is performing all the functions needed for him to live. When a man dies, thinking ceases, there is no need for food, breathing oxygen, heart beating, etc., because there is no need for these functions, but then an opposite effect takes place, and again natural functions of decomposition, rotting, and such start happening. All of this is a natural cycle, constant in its essence, except when it is working in accordance with the previously stated example. In the very centre of the inconsistency that causes chaotic effects is the man.

Our planet is overpopulated and the number of people rises every year. The rise of the number of people has caused extermination of many animal species by people entering their habitats, while other animal species will be extinct in two to three years due to the discharging of CO2 in the atmosphere and the damaging of the ozone layer, melting of the glaciers and raising of the level of the ocean, water pollution by industrial waste, acid rains, etc. It must be emphasized that the Earth has already suffered all of these changes millions of years ago but it took millions of years for these changes to happen naturally, while the man has drastically speeded up these processes, and the Earth has no natural response to them. All of this is important and needs to be

understood, if we want to realize that all the resources that the Earth possesses are enjoyed by merely 10% of humanity, while on the other side 1/4 of the world's population lives on the verge of existence. Two million people die from hunger every year. On the other hand, the same ¼ of the population to some extent consumes the natural resources that cannot be renewed and pollutes the planet to a greater or lesser extent. The world as we know it will disappear in ten years, and the reason is not some metaphysical action or chaotic nature of this action, but the negative actions, and negative thinking of the mankind which has caused such negative effects on our planet that it is no longer able to recover, but only to heal.

However, we should not focus on the ¼ of the population, but on the whole human race, which differs from other living beings on this planet by having the intellect and the ability to reason, and yet is the only species that lives in disharmony with the planet. Here lies the essence of everything previously mentioned about the topic of this paper and about what needs to be done to fasten the economic development of rural areas, and help provide healthy living, healthy food and drinking water, and how all that can be made possible.

Perhaps the best indicator of the disparity between man and planet Earth is Serbia. The most important resource and market area of Serbia that covers 80% of its territory is the village, and it houses around 45% of Serbia's population. Serbia, once a country of peasants, could soon lose the village because of 4,600 villages there are now in the country, one in four is now facing the verge of extinction. In fact, 1961 villages are completely deserted, and in 200 villages there are no residents under the age of 20. Recent studies indicate that in a decade and a half another 1,200 villages will disappear from the map of our country. According to research, in half a century, from 1950 to the year of 2000, over eight million people migrated from rural to urban areas of the country. In the rest of the world, such a process takes 120 to 150 years (Bailey & Clayton, 2002). In villages in Serbia, at this moment, lives 45 percent of the population, and if a country is planning to live off agriculture there should be around 70 percent of the population in these areas. The disappearance of the population in the villages of Serbia will lead to changes in biodiversity in a large area, especially in the east and south-east of Serbia. The once cultivated and well-kept lands are already partially overtaken by the wilderness, and the old abandoned villages will go back to the period of 200 years ago, when these were villages in the making and the people cleared forests to build houses. Unfortunately, many of these villages now have smaller population than they had in the 19 century. This means that the rural environment in the 21st century is going back to its beginnings. According to the 2002 census, there were nearly 50,000 homes in the villages. If we add 145,000 houses enumerated then but classified as temporarily unoccupied, it sums up to the fact that the Serbian villages now have at least 200,000 housing units which are not inhabited. There are around 40,000 abandoned farms and gardens, and most of them in southern Serbia, in the Kuršumlija region, where there are only 10 inhabitants per square kilometer. While in Europe a slight trend of people returning to the country can be noticed, in Serbia, it seems everybody prefer to live in the city. So now almost one third of the population of Serbia lives in Belgrade **(Barker& Debi, 2002).**

Results of social exclusion in rural areas of Serbia show that over 38 percent of rural households in the country are now facing poverty, 37.8 percent is not able to meet even the basic human needs, whereas 4.8 percent of the population faces deprivation and poor living conditions. The worst situation is in the villages of southeastern Serbia, where as much as 43.1 percent of the population lives in poverty, while in Vojvodina 22.1 percent is facing this problem. We should not forget that in the majority of Serbian villages electricity, telephone connections, sewer, internet, cable TV, and even asphalt still considered luxuries **(**Bridger et al**,** 1990**).** Schools are being closed due to the economic unprofitability, and those that remain are half empty. Ironically, the most vivid images of these regions are still used in promotional materials that advertise Serbian natural beauties. However, those interested in living in beautiful but remote landscapes are very few. The state has forgotten the village, and left it to itself, which has led to the fact that the Serbian villages today have an average of 89 active households, with three family members and five acres of arable land overgrown with weeds. This fact shall be the focal point of the rest of this study **(**Daly**&** Herman E, 1990**).**

RESEARCH AND METHODS

FUNCTION OF THE NATURAL DISTRIBUTION OF LAND

The changing perception of people towards their environment is one of the most important factors that will affect the future life on Earth. The man's destructive treatment of nature has led to global pollution of our planet, and many other changes need to happen so that the future generations can continue their life on this planet. It takes a lot more than empty repetition of the word ecology over the years, while every year we witness worse destruction of the Earth **(**Epp, Roger, 2002**).** One of the things that is noticeable is unequal distribution of land, meaning rapport between the land owned by certain households in comparison to others. So, there are households in Serbian villages which own 20000 hectares, and there are those which own 1 hectare or less. Such uneven distribution of land does not create equal market participants, but unfair competition at the market. Here we come to a mathematical function which we call natural distribution of land. Natural distribution in its essence follows a unique pattern that starts from simple systems and moves towards more complex forms, but has equality in its center. To make this easier to understand we shall use the fact mentioned in the introductory part that in the villages of Serbia there is now an average of 89 active households, with three family members and five acres of arable land. Here we notice the pattern of numbers 3, 5 and 89, which represent the well-known Fibonacci series5

[5] *Fibonacci series is a mathematical sequence which can be observed in many physical, chemical, biological and natural phenomena. It represents a series of numbers in which each subsequent number is the sum of the previous two. Indexing of the members of this series starts from zero (0,1,1,2,3,5,8,13,21,34,55,89,144 ...).*

From this sequence we can draw the function of natural distribution of land:

$$Fxa = \frac{H \cdot h}{H \cdot p} = \frac{89 \cdot 5}{89 \cdot 3} = \frac{445}{267} = 1{,}6\ Gcp$$

Fxa-natural distribution of lands

Legend:

H – household

h- hectare

p – people

Gcp- Golden cut per man

Like we have said, there are patterns in nature and nothing is chaotically organized, and it is also known that the value of 1.6 in Fibonacci series is the golden cut, calculated by dividing one number to its predecessor, in this case 5 / 3. In order to show how important this cut is and how everything on earth follows irrefutable laws, we will mention that the size of a DNA gene is 1.6 mm, the distance between joints in mammals is 1.6 cm, breathing expands the lungs by 1.6 cm, the distance between the left and the right lung is 1.6 cm, and so on. Therefore, the ideal area of land in the villages of Serbia that should be possessed by one man is 1.6 hectare. If we go further, in observing a man who takes up 1.6 hectare of the total area of the land and multiply these portions of land by the number of people:

$$1{,}6h^2,\ 1{,}6h^3,\ 1{,}6h^4 \ldots 1{,}6h^x$$

It is easily seen that there exists a fractal series starting from the simple and progressing to the more complex sequence, but it stays the same regardless of the number of times it is multiplied. A fractal is a geometric figure that can be broken down into smaller parts so that each of them is an approximately downscaled copy of the whole, meaning that such a figure is self-similar. Fractals enable us to see both the whole unit and its equity in one sample.

From all this we can conclude that Serbia currently has the ideal number of active households, with the ideal average number of household members, as well as an ideal area of arable land. The reader may say that this is too perfect, and a coincidence, but this pattern can be applied to any other village in any other country, and even to cities with minor changes, and is the root of further research because the nature works by certain patterns that must be noted, and used in the

best way possible. Also, this does not represent a hypothetical mathematical function without a goal, but a validity of the natural distribution of land in the Serbian villages, so it could function in the best way possible, meaning that equal households could have equal properties, and therefore a healthy competition to their products on the market. The following part of the paper shall offer proof for the aforementioned.

THE ROLE OF THE STATE

Still, equal natural distribution of land and healthy competition in villages are not the main carriers of economic development and entrepreneurship in Serbian villages. The main carrier is the state, which, as we have said, has forgotten about the village. Besides talking about supporting agriculture as the main branch of economic progress of Serbia for past two decades, nothing has been done. The state has even contributed to the abandoning of many villages, there was a migration of rural population to the cities, farmlands are overgrown with weeds, and because of the destroyed industry of the cities there are no jobs for the citizens, let alone for the newly-arrived peasants, and thus a chaotic situation is created and it is not sustainable.

In Serbia, as much as 900,000 acres of land is left fallow every year, and last year the lease of this land brought only 1.5 billion RSD to the budget. On the other hand, the calculation of the Serbian Chamber shows that if wheat had been sowed in this area, 3.5 million tons of wheat could have been harvested in one year and as much as 91 billion earned. The current strategy of Serbian agriculture is based on the principles that the government has been imposing on farmers since World War II, the enlargement of farms and the principles of industrial agriculture **(**Lobao, Linda M., 2000**).** It seems that our, Serbian experts are not familiar with the conditions under which farmers work in the developed countries, nor with the states of agricultural land in these countries, and continue to insist only on the maximizing of property. In doing so, they use incorrect and incomplete data from around the world, which can lead to further damaging of the Serbian agriculture. In Serbia, industrial agriculture is still called *Modern agricultural practices* - even if such measures are no longer *modern*. Industrial agriculture is characterized by monocultures (large areas planted by one and the same crop), a small variety of crops, relying on chemicals and other inputs, and the separation of plant and animal agriculture. This agriculture asks for the enlargements of lands and it depends on high state subsidies to farmers, but is unhealthy for the environment, the climate, our bodies and the rural economy **(**Nassauer, Joan Iverson, 2002**).**

Farm size and yield per hectare are not the only criteria for successful agriculture. Farm profitability should be set in the center of discussion of Serbian agriculture rather than its size and yield per hectare. During the transition in Serbia large farms came into possession of silos, processing facilities and shops, and they can now make up for the possible loss in primary production through processing

and selling foods. Both large estates and the small ones which depend on crop production and small domestic subsidies cannot compete with highly subsidized European agriculture. For greater profitability of small farms in our country, the key is to connect plant and animal production, and increased profit from crop production by breeding livestock, together with subsidies same as in the countries from which meat and other foods are imported in the existing duty-free regime.

Lot more than the increase of property or raising the yield per hectare is needed to improve the situation in Serbian agriculture. When we talk about increasing the yield per hectare, instead of increasing earnings through increased production of high-profit vegetable crops and meat, our experts seem to be unaware of the consequences of over-intensification of agriculture. The insistence on increasing the agricultural yields has led to considerable soil degradation in Europe and even more in the U.S.A., which is a fact our experts never mention. They refer to the high yields of European agriculture but apparently have no information about the consequences of these successes. The success of the European agriculture stands on high subsidies allowed to their farmers and the state investments in agriculture which - measured in money per acre, including the total arable land and total investment, at least four times greater than in Serbia. Furthermore, in the old part of EU farmers generally own or co-own silos and mills, cold storages, dairies and slaughterhouses - which significantly increases their income earned from primary production.

From all this we can easily conclude that the size of land of one farm is only a (small) part of the formula for achieving higher productivity of domestic agriculture. Everywhere in the world, under appropriate conditions, the productivity of small farms per hectare is higher than the productivity per hectare of large farms. In addition, small farms use less oil and gas per unit of product, exploit the land less and feed it more, and pollute the environment to a lesser degree **(**Kimbrell Andy ed.,2002**).**

To achieve the European level of efficiency, national agriculture should introduce other measures accepted by European farmers, and these do not come down to mere increasing the property. The way to increase the productivity of agriculture in Serbia can only go through increasing the profitability of small farms and their protection, and can be achieved by the following:

- Measures to prevent dumping, i.e. to prevent duty-free imports of foreign agricultural products and food at prices lower than production costs;
- Better interlinking of crop and livestock production;
- Better interlinking of primary production, processing and trade, i.e. the ownership participation in the primary production in the entire food chain;
- Increased subsidies to primary agricultural production;
- Postponement of the implementation of the Agreement on Cooperation and Partnership (PCA) signed with the EU, according to which foreigners shall be allowed to buy agricultural land in Serbia as of 2014.

Agricultural Development Strategy of Serbia can only be successful if it is adjusted to national capabilities and resources, and therefore should not be built on a formula applied by the rich countries. Enlargement of possessions requires a substantial increase in subsidies in order to reach the European competition, and we simply do not have enough resources for that. Neglecting small farmers and small-scale farms in Serbia, instead of helping to them, will be nothing but preparation for the sell-out of the nation's arable land to foreigners.

The state ought to help the farmer continuously and solve problems systematically, and not erratically change the regulations and thus "extinguish fire." No regulation has ever brought long-term prosperity, laws need to be made. A long-term national strategy is what we need – a national rural development plan with clearly defined goals and measures for their implementation. A declaration of rural and agricultural development is needed and it can be the basis for the adoption of a national strategy for rural development. This would clear up a way for agrarian and social reforms and enable rational use of natural resources. In order to achieve this, we need three sets of practical measures which include technical cultivation of arable land through land consolidation and reclamation, voluntary consolidation of properties, but also cultivation of waterways and forming of farmers associations. Also, production of finished agricultural products needs to be encouraged, new technologies introduced into production, and rural budgets created at the local level, but also a Diaspora's development bank should be founded so its funds could be directed to rural development.

RESULTS AND DISCUSSION

Revitalization and survival of Serbian villages primarily depend on the modernization of agriculture that has never actually happened in Serbia and, consequently, on the modernization of rural areas as a framework for this economic activity. Serbia needs a rationalized settlements' network with a clear definition, urban and spatial, which can be a village, a small town, a small or a large city, or even a metropolitan area, where most of the population would live in urbanized units adapted to meet the modern human needs, and where the demographically vital part of the population could practice modern, up-to-date agriculture. Therefore, the state should first enable the allocation of subsidized loans for the purchase of old buildings (these loans are now an option only for buying newly-built homes), and once the deprived family is settled, these people can start a production that would later enable them to return a small loan for the purchase of rural property. Also, production programs tailored to the natural conditions and traditions of manufacturers need to be designed, necessary funding must be found, primarily in local revenues, and pilot projects in agricultural cooperatives introducing new models of cooperative-assemblies should be made because farmers in Serbia today are very poorly organized. People living in rural areas should have living conditions similar to those in the city and available

kindergartens, schools, health care, culture, fashion, entertainment, sports, etc. This can be achieved by the predictability of agricultural policy and the fact that people will be able to plan what they will do and how much they will earn in the next couple of years. Only then will a young man be interested in staying there. The government should help young people who have the machinery enlarge their farms by purchasing land or taking perpetual lease on the land, so they can work. At this point, these young, small farmers are not able to compete with the large producers in getting the arable land. If this were to change, it would lead to an increased production and competition in the country, increased processing of agricultural products by applying new technologies, and increased birth rate and a guarantee that the young will remain living in the villages and preserve natural resources.

When it comes to production, emphasis should be placed on the production of organic agricultural products under controlled conditions. Organic production of agricultural products in small farms will soon represent one of the four main sectors for creation of millions of new jobs in the 21st century.

Small farms are more labor intensive. With appropriate technical and infrastructural support, yields from small farms that use crop rotation, manure, natural pesticides and other sustainable methods, can become equal to larger farms that are often more harmful to the environment. In addition to that, it is estimated that organic farming employs one third more workers than conventional farming.

Table 1. Major agricultural products in Serbia

PRODUCTION OF MAJOR AGRICULTURAL PRODUCTS			
PRODUCT	YEAR	YEAR	YEAR
Wheat	1.630.404	2.076.237	1.910.914
Corn	7.207.191	6.479.564	3.532.602
Sunflower	378.409	432.020	366.020
Sugar beet	3.324.847	2.821.919	2.328.325
Tobacco	10.440	10.437	8.521
Raspberries	83.870	89.602	70.320
Strawberries	32.973	36.161	26.507
Sour cherries	66.224	90.596	74.656
Plums	426.846	581.874	391.485
Grapes	330.070	324.919	263.419
(in tons)			
Wine	150.022	64.404	123.290
Milk	1.756.756	1.765.024	1.585.427
(thousands of litres)			

Source:Statistical Office of Republic of Serbia

Only the land of high fertility and quality has the potential to maintain productive capacity, with minimal adverse impacts on the environment. This land is characterized by high content of available nutrients, good aeration, water

infiltration and retention, stable structure and high biological activity. One of the conditions for the establishment of organic production is unpolluted soil in which content of harmful substances is below the maximum allowed.

The fertility of a soil is determined by its composition and properties - morphological, physical, chemical and biological. Seen from the aspect of the land's suitability for use in agriculture, the soil's potential in the Republic of Serbia is classified into eight classes, where the first four classes are the better land, and the classes 5 - 8 include areas mostly unsuitable for cultivation. Seen for the Republic as a whole, the ratio of land suitable and unsuitable for treatment is almost identical. Restrictions on the conduct of intensive agriculture are the least strict in Vojvodina, and the strongest in Kosovo and Metohija. The latter area, similarly to the greater part of central Serbia, is characterized by big differences in the natural fertility of soil in narrow geomorphologic units.

In general terms, with approximately 2.1 million hectares of land, of I and II quality class, representing 57% of total arable, and 44% of arable land, significant areas in Serbia offer soil types on which with appropriate agricultural technology, good choice of varieties and hybrids, etc., high, stable and profitable yields of various crops can be achieved.

Most of the rural population depends on agriculture and despite a slight economic growth in the recent years, the rural communities still earn less than the urban population. The economic policy for the rural areas should support businesses and initiatives which help a particular rural community to take advantage of its resources and potentials in a form of financial stimulation or education, or both.

People living in the rural areas must be provided an access to the basic infrastructure to ensure a high quality of life as well as an easy access to information and to the "outer" world. Good infrastructure is also the key for economic development and in-migration both of which are crucial for preservation of the rural areas.

Despite the increased interest in rural housing in the recent years, the access to a home in the rural areas remains highly inaccessible due to highly restrictive building policy. Limited rural sprawl helps preserve the rural environment and character but at the same time, it often hinders development of the rural communities and forces young people to move to urban and suburban areas. In order to keep the rural areas alive in their traditional form, the building policy should be reviewed because the problem with accommodation in the countryside cannot be solved without a larger number of newly built homes. In addition, the current situation poses a risk of dramatic change of social structure of the rural communities as homes in the rural areas remain mostly accessible only to the wealthy.

The rural communities should be provided an equal access to quality education, health care and services as the urban population is.

The countryside, unfortunately, is not what it used to be and is now facing a number of environmental challenges. To make things worse, the environmental issues in the rural areas are closely related to the rural economy which is why they

are especially challenging to solve. Intensive agriculture involving the use of enormous amounts of artificial fertilizers polluting the groundwater and pesticides which are severely toxic to the environment and human health provides a living to the majority of members of the rural communities. Organic farming and sustainable agriculture eliminate the majority of environmental issues related to agriculture; however, they do not bring an instant result which poses the greatest obstacle for most rural communities. Farmers who make the transition from conventional to organic agriculture should therefore be provided financial support during the transition period.

Most rural communities have important historical and natural heritage which is of major importance for the local and sometimes also for national history and biodiversity/geodiversity. In order to protect the historical and natural heritage, the rural communities should be provided assistance in expertise and funds.

Urbanization and suburban sprawl, industrialization, intensive agriculture and globalization have dramatically changed the rural areas in both their appearance and character. Conservation of the rural areas is of national importance for several reasons which are why it is crucial to conserve the areas which managed to retain their distinct character. In addition, the areas that have not yet been transformed completely should be stimulated to reverse the process which eventually leads to disappearance of the rural areas and communities. Rural regeneration, however, is not about reversing the process of modernization and progress in the countryside. It is about preservation and revival of natural and historical heritage and stimulating the rural economy at the same time.

Protection of the rural areas translates into protection of the landscape which went through a dramatic transformation over the last few decades. Rural regeneration does not automatically guarantee preservation of the landscape because the use of the land for crop production and pastures has considerably changed the landscape, while the conventional agricultural methods pose a serious threat to the environment. Rural regeneration therefore requires a complex approach which must stimulate the rural economy and help protect the environment at the same time. An excellent example are projects which provide education and training on organic farming which helps protect the environment without effecting the rural economy.

Conservation of the rural areas is also of major importance for conservation of diversity when it comes to both the country's social and natural diversity. Rural communities are very different from the urban ones, but they are of vital importance for the country's overall development including the national economy. Adoption of environmentally-friendly agricultural methods and businesses, on the other hand, helps preserve biodiversity and healthy environment which dramatically improves the quality of life of the rural communities both directly and indirectly. Clean and healthy environment which thrives with life provides a major asset for the so-called countryside tourism which can be a major contributor to the rural economy and provide the urban population a getaway from the city buzz and an opportunity to enjoy tranquility and beauty of unspoiled nature.

Many rural areas also have a rich historical heritage of national importance which is at risk of being lost forever. Fortunately, the most significant buildings and areas are protected from undesirable alterations by the Government Agencies and by a series of laws. In addition to being of major national historical and cultural importance, the designated areas and buildings also play an important role in the community's identity and often also in rural economy by developing tourism.

Lastly, conservation of the rural areas is also of vital importance due to food production. The UK imports nearly 50% of all its food requirements which raises serious concerns about the effects of a potential disruption of food imports. So if the country wants to reduce its dependence on food imports, it must not only conserve the rural areas but regenerate the countryside completely. This, however, requires a series of measures which must be adjusted to each rural area individually as each rural community faces specific challenges.

Preservation of nature in the rural areas has not received enough attention in the past. Traditionally, the rural areas and unspoiled nature were believed to go hand in hand but in reality, the nature was and still is seriously threatened by the conventional agricultural methods.

Agriculture is the very most important source of survival in the rural areas. At the moment this paper is written, the UK farmers do not produce enough food to feed the entire population which made the country dependent on food imports. This raises concerns about the country's food security and increases the pressure on the rural communities to produce more food which, however, seriously threatens the efforts to preserve nature. The environment in the rural areas has been under increased pressure for most of the last 100 years and the intensification of food production with the use of conventional agricultural methods poses a risk of irreparable damage to the environment without solving the food security issue.

Food production rates increased dramatically since the mid-20th century thanks to mechanization, artificial fertilizers and chemical pesticides. However, chemical fertilizers and pesticides are among the most serious environmental polluters and directly threaten the nature and human health due to their toxicity. Agricultural mechanization has increased farm output and reduced the physical labor at the same time, however, it made the farms dangerously dependant on fossil fuels which could cause serious problems in the future considering that the fossil fuels are not available in limitless amounts.

Reducing the country's dependence on food imports and preserving nature in the rural areas at the same time is not an easy task as the same measures that increase food production increase damage to the environment. The best solution for preservation of nature in the rural areas is organic farming which reduces the pressure on the environment by strict avoidance of toxic chemicals and stimulation of biodiversity as an integral part of organic farming methods.

Organic farming also provides a stable income to the rural communities as it eliminates the expenses for chemical fertilizers and pesticides, while organic food reaches higher prices on the market. However, the yields are typically slightly lower than in conventional agriculture which means that it does not solve the food security issue although the yield of some organic farms is comparable to that of the

conventional ones. In addition, organic farming typically requires more physical labor which means that it increases employment opportunities in the rural areas.

Other sustainable agricultural methods such as perm culture also offer a potential solution when it comes to both food security and preservation of nature in the rural areas. The transition from conventional to sustainable agriculture, however, is taking place extremely slowly also due to the fact that sustainable agricultural methods radically contradict the conventional ones and it takes a few years to complete the transition. This poses a risk of permanent damage to the environment which is why it is necessary to assist the rural communities in their transition to sustainable agriculture in both financial and technical aspects.

Rural communities have a unique character which makes them very special. They have a very strong sense of community and tend to have much closer relationships than the urban population. Their distinct character increases the country's diversity and enriches the culture. Protection of the rural character is therefore just as important as the protection of rural areas themselves.

The rural character has been taken for granted for too long which has resulted in dramatic changes within the rural communities and their character. One of the greatest challenges for conservation of the rural areas and their character is the housing problem which has become especially obvious in the recent years. In 2010, more than 90 percent of the UK's population lived in the urban areas and the percentage of the urban population is estimated to continue to increase over the years to come. However, this is not so much related to flight from the rural areas as it is to housing difficulties in the countryside.

With the aim to preserve rural areas, highly restrictive building regulations were adopted. They have achieved their main goal – prevention of urban and suburban sprawl into the rural areas but they have also resulted in the rise of prices of homes in the rural areas. As a result, homes in the countryside became unaffordable for the majority of population which in turn poses a risk of permanent change of the rural character. To protect the traditional rural character, the building authorities will need to reconsider the restrictions concerning new homes in the rural areas because the housing will not become more affordable as long as the offer of new homes does not increase.

Economic development of rural areas is another factor that can both help preserve and change the rural character. Whereas the traditional economic activities enhance the rural character, factories and highly competitive economic environment dramatically change the character of the rural communities. To conserve the rural areas and their distinct character, the governmental and non-governmental programmers should therefore stimulate the traditional rural economy and businesses, and agriculture in the first place.

Although rural areas can hardly exist without the agricultural sector, the latter raises more issues than it resolves. Intensive agriculture that became the predominant agricultural method in the 21st century has seriously altered the rural areas and made farmers dependant on chemicals which are seriously harming the environment as well as human health. Many farmers gave up the conventional

agricultural methods for the organic ones, but many more are hesitating as organic food production requires radical changes in the adopted agricultural methods. Since conventional agriculture is unsustainable in the long term, farmers should be provided assistance in education, training and funds to adopt sustainable agriculture which is the only way to conserve both rural areas and rural character.

The countryside and rural areas used to be a synonym for clean air and intact nature. Unfortunately, many rural areas have become unhealthier to live in than large cities despite all the traffic and industry. Conventional agriculture is posing one of the greatest challenges to rural conservation and regeneration efforts because it involves the use of highly toxic chemicals to control the pests and increase food production. These may provide a decent income to the farmers but they have a devastating effect on human health as well as the environment.

Rural areas can be preserved and revived only with stable local economy which can seem to make rural regeneration and preservation of the nature incompatible. However, the task is not as difficult as it may appear. The solution is in organic farming which has proven to be an excellent alternative to conventional agricultural methods. Organic farming is based on strict avoidance of chemicals for animal and crop production which means that it is not harmful to human health or the environment. On the contrary, it helps preserve nature and increase biodiversity because it is based on the use of wildlife species for pest control and increasing the yields. These may be slightly lower than in conventional farming, however, most organic farmers make larger income because they do not need to buy artificial fertilizers and pesticides as well as due to higher prices of organic food. Organic farming does not necessarily involve more physical labor but it requires good education and takes a few years to yield results as it heavily depends on the natural balance which cannot be created within a single year.

Great potentials for rural economy lie in countryside tourism. Sadly but true, most kids living in urban and suburban areas have never in their lives seen farm animals. Trips to the countryside to experience the rural life have therefore become increasingly common. Most popular destinations are animal farms, wineries, family-run cheese factories, and “pick-your-own” fruits and vegetable farms, and many people come to the countryside to find peace and enjoy the nature. Increased tourism also provides a major asset for small businesses such as restaurants, family-run bed & breakfasts, horse riding facilities, etc. as well as for traditional craftspeople that otherwise often face difficulties when trying to sell their products and may not be able to make a living from crafting alone.

In addition to farmers and small business owners, rural areas are also ideal for people who work from home as well as for Internet-based business owners whose success does not depend on an attractive office/shop location. They increase the area’s income without affecting the environment in any way but it is crucial to ensure the entire necessary communications infrastructure even in the most remote areas and of course, affordable housing. They may not be typical members of the rural communities, but they do increase diversity and can stimulate local economy in many ways. People who are not typical inhabitants of rural areas can also help rural

communities deal with many issues by providing a different point of view of the challenges they are facing.

In this section we have shown and proved by detailed scientific approach that rural economy in Serbia has great potential, which, unfortunately, remains unexploited due to wrong policies and wrong thinking. However, we should not yet reject the idea that we are late for the development of rural areas. At this point, the essential factor is the state and their readinesses to support this type of economy, which will in long term bring it back great benefit.

Based on the case study, which will be called "virtual village", in the rest of this paper we shall try and show how everything presented earlier should work in practice.

VIRTUAL VILLAGE

For the model of virtual village we shall use the fact that Serbia has an average of 89 active households with three family members and an average of five acres of arable land, and this is the case in the majority of villages in Serbia, which is why the authors did not choose a specific village for this case study. We shall then add 1/3 of the area covered by roads and infrastructure the area described. If we then change our perception, and we imagine that the land is a man's skeleton, and the roads, infrastructure and residents circulating the village are a man's vascular system, blood circulation and veins, we will get a clear insight into how these roads and infrastructure should be built. As we know, the human vascular system must work perfectly, and the blood must flow equally through all parts of the body because otherwise it may cause a variety of diseases and in this sense infrastructure system is the same, a system of roads and fields across which the population moves must be perfect. Fields must not be crossed by roads, must not be curved, housing and other facilities should not be built chaotically, roads need to be asphalted, etc.

The state has played the key role in the creation of a virtual village. It has invested in the infrastructure, restored the kindergartens, schools, cinemas, and theaters. The people now have the ability to do their field work and follow trends because there are boutiques, they can enjoy diverse cultural program as there are theaters and cinemas. The young can do sports in the newly-opened village sport clubs and enjoy the nightlife in the newly-opened clubs.

For this investment to pay back, the population is engaged in growing organic products, under strictly controlled conditions. In the village, there is a laboratory that constantly monitors the quality of the products. The villagers are obliged to pay the investment back in the next 20 years. 70% of their products will be given away to the state without any financial compensation, as an annuity, but each farmer can use the remaining 30% of his products in the way he thinks best. The logic of this agreement says that no sooner than in two decades the residents of this virtual village will begin to enjoy 100% of their product, however, the current 30% is sufficient for their needs and sales, and the long-term focus is on future generations.

Since virtual village produces organic foods, it therefore protects the environment and healthy living of its residents. For this reason, it is supplied with electricity from renewable energy sources. The average household spends an average of 600kv monthly, and since we said that our virtual village also has other facilities, the average consumption in the virtual village per building would be 1500kv per month, which makes up a total of 133500kv per month. In the virtual village, electricity is generated from three different sources because it is well known that with renewable energy it is not desirable to have a single source of supply. Virtual Village has installed solar panels of 2 kV for individual needs, a mini-hydro power plant producing 200 kV for the village, and a small windmill of 200kV. Since there is a surplus of electricity, the virtual village can distribute its electricity surplus into the power distribution system for a financial compensation. For the purposes of thermal energy virtual village uses methane, which is distributed through the networked system of tubes, and obtained from feces of people and the domestic animals in their possession.

The school system is organized so that the future generations learn the skills and scientific techniques that will prepare them for new achievements in agricultural production. There is a scholarship fund for the best students who are sent to high schools and colleges, on condition they return to the village and stay there for the next ten years. The Fund is financed by all the villagers. Also, the same fund is organized so that it can be used to help a villager in difficulty, to purchase modern machinery, new technologies, or to invest in new ideas and investments.

The residents of virtual village are equal competitors in the market. All the villagers have the same amount of land on which they produce organic crops. Residents compete for the market by increasing the quality of their products and thus earn higher incomes that they continue to invest in new technologies or modern machinery, improving quality, buying property in another village in order to expand their activities, etc.

Recognizing the need of the modern man to escape from the hubbub of the city at least for a weekend, the inhabitants of the virtual village made a clear strategy defining the ways to motivate the people by their way of life, cultural and artistic programs, ecologically healthy nature, sights, history and folklore. The total revenue of rural tourism, is invested in the village development fund, or invested in a quicker paying back the funds the state has invested in the construction of the village.

Clear agrarian laws are implemented by local governments and these governments monitor their implementation on the ground. Every local not cultivating his land shall be punished and his land taken away from him and distributed to other residents. Agricultural areas cannot be sold to foreigners under the pretext of the entering of direct foreign investments. Direct foreign investment bring dirty technology to the village, exhaust the natural resources of the village, exploit the labor force, etc. also, once they lose interest to participate, they leave the ruined village. Recognizing these hazards, the government can take care of this small area of the country, allowing rental to interested foreign investors, who would invest in the country, improve rural life, constantly modernize it, because of their interest in the virtual village, which offers healthy food, fertile land, cheap labor, etc.

Setting the virtual village as an organization, the townspeople take inputs (money, materials, energy, and labor) transform them through organic product and return as outputs in the region. The virtual village as the organization strives to continuously adapt to external factors (global, political, economic, legal, social, technological, etc ...) that influence and shape its existence. To accomplish its goal of placing organic products on the market, new investments, modernization of machinery, building better relationships of villagers and their suppliers and customers are needed. Taking into account the external influences, the virtual village attracts internal and external stakeholders. Residents of the virtual village take care of the profits, objectives, managing farms, wages for hired labor, securing their jobs. On the other hand, residents take care of the quality and the price of the product. Residents perform their duties on time. The state and local residents provide further support for community development and environmental protection of virtual villages.

CONCLUSION

Realizing that the Earth is a sphere in which nature functions as a seamless organizational entity, with its own order, and our virtual village as a small organizational sphere that functions in this larger sphere as part of a larger whole, we realize that the natural distribution of land into smaller farms creates ideal conditions for the creation of economic development in rural areas. Changing perceptions in relation to the functioning of natural systems can open up possibilities for humanity to at least slow down the undesired effect it is causing on the Earth.

To own your rural property, even a neglected one, overgrown with weeds, in the mid-21st century shall be considered a treasure. Increasingly polluted cities, where people are living in poor conditions, consummating unhealthy food, water and air, with the industry which on the global level is failing meet the needs of every person on this planet, impose serious threats and the world will perhaps soon be turning to agriculture as the main industry branch. However, without the state as the main factor, without clear policies, processes, objectives, plans, analyses and controls, and further improving of rural economy and entrepreneurship, it is not possible to start the development of the village. Therefore, the state should make clear agrarian legislation and encourage the development of the village in that way instead of the constant making and changing of regulations.

The village must become more urban. We need a cultural and artistic life, fashion, sports and everything that young people today are looking for in the cities. It is necessary to raise awareness in schools from the very beginning about the advantages of the young staying in the village.

Small farms with an equal distribution of land, creating equal competition by growing organic food in a controlled environment with constant supervision of

laboratories that will check the product quality are the only oasis of healthy food in the increasingly polluted world.

Changing perceptions of everything in the nature around us, recognizing patterns that lead from simple to more complex but easily recognizable systems, the evolution of knowledge which is much slower than the evolution of science, is the only thing that can bring improvement to humanity in the years to come.

The authors hope, that this study will not remain words on paper, quickly forgotten, but be the root and the driver of rural economic development and entrepreneurship, because it's unique in providing clear directions for the preservation and further development of the village.

ACKNOWLEDGEMENTS

The authors would like to thank all those people who live in the country today, with no clear policy and state aid and struggle every day to feed the humanity.

REFERENCES

[1] Bailey, Clayton. 2002. "Where Have All the People Gone?" *Guardian Weekly*, June 27-July 3,p. 22.
[2] Barker, Debi. 2002. "Globalization and Industrial Agriculture." In Andrew Kimbrell (ed.), *The* Fatal Harvest Reader: The Tragedy of Industrial Agriculture. Washington: Island Press.
[3] Bridger, Jeffrey C. and Aaron J. Harp. 1990. "Ideology and Growth Promotion." *Journal of Rural Studies*, Vol. 6, No. 3, pp. 269-277.
[4] Daly, Herman E. 1990. "Toward Some Operational Principles of Sustainable Development." Ecological Economics, Vol. 2, pp. 1-6.
[5] Epp, Roger. 2002. "The Rural as Polis: Towards a Tradition of Agrarian Political Thought."
[6] Lobao, Linda M. 2000. "Industrialized Farming and Its Relationship to Community Well-Being: Report Prepared for the State of South Dakota, Office of the Attorney General." Expert testimony for the United States District Court, District of South Dakota, Central Division.
[7] Nassauer, Joan Iverson. 2002. "Agricultural Landscapes in Harmony with Nature." In Andrew
[8] Kimbrell Andy (ed.),2002,"The Fatal Harvest Reader: The Tragedy of Industrial Agriculture". Washington: Island Press.

THE ROLE AND IMPORTANCE OF CLUSTERS FOR RURAL ENTREPRENEURSHIP DEVELOPMENT

***Ivana Jovanovic*[6]**

Abstract: In this turbulent global economy, whose waves particularly feels countries like Serbia, which has more than two decades in process of transition, there are a few words that economic analysts, consultants, managers kept repeating: competitiveness, innovation, strategic partnerships and cluster - particular be discussed in this paper.

Practice has shown that harsh verbal repetition and verbal support can not improve business conditions, creating new value, new product or service, a new job or open a new market. This is only possible through proper identification of resources, and potential problems, setting priorities and designing programs that will have the capacity to achieve the greatest impact on economic reality. And that capacity can be created through the clusters.

The aim of this paper is to highlight the importance of clusters, as well as opportunities and possibilities for the development of rural entrepreneurship. This paper will discuss the basic concepts related to the creation and development of clusters, and the situation about clusters in Southwestern Serbia, and in particular the city of Novi Pazar and the environment, and a special emphasis will be on the clusters in the field of agriculture. One of them is the Pester agro cluster, which was established in 2012th, which brings together producers and processors of milk and dairy products. Pester agro cluster represents an initiative to improve agricultural sector in the territory which includes municipalities Sjenica, Tutin and Novi Pazar city This paper will show what are the main priority of this cluster, as well as the strategic objectives to be achieved. It will be also discussed ways of financing, both in the first year of development clusters, and in the coming years.

Key words: Clusters, Competitiveness, Associate, Rural Development

JEL classification: O10, O18

UDC 005.961:005.914.3(1-772); 334.758

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INTRODUCTION

Under modern conditions of globalization and the disappearance of barriers to international trade, competition is given a crucial role, both in developed countries and in developing countries. The role of the global environment necessitates focusing firms to create competitive and innovative products and services. Companies may increase their competitiveness through a series of activities, usually accelerating product innovation and increased productivity. But there is a limit to the activities that the company can perform. Companies can achieve much more by working together as a group of interconnected companies, suppliers, service providers and organizations relevant to their business, within the cluster. Encouraging cooperation between enterprises in clusters has proved in practice to be an effective instrument for strengthening the competitiveness of enterprises and training them to produce goods and services at higher levels of processing, which will be sold in the domestic and international markets. In the last decade, many theoretical discussions recorded and empirical attempts of different application of the cluster concept. This concept became the central idea of competitiveness and economic development. In Serbia, the concept of association in clusters is gaining in importance.

RURAL SERBIA

Originally, a rural area is viewed as a residual urban centers. In understanding rural regions, from the initial to the present current definitions, it is evident some broadening and deepening the meaning of the term. Extremely simple understanding of rurality in a territorial context is overcome by accepting the premise that rural region is a territorial unit with economic and social structure and diversified activities. This entity can include villages, small towns and regional centers. Although the concept of "rurality" is associated with a specific set of characteristics, the specificity can not be used as criteria for the definition of rurality. The most commonly used criteria for defining rural areas are population density and the population of a settlement. In addition to these indicators, using the space sector and other criteria such as the distance from the main roads, the distribution of the agricultural population, agricultural income and the like. Universal accepted definition for the separation of urban and rural settlement types do not exist, but the country according to their specific conditions and needs select indicators for the classification of types of settlements.

The OECD (Organization for Economic Cooperation and Development) definition of rurality distinguishes two hierarchical levels of territorial units: local and regional. At the local level (village) OECD defines rural areas according to population density. Rural areas, according to this definition, consider settlements with a population density below 150 inhabitants per km2. Based on this definition is derived typology of rural areas at a higher territorial level (regional, district).

This practically means that in the regional level, OECD classifies more functional and administrative units, depending on how much of the region's population lives in rural communities. Regions at a higher level of aggregation can not simply be classified as "rural", but only as regions with higher or lower levels of rurality. (Bogdanov,2007.)

In Serbia, the term "rural area" defines the area whose basic physical and geographical features is primarily use of land for agriculture and forestry. According to this definition, 70% of Serbia's territory can be classified as rural areas. In these areas, there are about 43% of the total population. As defined by the OECD (density below 150 inhabitants per km2), rural areas account for 85% of Serbia's territory and in the territories of which more than half of the population of Serbia (55%). In rural areas, it is most concentrated natural resources with rich ecosystems and biodiversity, human resources, economic activities and cultural heritage. (Network for Rural Development of Serbia, Action plan 2011-2015., 2010.).

According to the OECD typology, rural regions are divided into three groups(Bogdanov, 2007.):

1. The regions in which more than 50% of the population lives in rural communities- rural regions
2. Regions in which 15-50% of the population lives in rural communities-significantly rural regions or transition regions
3. The regions in which less than 15% of the population lives in rural communities-predominantly urban regions

Rural areas in Serbia are significantly different according to social, economic and demographic characteristics. The main problem and trends with almost all rural areas faced by are migration, weak diversification of economic activities, high unemployment, lack of employment opportunities, poor and underdeveloped infrastructure, low income per capita compared to urban areas and unpolluted environment that faces potential threats.

CLUSTERS- CONCEPT AND DEFINITION

Cluster concept has been accepted as one of the possible solutions for the survival of small and medium-sized enterprises, as well as driver of innovation and economic development. Clusters are one of the possible answers of globalization and unequal regional growth and development. Associating can decrease operating costs through integrated procurement of common supplies, joint participation, sharing of training costs, transport and marketing, etc.. The cluster is a geographically bounded concentration of similar or complementary businesses with active channels for business transactions, communications and collaboration.
English word "cluster" (set, bevy, bunch, group) was first used by an American composer to indicate a set of the same name, densely beaded shades. All over the world companies tend to gather in clusters, and they had a lot earlier than the term cluster entered the economic literature. One of the definitions of clusteris that cluster

are "geographically concentrated, interrelated businesses, from related and different activities as well as holders of knowledge, institutions and other organizations to ensure a critical mass of knowledge, technology, resources and equipment important to strengthen the competitiveness of individual companies-participants and cluster as a whole. "(Porter,1998. 77- 90). Cluster connects the common needs in the procurement, customer service specialist, manpower and other resources.

In the era of globalization, wireless communications, the integration of different forms of communication, faster and cheaper transport, paradoxically, seems to claim that grouping business in location plays an important role. In practice, location remains an important competitive advantage. While some technology skills and move around the world, some are spatially limited. Capital (digitized information, components, machines) and to some extent, labor force, have mobility and social capital is rooted in the local culture and institutions. Importance is the presence of those factors whose mobility globalization process has not significantly improved. Clusters have the opportunity to develop their specific mix of competitive advantage, based on locally developed knowledge, mutual relationships, cultural heritage and other local features.

Competitiveness of enterprises realize as a function of learning, knowledge from which follows the innovation and productivity. What happens inside companies is vital, but the competitiveness of enterprises strongly influenced by the quality of the local business environment.

Clusters include a company from a business, but the vertically integrated business, producers of complementary products, providers of infrastructure services, the institutions that provide training, information, research, and other technical support as well as a separate agency to establish standards. Clusters may include trade associations and other bodies which they use for support.

The key advantage of clusters lies in multidimensional close to all stakeholders-not just the geographical but also cultural and institutional proximity and alignment. Close enables sharing power and resources, joint activities, require a shared vision, common goals, and personal and social connections strengthening confidence and faster information.

Clusters as a new policy is based on a new way of keeping the traditional policies (industrial, regional policy and innovation incentives, etc.).That policy moves focus from the stimulus of the static competitiveness based on reduction of costs (subsidies, tax breaks) to the promotion of innovation, upgrade through new communion, providing seeds for new growth.

The most common shared objectives for which they were established clusters can be divided into six segments:

- IR-networks - create a network within the cluster and between clusters (production database companies, regular visits, directory of suppliers and service providers, websites)

- Training and education-needs analysis for specific training, organization of training, regular meetings of the company for the exchange of experiences and contacts
- Business cooperation-initiating and supporting projects of cooperation between companies, educational institutions and R & D, linking the funds to finance innovative projects
- Impact on Policy-Lobbying and creating industry dialogue, academia and government
- Innovation and technology-facilitating the innovation process, to monitor trends, spreading new knowledge of quality standards, improvement of technological processes

The growth of cluster-strengthening regional identity building of national and international reputation, promotion of investment, domestic and foreign

Benefits of association of businesses in the cluster are:

- Increase production and employment
- Increasing innovation
- Strengthening the expertise and know-how
- Increase the quality and productivity
- Increasing exports
- Better use of resources through cooperation
- Cost reduction
- Increased flexibility
- Access to new technologies
- Successfully managing change
- Better access to international financial markets

Disadvantages of association of businesses in clusters (Damjanović, Urosević, Štrbac, 2012., 89 to 97):

- Attempts by the government to develop clusters although businesses are not interested
- Low correlation structure and corporate culture of partner companies
- Lack of legal and financial options
- Lack of an entrepreneurial spirit
- Low level of trust within the cluster
- Lack of knowledge partners
- Lack of staff involvement in the network
- Lack of informal connections
- Unclear or unrealistic expectations of members who enter the cluster

Small and medium enterprises in transition economies because of low production capacity and potential supply they can not compete and associated companies in the globalized world, and they can not get to world fairs or large markets such as the EU, Russia and the Middle East. Practice shows that in exports can go only large companies, financially strong, which can explore the market, implement innovative marketing and new technologies. To attain this level of business performance solution is just in clusters, which enables companies to a number of advantages, especially cost-effective promotion, market research, joint procurement, integration of supply, cooperation with universities, institutes, and developed stages of cluster formation and development of the joint product and / or services.

Organization of small and medium-sized enterprises is certainly a question of entrepreneurial initiative - entrepreneurs have to find their own interest in association. The state government should create an institutional framework that will allow uninterrupted associating of entrepreneurs, but the question of entrepreneurs organizing, however, is still and only their question. The cluster can exist and can function without formal legal standards setting, but mostly is institutionalized. This cluster has its own management, headed by the cluster manager.

Cluster management tasks should be:

- promotion of the cluster concept,
- the development of social relations between cluster members,
- promotion of joint projects
- the promotion of cooperation with existing institutions,
- promotion of education and human resources development.

Cluster Manager manages cluster in a manner that is acceptable to all members of the cluster. He takes care of the individual, but also the common interests of cluster members. Cluster Manager is not appointed as director. Neutrality and independence in the management of the cluster is what is expected from him. Right from this reasons cluster manager should not be from among any of the subjects included in the cluster. It is recommended that the cluster manager is from the private sector that is familiar with the technologies, services, and market conditions and possesses all management skills. From the cluster manager is expected to try to bring various services clusters in integrated service system cluster. Since clusters can involve a large number of different subjects, it is essential and the successful development of information systems and connectivity partners with clients of clusters which should be based on innovative IT solutions. Innovative information systems may also contributes to the increase and facilitate the development of new products and processes within the cluster, access to new markets and to provide better efficiency of cluster management.

CLUSTERS IN SERBIA

According to the rankings of the World Economic Forum, Serbia by the level of development of the cluster takes 117 place. When you take into account that the quality of local suppliers takes 103 place, the quantity of local suppliers 87.place, and that the cooperation between universities and industry in research and development of 81.place, the question is how such a bad position when it comes to the level of development of the cluster. The answer can be found in two key factors: the still insufficient perception management about the benefits of local companies that may have the company of the "cluster" connectivity and lack of dedication and focus state of cluster development. In Serbia, there is no explicitly defined policies cluster.(Brkić, 2010.)

In contrast to developed countries, where the state generates cluster development through national and regional development strategy, in economic conditions in Serbia that are not the case. In Serbia, the cluster development takes place in the direction of "bottom up", ie, an initiative from the business community, which is largely supported by donations from international organizations. National Fund for the Development of clusters is symbolic, so that strategic support for cluster development from national and regional level actually does not exist. The businessmen of specified sector are linked because of the common business interests, including educational and research institutions on the basis of voluntary contributions, as well as representatives of local government to the extent of their information. The aim is to achieve stronger links between business, the public and the education sector as the key to organized economic development through innovation-their development and commercialization.

What is common to all clusters in the world is gritty work on the establishment of trust between the Member States, which is a long term process that results in a synergistic action of Member States and their higher level of sustainability. In the process of developing and establishing cluster, an important role plays cluster facilitators and managers, who need to constantly work in the field that is in constant contact with businesses to inform about their needs and connectivity for easier of solving identical problems.They must work continuously to build capacity in view of the fact that without the support of the state and the most developed clusters in the world can not survive.

PESTER AGRO CLUSTER

Pester territory includes municipalities Sjenica and Tutin and Novi Pazar city. These three local governments spread over an area of 2,540 km2 (2.9% of the territory of the Republic Serbia), in the southwestern part of the Republic of Serbia. Pešter field is the one of the economically underdeveloped areas of the Republic of Serbia. Novi Pazar is categorized by the level of development in the third category

(achieved 60% to 80% of the national average), and municipalities Sjenica and Tutin in fourth category (60% is below the national average) (Official Gazette of RS, 69/2011), with the additional aggravating circumstance that the two municipalities that have devastated areas.

According to the latest census 2011th in the territories lives 148.784 inhabitants (population 4,764 more than in 2002.), which is 2.09% of total population of Serbia.

The age structure of the population is much more favorable than the average of Republic. The territory is characterized by a significantly higher proportion of young people and significantly lower proportion of elderly population than the national level. Depopulation of rural areas follows the termination of the biological regeneration, but also due to migration to urban and other areas more attractive to live and work.Total population-109.327,of which 63.50% is urban, and 36.50 % is rural. (Republic Institute for Statistics).

On this territory is registered 1,126 companies and 5,481 entrepreneurs, but in reality there are significantly less businesses. The majority of businesses are located in Novi Pazar, which was expected considering the size. In terms of development of entrepreneurship in the entire territory, this territory can be assessed as underdeveloped as the quantitative as well as qualitative and criteria for territorial representation. The main activities in the field of manufacturing industry are textile and food industries, as well it should be noted development company which is engaged in the production of furniture, footwear, primary and secondary wood processing.

Table 1. Number of registered businesses

	Companies	Entrepreneurs
Novi Pazar	792	3,953
Sjenica	164	527
Tutin	170	1,001
Total	1,126	5,481

Source: Strategic Development Plan for the period 2013-2018.

This part of Serbia beside of extreme potential for tourism has great potential for agricultural development. In particular, it is believed that this area is fertile ground for the development of animal husbandry and the production and processing of milk and milk products. Existing dairies have limited range of products that can be made from the milk of poor quality, and they are primarily white slice of cheese and pepper in cream, while the minor is production of yogurt. Dairies lack of knowledge. They need technicians, sales, marketing experts and organizers. In addition, dairy equipment is required for the modernization of production and the production of new products, and it is certainly the most

important, all the diaries are financially weak and can significantly improve operations without new, additional, funding.

In the past two decades, the level of capital (foreign / domestic) investment is well below the average in the Republic of Serbia. Investments are generally small values and originate from the diaspora.

In this territory are registered about 10,821 farm, or 2.4% of all registered farms in Serbia (about 455,000 registered farms in Serbia). Registered farms represent about 29% of all farms in the region, and in the municipality Sjenicathese these farms represent has a dominant share (68.50% of all households) in the total number of households.

Table 2: Number of registered households and companies in the agricultural sector

Administrative unit	Individual farms	Companies	Entrepreneurs	Cooperatives	Total	% of total number of households in the municipality
Novi Pazar	3.518	8	1	2	3.529	14.96
Sjenica	4.662	7	1	1	4.671	68.50
Tutin	2.641	17	0	0	2.658	38.09
Totally	10.821	32	2	3	10858	

Source: Strategic Development Plan for the period 2013-2018.

Since there are a large number of individual dairy farmers, who can not achieve a competitive position in domestic and especially foreign market, despite the evident quality, there is an initiative to establish an association of these manufacturers.

In October 2012, in Novi Pazar, the founding assembly of Pester agricultural clusters was hold, which includes producers and processors of milk and milk products in Tutin, Sjenica and Novi Pazar. The main objective of this association is to develop the agricultural sector and, among other things, facilitate placement of milk, cheese and cream from Pester field, in the domestic and international markets, through a joint presentation of producers.

Pester agro cluster represents an initiative to improve agricultural sector in the territory which includes municipalities Sjenica, Tutin and Novi Pazar city. Pester territory belongs to the least developed parts of the country, where most of the population lives in rural areas. Character of agricultural production is extensive, with low levels of mechanization and the use of modern technology.'s Dominant is livestock production, and the production of milk and dairy products is a peculiarity of this region and makes it recognizable in the territory of the entire Balkans.

Entrepreneurship is under-developed across the area as well as in activities related to agribusiness. Dairies are small-capacity, under-bound in the vertical and horizontal value chains.

At the local and regional level, there is a high degree of consensus on the need for intervention in the production of milk and dairy products. There is a wide range of support organizations active in the territory that have confirmed their interest in participating in the process. Cluster initiative is part of a larger intervention, which aims to build capacity and core competencies in the sector. The cluster initiative has the potential to become a key driver of agribusiness in the territory of Pester. A prerequisite is that the purpose and service clusters are identified in cooperation with the end users - the producers and processors of milk and milk products.

The cluster has a very good development potential, an appropriate concentration of the territory, as defined by leading organizations, developed a network of support organizations and is part of a wider program of development of the dairy sector, which provides a solid basis for specific interventions. The key issue is to clearly define the structure of the cluster organization, including processors and farmers, but at the same time not eliminating the "healthy" competition within the group. To include educational and R & D organization from the very beginning, which will provide guidance on the technological part of the value chain.

Technical and financial support for the future office of clusters is essential, which will ensure effective implementation of action plans. Proposal development plan covering a period of 5 years and a database that will be subject to updating and expanding the strategic period. The process of planning and implementation is ongoing and constantly moving through its phases: assessment, planning, implementation, whereby substantially the quality of the process he had just updating and improving the objectives and planned activities. In this sense, this should be considered a strategic framework - as flexibile structure that should be subject to changes and improvement in the time to come.

Since this cluster is in the initial stage of development, the first year of operation is critical to the growth and development of initiatives. In this part of the life cycle of the cluster, special attention should be paid to the following areas of work (Pester agro cluster, Strategic development plan, for period 2013-2018):

- Development of clusters infrastructure
- Increasing the level of integration of members
- Admission of new members
- Implementation of key analysis and feasibility studies and the development of specific action plans
- Promotion of cluster initiatives

Some of the goals of this type of association is developing marketing, facilitating increased investment in this branch of agriculture, establishment of cooperation with related industries, as well as the protection of geographical indications of unique products in this area.

Development priorities determine the area of clustering, they present and give direction to define interventions in the sector on the basis of joint activity states. For each of the development priorities are defined strategic objectives. Strategic objectives are the priority which is dekomposed into basic parts, are more focused on the practical impact of reality and as a bridge to the general priority areas defined by specific activities and expected results. List of priorities and strategic objectives is given in Table 3.

Table 3: Priorities and Strategic Objectives Pester agro cluster

Priorities	Strategic objectives
P1. Promotion of cooperation in the sector	1.1 Reduce the cost and increase the bargaining power of clusters 1.2 Improve the competitive conditions in the industry
P2. Improving the technology of the production process of milk products	2.1 To contribute to the creation of conditions for the constant quality of the primary raw-milk 2.2 To contribute to creating opportunities for increased investment activity in the processing of
P3. Improving the visibility of dairy products with the Pester plateau	3.1 Development of territorial marketing of the Pester plateau 3.2 Preserving the heritage of traditional production to fulfill the requirements of the modern market

Source: Strategic Development Plan for the period 2013-2018.

Financial support for cluster provided by the European Union and the Government of Switzerland through the EU PROGRESS (Programme of the European Partnership with Municipalities) and the Czech Development Agency, and the Regional Development Agency SEDA Sandzak coordinate activities.

Over the next few years, Pester agro cluster should improve technology and quality systems of production, as well as recognition dairy products in this part of south-western Serbia. In addition. cluster should improve the appearance of producers in domestic and international markets through direct sales, organizing events, public events, exhibitions, fairs and other educational meetings.

The EU and the Government of Switzerland through the EU PROGRESS program, funded the construction and establishment of the Center for agribusiness development in the Pester with 220.00 euros and support for branding Pester products. This is part of a broader effort to revive production in this region of southwestern Serbia.

The founders and members of the cluster are considered to create clusters opportunity for members to stabilize revenue and job creation. Since in this way tends to promote production, technological processes and create an opportunity for innovation, it is considered that this will lead to increased competitiveness of the entire region.

Table 4: Pester agro cluster- tour plan for needs and services

No.	Name	Sector	Place-city	Founder-member	Member
1.	Doo ljin	Dairy	Novi pazar	Da	
2.	Doo sjeničanka	Dairy	Sjenica		Da
3.	Doo korzo	Dairy	Sjenica	Da	
4.	Doo beni komerc	Dairy	Sjenica		Da
5.	Nehrudin selmanović	Farmer	Sjenica	Da	
6.	Taib plojović	Farmer	Novi pazar	Da	
7.	Raif leković	Farmer	Tutin	Da	
8.	Sead pramenković	Farmer	Tutin	Da	
9.	Nermin šačić	Farmer	Tutin	Da	
10.	Bajram pepić	Farmer	Tutin		Da
11.	Esad holić	Farmer	Tutin	Da	
12.	Munir hodžić	Farmer	Sjenica		Da
13.	Džemail pljakić	Farmer	Novi pazar		Da
14.	Etem destanović	Dairy	Dairy		Da
15.	Doo pik pešter	Dairy	Sjenica		Da
16.	Rra seda	Development agency	Novi pazar	Da	
17.	Agricultural expert service	Government office	Novi pazar		
18.	Agricultural institute	Scientific organization	Kraljevo	Da	
19.	State university of novi pazar	Educational institution	Novi pazar		Da
20.	Inter-municipal union of agricultural producers	Association	Novi pazar	Da	

Source: Department of Local Economic Development, City Administration Novi Pazar

The financial framework Pester agro business clusters should be viewed from two aspects that are clearly linked to each other:

1. Sustainability of the clusters in terms of servicing operating costs
2. Developing activities and projects

Operational functioning of the cluster includes basic cost service center, including: staff salaries, office expenses and utilities, transportation and basic costs of promotion. In the initial period of operation is planned that these costs are covered by donations, while in the period that follows, the main source for operational expenses shall be membership fees. In this sense, arises prioritie of increasing the number of members, the adjustment of dues terms of business clusters and members ability to pay.

In the area of development activities and projects in the first 3 years, it is not realistic to expect that cluster have sufficient capacity to organize joint funding by members. In this sense orientation will be available development funds at national and international level, and making project proposals. It should be kept in mind that for each project must provided co-financing, and increasingly pre-financing, which imposes the need to design a funding mechanism to ensure these funds. This mechanism may be a composition of membership fees and potential contribution local governments to clusters work, if it is possible to establish this kind of relationship and partnership with the municipalities in the territory.

The table below presents the framework of the cluster model of funding for the period of the first 3 years, and for the first year is designed to approximate the value of the so-called. action for quick results, which should be the first joint actions / pilot project of clusters.

Table 5: Cost for the first 3 years of clusters work

Costs/year	Year 1 (€)	Year 2 (€)	Year 3 (€)
Operating costs	12.000	16.000	19.000
Developing projects and programs	7.000	20.000	35.000
Total	19.000	36.000	54.000

Source: Strategic Development Plan for the period 2013-2018.

Table 6:Sources of funding

Sources of financing / year	Year 1 (€)	%	Year 2 (€)	%	Year 3 (€)	%
Donor funds	17.000	89.7	27.000	75	39.000	72
Fee	2.000	10.3	6.000	16.7	10.500	19.4
Other			3.000	8.3	4.500	8.6
Total	19.000	100	36.000	100	54.000	100

Source: Strategic Development Plan for the period 2013-2018.

Table 7:Collection of membership fees

Collection of membership fees	Year 1 (€)	Year 2 (€)	Year 3 (€)
Membership fee	100	150	150
Number of members	20	40	70
Total	2.000	6.000	10.500

Source: Strategic Development Plan for the period 2013-2018.

CONCLUSION

Despite the growing interest of the developed countries for clusters in the last two decades,they are still not in Serbia are not enough attract the attention of both policy-makers, and even businessmen. The task of local government is to create an enabling environment in which clusters emerge and develop. How would that happen, it is necessary to use the recommendations and measures that have been developed at EU level, but also practical examples of countries that have managed to take the concept of clusters in order to improve the competitiveness of the national economy.

In order to create a more favorable environment for the development of clusters and strengthen existing cluster initiatives, it is necessary to implement the following policy measures:

- Map the existing clusters and identify the most promising export, innovation and quality cooperation. Mapping is the determination of regional distribution segments of the economy (which are grouped into 38 categories of clusters). Based on the mapping to select and strengthen clusters with the greatest potential in the regional and national levels (Brkić, 2010.,p.121.).
- To encourage private-public dialogue and partnership between government, industry and academic institutions at the local, regional and national level in the segments of the economy no matter where they are mapped strong clusters.
- Direct the politics of education, research, entrepreneurship development and attracting foreign investment in the existing clusters (Brkic, 2010,p121.)
- Direct donor funding sources into key clusters
- Creating a unique cluster policy in Serbia in order to enhance the visibility and coherence in relation to different types of cluster support. Cluster policy in Serbia need to comply with other policies, so that it can provide comprehensive and coordinated support for clusters.
- Encourage cluster initiatives in underdeveloped regions. Clusters are an important tool for the promotion of balanced regional development. In underdeveloped regions there are no large concentrations of industry. Therefore, the first cluster to be incurred in developing regions, tourism and agriculture, in order to develop infrastructure and attract investments in these regions

One initiative is the establishment of Pester agro cluster, in order to further the development of the region, enables marketing of milk and dairy products to the international market, and to achieve the competitiveness of the region. Since this cluster in the initial stage of development, it will take a lot of hard work and effort of all members of the cluster, in particular cluster managers to achieve goals.

REFERENCES

[1] Brkić, I. (2010.), Cluster Development in Serbia and the role of government in creating an enabling environment for the emergence and development of clusters, In Proceedings: Where is going the competitiveness of Serbia, (108-122), Belgrade: Faculty of Economics, Finance and Administration

[2] Damjanovic, Z., Urosevic, S., Štrbac, N. (2011)., Cluster management and application of new information technology.In the Proceedings, SEDA Agency for Regional Development of Sandzak (eds.), Regional Development and Cross-Border Cooperation: Searching for new perspectives, (89-97), Novi Pazar (Serbia): SEDA, the Agency for Regional Development of Sandzak

[3] Porter,M., (1998), Cluasters and the new economic of competition, Harvard Business Review, Vol. 76, issue 6,(77-90), Boston

[4] Roelandt, T., Den Hertog, P.(1999.), Cluster Analysis and cluster based policy making: The State of the art. OECD Proceedings, Boosting Innovation: The Cluster Approach, Organization for Economic Co-operation and development

[5] Network for Rural Development of Serbia, the Action Plan 2011-2015., 2010th, available at www.ruralinfoserbia.rs

[6] Decree on the uniform list of regional development and local government in 2011., Official Gazette of RS, br.69/2011

[7] Pešter agro klaster, Strategic development plan , for period 2013-2018., 2012.

[8] www.clusterhouse.rs/Infocluster, Journal of Cluster House, January 2013.

[9] www.buildmagazin.com/(accessed 08.04.2013..)

[10] www.secep.rs/(accessed 01.04.2013.)

[11] www.pks.r

FAMILY POTENTIAL AS A BASE FOR RURAL DEVELOPMENT

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Abstract: Rural development is determined by finding a balance between long-term sustainability of the household, environmental and social dimensions of rural development. Improving economic performance, reduce production costs, promotion of innovation and increased market orientation through diversification of economic activities are important for improving the quality of life and a better environment. Attractiveness of rural areas requires the promotion of sustainable growth and development and seeking new opportunities. Rural development starts from the point where people are now, with the vision and dreams for their future and is based on two things build and pooling resources. The concept of rural development is in its infancy. The experience of the European Union designed to show rural development policy and financial support have resulted in a successful economy. The aim of this study is to find the potential in rural areas that form the basis of rural development. In the rural areas of most natural resources (agricultural land, forests, water). Million unemployed, with a tendency to increase this number, clearly indicates that the labor force most potential for economic development of Serbia. For maturing workforce, its general education and vocational training are made enormous investments that not only have the opportunity to fully express the increase in production and an increase in productivity, but the unemployed appear as consumers and not producers. Therefore unemployed labor is not only the most abundant and untapped production potential but social problems of enormous proportions that does not create a favorable social environment for successful economic development. The subject of this research is that the family is viewed in terms of consumption, while consumption is seen as the final stage of economic activity. Economy neglected area of economic life of an individual under the assumption that what is happening in the family is not relevant or is assumed that the processes that take place in the family are analogous to those in the economy. The results of this study show that not all economists ignored the family as the subject of economic analysis. Gary Baker was awarded the Nobel Prize for the theory of the allocation of time and thus contributed to the family becomes the subject of economic analysis. The theory of time allocation has become a model of resource allocation within the family.

Key words: Family, Entrepreneurship, Rural Development, Economic Growth

JEL classification: M10, O10, O18

UDC 338.1(1-772); 316.334.55

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INTRODUCTION

The paper has aim to identify the economic resources of families in rural areas and the possibility of improving the rural economy. Detecting the development opportunities of families in rural areas and the assessment of their needs should contribute to the creation of mechanisms for reducing poverty in rural areas. Family in its rural areas can mobilize their resources development by creating attractive conditions for economic development and revenue. In rural areas, there are most natural resources (agricultural land, forests, water). The subject of this study is family that is considered in the framework of income realization, where income is seen as the final stage of economic activity. Economy neglected area of economic life of an individual under the assumption that what is happening in the family is not important and it is assumed that the processes taking place in the family are analogous to those in the economy. The first chapter presented the methodological framework for the scientific study of rural development and their practical application. The second chapter interprets the rural economy as an important segment of the state policy aimed at the rural population. The purpose of the rural economy development is reviving rural areas, support sustainability and improving the socio-economic structure. Investment in the rural economy are intended services, infrastructure and the environment. Chapter three presents some problems in rural areas of Serbia with an emphasis on employment structure and infrastructure state. The fourth chapter discusses the prospects of Serbia rural development and processes that encourage the development environment and thus contribute to a better economic position. In the fifth chapter the focus is on families that represent untapped production potential and social distress. This chapter presents the theory of time allocation. Gary Baker was awarded with the Nobel Prize for the theory of time allocation, thus contributing that the family becomes the subject of economic analysis. The theory of time allocation has become a model of resource allocation within the family. The sixth chapter shows the perspective of entrepreneurship and family businesses highlighting the obstacles that slow down the process. The seventh chapter highlights the importance of the family business as a specific form of small companies which are related to families and businesses. Special emphasis is placed on the participation of the individual in the family business.

THE METHODOLOGICAL FRAMEWORK FOR THE SCIENTIFIC STUDY OF RURAL DEVELOPMENT

The methodological framework for scientific research and the practical application of rural development can be reduced in several dimensions: regional, social and economic. These aspects of rural development are complex and the development of appropriate methodologies for the majority of regions is impossible. (Bogdanov, 2007a. pp.39) Restrictions arising from heterogeneous

social, economic and natural characteristics. The World Bank in 2000. published a "Handbook on indicators of rural development", which covers a broad set of indicators at the regional and national levels. Selected indicators are compatible with human resources development which is 1990. defined by the UNDP (United Nations Development 1990) for the purpose of monitoring the life quality and social differences in certain parts of the world. Selected indicators of rural development in the document are grouped into three categories: social welfare, economic performance and population and migration. (Bogdanov, 2007a. pp.39) Theorists agree that the concept of rural development based on human potential is adequate access for the mobility of the educated and skilled workforce. The risk of this approach is in danger of experts, trained and educated migrate with their knowledge and skills in the larger centers where there are prospects for their advancement. However, this approach has spawned a value such as:

- local experience and traditional knowledge,
- participation of farmers in the research and technical innovation,
- develop their own initiative and management skills among farmers. (Bogdanov, 2007a. pp.43).

Approach focused on the population is motivated by the fact that the limits of human potential represented an obstacle to the development of rural areas. Attempts of scientific systematization and interpretation of various approaches, and mechanisms implementation remain a theoretical.

RURAL ECONOMY

The rural economy is an important part of several decades of state policy aimed at the rural population. Policies related to rural development is focused on moving away from agriculture and food production, as well as basic functions of rural areas. In Serbian rural areas the GDP per capita is a quarter lower than the national average and indicates the residual development. The share of agriculture in GDP in rural areas is about 30% which is significantly higher than in other emerging market countries. The explanation lies in resources for agricultural production, what Serbia has. Agricultural productivity is below the European average and that is the reason for the unfavorable living standards. (Ministry of Agriculture, Forestry and Water Management, 2009th pp.12). Families in Serbian rural areas have small development potential and they are the majority of the total population. Serbian rural areas has 1.365 million households, accounting for 54% of total households. Farm size to 3 ha is 328 thousand or 56% of the total number of households in rural areas. Rural areas in Serbia until the early nineties were characterized by a strong trend of emigration due to agrarian exodus. At the same time there has been a rapid growth and development of other economy sectors. Outflow of population from rural areas continued, mainly in mountainous areas with less fertile soil. Approximately 1/3 of the active population is employed in

agriculture. The employment rate in agriculture is among the highest in the European Union. Rural areas in Serbia are defined according to the criteria of the OECD, as well as those municipalities with a population density below 150 inhabitants per square kilometer. According to this definition, 130 municipalities is seen as a rural municipality of 165.

Households in rural areas are exposed to economic risk due to rising competition, reduced employment opportunities, the devastation of rural areas and the lack of institutional support. Sensitivity of rural households has been recognized by the European rural development as a particular problem for new members. Assistance programs aided the transformation of these households in a market-oriented farms. (Bogdanov, 2007a. pp.32). Households responsibility for their position transfer to the state. However, the household did not do enough to improve their position. The main restrictions on the use of state support lie in the lack of information, difficult access to counseling services and low levels of personal initiative. The main purpose of the rural economy development is reviving rural areas, support sustainability and improving the socio-economic structure. Investment in the rural economy are intended for the improvement of services, infrastructure and the environment. Infrastructure development can help to reduce regional disparities, increasing the opportunities for the development of entrepreneurship and the creation of conditions for economic development. Investments are related to the supply of water, energy, waste management and access to information and communication technologies. Priority investments are related to entrepreneurship development, micro and small enterprises, crafts and rural tourism in order to improve the rural economy. Attractiveness of rural areas depends on the promotion of sustainable development and employment opportunities. The taken measures should contribute to improving the competitiveness of rural areas, increase the income of the rural population and create new employment opportunities.

CURRENT PROBLEMS OF RURAL AREAS IN SERBIA

About 50% of the employed rural population has an informal work engagement, which indicates that a large contingent of manpower is formally one of the agricultural labor force. The participation of women in the manpower whose production oriented to market is extremely low 26.1%. Statistical sources in 2007 (Ministry of Agriculture, Forestry and Water Management, 2009th pp.12-18). recorded that 45% -50% of the Serbian rural population is employed in agriculture, which proves the low income of the rural population. Data indicate underdeveloped rural labor market, a lack of jobs and high-quality jobs. Rural manpower is engaged in manufacturing 16.3%, wholesale and retail 9.5% and 6% of the construction industry (Ministry of Agriculture, Forestry and Water Management, 2009th pp.12-18). A small number of jobs are located in the public sector and service sector. The unemployment rate in rural areas was 21% higher and it is the

consequences of the lack of employment opportunities. The youth unemployment rate is significantly higher compared to the total manpower.

Infrastructure in Serbian rural areas is undeveloped and does not contribute to increased competitiveness and investment activities. The coverage of the basic infrastructure of the village is such that 80% of the villages have access to basic services (road network, electricity, fixed and mobile telephony). Water supply, gas, sewer and garbage dumps are less represented in the Serbian villages. Utility infrastructure is undeveloped, neglected and does not meet the needs of the population of these areas in terms of quality. Studies have shown that residents of rural areas indicated that problems related to municipal infrastructure are priority for them and they are ranked ahead of economic problems. This specifically refers to the water supply, sewerage, electric power and roads. Investing was usually occurred in telecommunication systems, the smallest investments were in gasification and waste disposal. In the lowland areas of the system are repaired, while in the mountainous areas built a new municipal facilities. Water supply in rural areas varies depending on terrain, location and availability of alternative settlement to resolve water supply problems. Research shows that villages that have no access to central water supply, use water from wells. (Ministry of Agriculture, Forestry and Water Management, 2009th pp.12-18)

PERSPECTIVE OF RURAL DEVELOPMENT IN SERBIA

The concept of rural development in Serbia is in its infancy. The experience of the EU shows that designed rural development policy, supported financially, resulting in a successful rural economy, with wide employment opportunities. Serbia has a large number of villages that are in the dying process. Of the 4800 every fourth or 1 200 is in the phase of depopulation. Each rural development strategies inevitably focuses on specific areas of comparative advantage, and one of the goals is to strengthen the competitiveness and employment, which will provide high sustainable development. In rural areas it is necessary to develop a process that would encourage the creation of such a business environment that would allow:

- encouraging new entrepreneurs to enter the private business, and
- incentives for opening family businesses that are required to create new jobs and generating new added value.

To ensure a better economic position of rural areas through increased jobs, better paid and more diverse jobs, new businesses and new production, it is necessary that certain changes occur in:

- economic perspective of undeveloped areas (strategic investments such as new roads, pipelines, schools or colleges, optical cable, Internet, industrial areas, tourist facilities), that enabling the business development, due to the lack of developed infrastructure could not be the subject of business plans,

- physical or social infrastructure (new spaces, objects, objects of social infrastructure, new schools), from which it creates more space for the establishment and business development,
- the current business climate, the new services of the municipal administration, local deregulation, local regulations for conducting business, new services for current and potential entrepreneurs in order to create an enabling environment for the establishment and business development. (Zivkovic, 2008.pp. 298).

Rural development starts from the point where people are now, with visions and dreams for their future and based on two things: building and pooling resources. Holders of rural development must have a multidisciplinary approach and to train in terms of finding the idea in entrepreneurship. Based rural development are people who are willing to stick through the capital, which can be: material (money, buildings ...) and insubstantial (people). Rural development is based on the principle that the wealth and quality of life in undeveloped areas heavily dependent on favorable business conditions at the local level and the creation of prosperity. Undeveloped areas should especially promote the opening and growth of family businesses, and thus create jobs. Thus will reduce the social costs and increase the range of possibilities for the development of effective social and community programs.

Ministry of Agriculture, Forestry and Water Management has formed a network to support rural development consisting of six regional centers in Serbia, each of them has its offices in all municipalities. Centre's were operational at 2008. and initially worked primarily on the provision of basic information on what the Ministry of Agriculture offers of incentives, grants and loans, and how to reach them. The coordinators of the regional centers have organized meetings with municipal officials and officials in charge of agriculture, where they were informed about the start of work and what network will do, collect the necessary statistical data, identify other potential local partners in their municipalities, as well as farmers' organizations, organizations dealing with the protection of the environment, support entrepreneurship, handicrafts, preservation of cultural heritage and traditions, community development, etc… Through this network has been established functional cooperation between the Ministry of Agriculture, Forestry and Water Management of the Regional Rural Center, local governments and development partners. It was established fast flow of information from the Ministry of Agriculture, Forestry and Water Management, through regional rural center and regional centers to end users. Users were directly familiar with the strategy and activities of the Ministry, as well as the program of incentives, part of branch offices in malls, and part on discussions that were held in the villages. Also, in cooperation with the Ministry were held promotion of regulation, which was an opportunity for people that in direct contact with the authors of regulation get all the information they needed.

POTENTIAL FAMILIES

The man is our greatest wealth. "This sentence is not normative, but it is value neutral. People behave rationally, and commonplace economic apparatus is used for the analysis of investment and can be applied to investment in human capital. If there are several possible investment projects, a number of alternative ways for people to increase their human capital, they can decide for the one project that generates the highest net present value of the expected income. Everything is the same as for the preparation of investment projects, except that instead of investment in buildings and equipment, an investment is in human capital. With this approach, people become capital funds. The bigger the human capital fund is, the greater are the returns on that capital. Education is the most important type of these investments.

Standard accounting categories are not reported in full production potential available to a company. Existing accounting category does not include fund of human capital that employees have in the company.

Response of the company in terms of investment in the capital of their employees, i.e. education and training of the manpower employed in the enterprise? The greater the share of investment in the manpower is, the less fluctuation is, since the workers will stay in the company, seeking to as long as possible appropriate the returns of such investment in equity. (Becker, GS in 1976. pp.84)

Million unemployed, with a tendency to increase this number, is a clear indication that manpower is the economic development potential of Serbia. For maturing manpower, its general education and vocational training were made a huge investment that not only have the opportunity to fully express themselves in increasing production and increasing productivity, but the unemployed appear as consumers and not producers. Therefore unemployed manpower is not only the most abundant and untapped production potential for massive social distress that does not create a favorable social environment for successful economic development.

Employment of manpower, whether skilled or unskilled, encountered in modern working conditions on serious limitations. In rural areas, lack of accumulation does not allow the creation of new jobs in the extent of the job seekers. Bearing in mind that the manpower is abundant factor, means that the manpower should be used. Thus, the additional value allows to import the necessary raw materials.

In Serbia, unemployment is hidden, all members of the household are doing something, but in the household tasks can be done by much less members, so there is a huge manpower contingent that can be out flowed, and achieved a higher level of production. (Mihajlovic, 2008th pp.180)

THE THEORY OF TIME ALLOCATION

The family is viewed in terms of consumption, while consumption is seen as the final stage of economic activity. According to this view, the family is based on the maximization of a well-defined used function, whose arguments are the products purchased in the market. The model is based on a set of assumptions and preferences of individual family members and a special case of the collective model, where the preferences of family members converge and therefore the obligations, responsibilities and rights of resources are allocated by agreement within the family. According to Baker objective is to maximize the welfare of the family, which means that the distribution of responsibilities within the family is based on the comparative advantages of all members. Economic analysis ignores the economic and social life sphere of the individual under the assumption that what is happening in the family is not important and it is assumed that the processes taking place in the family are analogous to those in the economy and society. (Jennings, in 1993. pp.. 111-130) It should be noted that not all economists ignored the family as the subject of economic analysis. Gary Baker was awarded the Nobel Prize for the theory of the time allocation, thus contributing that the family becomes the subject of economic analysis. The theory of time allocation has become a unitary model of resource allocation within the family. The unitary model is based on the assumption that the family is a collection of individuals who can communicate how best to combine the time required to produce and the time required for the purchase of goods for consumption. The family is the unit in which all resources are produced, procured, distributed and consumed with agreement. Behavior of households is only change depending on market prices and household income.

It can be said that this is a completely new approach to the study of the family. First of all, it introduces a new category of goods - basic goods. Only basic goods are used directly in consumption (enjoy), and only this goods as the arguments are included in the utility function of individuals or families. These goods are not goods, they can not be purchased on the market, but they are goods that only family "produce", based on two inputs:

1. time as the most important resources that they have and
2. market goods or goods that are purchased on the market.

These two " production factors " are the arguments of the production function where each family produces basic goods, i.e. the only good which can directly derive utility. In other words, market goods, or goods in the utility function of the family enters only indirectly, through the production functions of the family, that becomes the family-factory.

A key resource of family is time. This resource can be hired through the market (such as the provision of services through the labor market), or, alternatively, out of the market, the family, as an input in the production function, which describes the production of basic goods. Time that take advantage of the

market, for the provision of services, increased family income and increases the possibility of buying goods, but reduces the time available for the production of basic goods within the family. However, despite this distinction (work - leisure), well known in standard microeconomic theory, the amount of time that according to this theory should be leisure, represent time as a scarce family resource, which has an alternative use for the production of various essential goods described with family production function. In this sense, there is a new constraint faced by the family, based on full income, i.e. the income generated by the family if their entire available time used in market activities. It shows that time is money and that has its price. (Begovic 2004. pp.. 80-82)

Use the full cost of goods leads to the formation of a new, different lines of the family budget constraints within which it maximizes the benefits that they enjoyed. Budget constraint, which is based on the full income can be expressed as:

$$\sum_{i=1}^{m} \P_i Z_i = S$$

where ¶ is the full price of one unit Zi, and S represent a full income of families. Full price ¶ can be defined as:

$$\P_i = a_i p_i + b_i w$$

Where pi is the price of goods, w price time used for the production of basic goods Zi, while the a and b are parameters used to measure the intensity of goods and time to participate in the production of basic goods Zi. In such circumstances, it also redefines optimal consumption within the family. (Becker, GS in 1993. pp.385-409).

PERSPECTIVE OF ENTREPRENEURSHIP DEVELOPMENT AND FAMILY BUSINESSES

Improving the favorable business environment for entrepreneurship development is currently dealing with municipalities, regional SME agencies, regional chambers of commerce, associations of industrialists and entrepreneurs, the Department of National Employment Service and a small number of non-governmental organizations. Along local and regional institutions, it is the primary task of the Republic of Serbia Government. However, despite many of these institutions and the progress on creating an entrepreneurial environment, much more remains to be done. The main objections and obstacles are related to:

- high local taxes and fees,
- lack of liquidity in the economy,
- inefficiency of local authorities in issuing various permits for business,
- lack of equipped sites for construction, with appropriate zoning permits,

- other procedures for obtaining building permits,
- inadequate understanding of the needs of entrepreneurs,
- inefficient work of judicial authorities in certain commercial disputes,
- corruption,
- inadequate procedures in public procurement
- lack of favorable credit sources,
- support to the entrepreneurs is often more verbal than real.

Rural development is often not taken seriously by the local government. Cooperation and coordination among different stakeholders and institutions in this area is far than the required to ensure the effectiveness of these processes. Municipalities may have departments for industry and entrepreneurship, but globally speaking, their role is unclear, inadequate, and often contradictory. These departments are dealing with registration and the provision of a small number of necessary services to entrepreneurs.

Many municipalities in Serbia lacks a clear policy and rural development plans, as well as understanding the need to establish partnerships in promoting rural development. Municipal officials often has lack of education in this field. Steps taken to improve rural development could be the following:

- harmonization of the Serbian laws and the practice of the EU law,
- standardized preparation of rural development strategy,
- building partnerships
- taking positive experiences of other communities,
- adapting the structure of the municipal administration to rural development needs.Through the coordination of activities in the field of rural development, undeveloped areas may become an attractive place for entrepreneurs who can bring new jobs and welfare for all citizens. The results of rural development must be visible and will have a direct reflection on the lives of citizens. (Zivkovic, 2008.pp. 306)

FAMILY BUSINESS

In a capitalist economy, companies are owned by individuals. Companies are only legal entities, ultimately, business owners are the ones who are responsible for their behavior, and the owners are the ones who reap the rewards or pay the cost of such behavior. Owners of family businesses are usually directly involved in daily operations and they are in a position to carry into effect any goals that enterprise set. As a rule, the owners will be interested in maximizing the profits of their companies, but if they have non-profit objectives they can certainly enjoy the fruits of their labor. (Varian, 2008 pp. 331)

Family business is a specific type of small business association that represents families and businesses. In the world there are many examples of family businesses that have become large corporations (W., Disney and Ford). Families founders are still involved in the management and decision-making and it can be said that the opinion of the family is still important.

There are different models of participation of the individual in the family business. Two or more members of the same family manage, operate and share ownership of the company. Other family members may be involved in the business as employees who work full time, while others work from time to time, or work in other companies. Employed in family enterprises do not have to be families members and their status depends on the number of family members who are directly involved in the business.

Family business has business and family goals. Business goals are profitability and survival of the company and family goals are well-being and prosperity of family members. In the family business family and business as a separate institutions overlap and influence each other. Characteristics of family business are families rivalry and businesses. Many entrepreneurs prefer family, while a small number of entrepreneurs preferred business and knowingly allow business to jeopardize the family. For entrepreneurs, it is important to combine family and business interests, because that harmony affects the survival and prosperity of both the company and the family. Advantages of family businesses are following:

1. power of family relationships
2. creation and preservation of humane working conditions
3. orientation of the long-term goals
4. the importance of quality.

Power of family relationships is an important condition for the development and survival of the family business. When business activity falls, the family members do not leave the company because it is a family tradition and a unique motivation, and staff members who do not belong to the family leave the company. Family members are willing to sacrifice their earnings to repay outstanding liabilities, to postpone personal shopping, to work for low wages while business becomes successful and until financial difficulties are over.

The creation and preservation of humane working conditions leads to better care of employees and work conditions.

Orientation on long-term goals is the result of business transfers from generation to generation. Other companies present their results on a quarterly or annual basis.

Quality products and services have a priority in family enterprises, because the name and reputation of the family is continued interest of all members.

These advantages of family-owned enterprises should be used for training the younger members of the family to work in the family business.

Because of the connection of family and business goals and interests, family relationships in a family business are becoming more complex. Members of the family business who are in kinship have specific roles of mixing family goals and interests. The most important role in family-owned enterprises is the founder of the entrepreneur in the role of father of the family, followed by the role of the children to him, the role of brothers and sisters to each other, their spouses, the role son-in-low and daughter-in-law and the role of the entrepreneur's wife who is the mother of the family.

Family businesses management is very complex due to family relationships and family roles. Family relationships in a family business are more sensitive than the relationship between unrelated employees, because the management interests intertwined with feelings and interests of the family. Family relationships include emotional connection that makes managing complicated. For example: sanctioning of worker who is a member of the family is much more complicated than punishing workers who are not members of the family. If family members do not have the leadership skills, companies management should be left to the more professional members of the companies who are not family members. The decision to increase family members in key positions in the company should be made carefully based on professional and leadership skills. Employees who are not family members have limited opportunities for advancement, which creates a sense of frustration and injustice. Owners of family businesses should strive to create equal conditions for all employees and to be impartial when assessing achieved results.

Professional management: Because of the complexity of family relationships a need for professional management in family firms is higher than in other companies because the professional management is prerequisite for business success.

The researchers suggest several rules, called "best management practices" family business, which implementation contributes to the realization of business objectives and allows the family to maintain its integrity. These are:

1. encourage new way of thinking and take into account the long-term business and family interests,
2. attract and retain quality managers, who need not be members of the family,
3. create flexible, innovative organization
4. acquire and preserve the acquired capital
5. prepare successors of family businesses
6. take advantage of the power and benefits of the family business.

Family reasons should not influence on the neglect of the professional management rules. (Ostojic, 2010th pp. 26-29)

CONCLUSION

Appreciating the importance of small holders, the measures that should improve their position should be directed to increase household income and reduce unemployment of their members. Households' responsibility for their situation transferred to the state, but it is certain that themselves did not make sufficient effort to improve their circumstances. Insufficient information, limited access to extension services, lack of initiative, are just some of the limitations of their progress. Active residents of rural areas have its roots in tradition. Alternative employment options (self-employment) would partly solve the problem. Rural development policy should take this issue into account, particularly for vulnerable groups such as young, women and the poor. Economic development of rural areas should be focused on the market and their requirements. This decision has to be made at higher distances of decision making, not on the local and regional level, because only in this case they may have a strong influence on employment growth. The importance of the problem stems from the natural resources and other resources of rural areas (e.g., potential families). Previous experience shows that in terms of undeveloped economies these resources are critical to the employment growth. Rural development policy must be focused on the needs of local residents and small rural households. Development policy must take into account restrictions, not just successful development models of other people's experiences. In rural areas, beside unemployment problem limiting factor in the development is undeveloped infrastructure. Rural infrastructure requires investment in the expansion and construction of new systems. Infrastructure is an important factor in improving the quality of life of rural population. Jurisdiction in this area has the local government that does not have sufficient funds for investment. Sustainability of the infrastructure can be achieved by introducing cost recovery services (waste disposal, water supply, etc.). This requirement is important not only to national, regional and local level, but also for business households and individuals. Development in rural areas must be based on the strengths and resources available to people who are living and working there. The paper argues that a key resource of family is time. This resource can be hired through the market (such as the provision of services through the labor market), or, alternatively, out of the market, the family, as an input in the production function, which describes the production of basic goods. In this way we achieve sustainability by increasing economic opportunities and improving quality of life in rural areas. This paper shows that the existence of potential family is one of the necessity factors of increasing the employment rate. In order to achieve this it is necessary the growth in new economic activity through entrepreneurship development, micro and small family businesses.

REFERENCES

[1] Begović, B., (2004) Ekonomisti nobelovci 1990-2003, Beograd, Ekonomski fakultet

[2] Becker, G.S., (1976) The Economic Approach to Human Behavior, Chicago: Chicago University

[3] Becker, G.S., (1993) Nobel Lecture: The Economic Way Looking at Behavior,The Journal of Political Economy, Vol 101, No. 3, 385-409.

[4] Bogdanov, N., (2007) Mala ruralna domaćinstva u Srbiji i ruralna nepoljoprivredna ekonomija, Beograd, UNDP Sektor za smanjenje siromaštva i ekonomski razvoj, 32-43.

[5] Janković, S., (2009) Evropska unija i ruralni razvoj Srbije,Beograd, Institut za primenu nauke u poljoprivredi, 41-53.

[6] Jennings, A., (1993) Public or Private? Jnstitucional Economics and Feminism, Ferber, M., Nelson, J. (ur.) Beyond Economic Man, Feminist Theory and Economics, Chicago, University of Chicago Pres, 111-130.

[7] Ministarstvo poljoprivrede, šumarstva i vodoprivrede (2009) Plan strategije ruralnog razvoja 2009-2013, Beograd: Republika Srbija

[8] Mihailović, K., (2008), Činioci razvoja – polazište razvojne strategije, Dopuđa, A., Trošić, B.(ur.), Razvojne strategije preduzeća i privrede, Beograd, Megatrend univerzitet, 179-190.

[9] Ostojić, S., (2010), Obrtna sredstva u malom biznisu, Beograd, Megatrend univerzitet

[10] Varijan, H., (2008), Mikroekonomija, Beograd, Ekonomski fakultet

[11] Živković M., Bevanda V., (2008), Razvoj nović oblika poslovanja u funkciji lokalnog ekonomskog razvoja, Dopuđa, A., Trošić, B.(ur.), Razvojne strategije preduzeća i privrede, Beograd, Megatrend univerzitet, 297-307.

FINANCIAL PERFOMANCES OF ENTREPRENEURSHIP IN SERBIA AND GREEN GROWTH

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Abstract: This paper explores possibilities for introducing green business models in the entrepreneurial sector of Serbian economy. Major hypothesis is that, despite huge barriers, Government of the Republic of Serbia can help in forming a small, but financial viable and export oriented nucleus of green business among entrepreneurs. The paper's goal is to show on green growth businees models that are the best suited to Serbian profile, and also to key barriers that should be removed, or mitigated.

Green growth business models that are the best suited to entrepreneurship sector in Serbia are: alternative energy and energy efficiency, production of healthy food, systems for waste regeneration and models based on green cities. Key barriers that stand on the road to green growth models implementation, are: inertia, poor infrastructure, low social capital and low quality of institutions, poor quality of governance and dependancy of entrepreneurial sector on external sources of financing. Government of the Republic of Serbia has to decide which one of the proposed green growth models could become development priority.

Exploration is based on several methods, such as: descriptive method, comparative method, ratio analysis and the analysis of net working capital. The paper consists of six parts. The first part describe the context of green growth, more exactly the role of market and state in creating conditions for sustainable (green) growth. The second part explains the concept and importance of green growth. The third part describes different green businees models. The fourth part deals with the problems of introducing green growth in national economies. The fifth part analyses Serbia's profile and entrepreneurship perfomances. The six part concludes.

Key words: Green Business Models, Barriers, Entrepreneurship, Financial Perfomances

JEL classification: L26, M 41, Q56

UDC 005.961:005.914.3(497.11); 502.131.1(497.11); 502.171:336

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INTRODUCTION

Growth and development of national economies have never been without challenges. The beginning of the XXI century is marked by global financial crisis, crisis of public debts, and the consequences of environmental changes. The common characteristics of those challenges are unpredictability, long-term and inter-generational character.

Climate changes are global challenge that floods into domain of national economies. Climate changes impact negatively on economic growth and development. They are „taxing" individuals, enterprises and states in such a way that economic resources are withdrawed in the direction of reclaiming dammages, instead in development. Inertia in climate system, but also in the behaviour of individuals and organizations is the key reason why actions have to be taken immediately.

Such actions are costly. In the medium-term, global studies estimate that the costs of mitigation/adaptation to climate changes will account more than 100 billions of dollars per year in a period up to 2050. It refers to incremental costs in respect to business-as-usual scenario. In the long-run, these costs will account around 1% of global GDP up to 2100 (World Development Report, 2010; The World Bank Group, 2010).

High costs need appropriate environment policy. The main goal of environmental policy is to internalizes negative external effects and to supply public goods. In order to realize that goal, two mechanisms can be used: market, or state intevention. Economists offer a lot of proofs that free market do not provide better environmental protection, than the state can do. Namely, customers are not willing to pay (much), and stockholders are not willing to sacrifise profits (much), to protect environment. Environmental problems can't be solved by the „free market".

State intervention is not without shortcomings, also. As much as markets aren't perfect resource allocators, governments aren't perfect planer. Two reasons exist why governments can't be perfect planers. Firstly, governments never have complete information. Secondly, governments consist of individuals, and they are subjected to lobbying, manipulation, the subtle forms of persuasion, and rent-seeking activities.

What, then, can be really expected from government? Government has to be able to define its strategic goals and vision. Such goals and vision can't be defined by market actors, because they are discredited by their own goals and are short of power of coercion. The state, also, has to secure that „rules of the game", that follow from its policies, be implemented in an impartial and fair way. Rules have to be stable and not to be changed retroactively. If government is able to fulfil these rational expectations, then state intervention will be more preferable machanism in the area of environmental policy, than the market (Hepburn, 2010).

Conventional approach to the „future“ in an economy assumes that economic growth will continue, so that people will live in greater wel-being than now. Climate changes has questioned such an approach of discounting the future. What if future generations inherit warmer climate? What if such climate become more hostile and more unpredictable? Such a scenario would require massive intervention in resource allocation in the economy and much greater role for the state. Economic borders of the state would be radically shifted.

Fundamental question that has to be resolved is whether a man-made capital can substitute a natural capital? In other words, the question is whether more factories, buildings, smartphones and automobiles can compensate the loss of biodiversity and atmosphere damage? The answer to this question seems to be negative one. Once when it is assumed that substitution effect is lower than 1, GDP growth rate become unreliable indicator. Decreasing natural capital acts as a feed-back on the ability of economy to perform, as environmental costs are rising. In the best case, growth rate is short-term indicator, while climate changes are long-term process (Helm, 2008).

The problem of capital maintenance can't be resolved by the current system of national accounts and with GDP as the basic indicator of economic growth. National income accounts are developed in the context of Keynesian demand management. If the main goal is to stabilize a business cycle, and if key problem is the level of agregate demand, then national income accounts have a full sense. Keynesian demand management is directed towards short-term and deals with the flows of production and expenses, and not with assets and amortization which are important in the medium-term and long-term.

The result is a huge shift from capital expenditures towards current expenditures; from consumption now, and against investments. From the perspective of economic sustainability, the difference is in that investments create demand and assets, while consumption create demand, but doesn,t result necessary in new assets that are created through derived demand. Borrowing for investing doesn,t necessary create net liabilities for the future generations; borrowing for consumption makes just that. Debt level is not in itself such an interesting question any more. Key problem is depth of gap between assets and liabilities (Rebecca, 2013).

Creating a national balance sheet which would contain assets such as atmosphere and biodiversity, oil and gass, etc. (and full maintenance costs of assets), would radically change understandings on the sustainability of existing economies. Sustainability criteria would show that current consumption is high, and saving is low. Saving would have to rise and to be directed into productive investments. Institutional structure of the state have to be revised in this context (Helm, 2011).

THE CONCEPT AND IMPORTANCE OF GREEN GROWTH

Economic growth is defined as a process in which workers, machines and equipment, materials and new ideas and technologies create products and services that have a value for individuals and for society as a whole. „Green growth“ is the same such process, with four new dimensions added:

- Equally importance is attached to all kinds of capital, such as: i) natural (for example, eco-systems), ii) human (education and skills), iii) physical (machines and equipment), and iv) intangible assets such as ideas and innovation.
- Natural capital has a twofold role in the process of green growth. From the one side, it supplies the most important inputs for production of which some are renewable, and some are not. From the other side, natural capital impacts on the wel-being of individuals and society in different ways: through effects that environment has on health, through supplying with eco-system services etc.
- Investments in natural capital necessarily require state intervention. The main reason for state intervention is that market incentives are week, or doesn,t exist (Protic, 2013).
- Innovations are needed to reduce compromise between the consumption of natural capital and the growth of current consumption, or investing in other kinds of capital (Krouse, 2013)

The main characteristic of green growth is recognising natural capital as a production factor, and its role in increasing wealth. GDP remains the essential indicator for the analysis of economic perfomances. It, however, doesn,t necessarily reflect changes in capital stocks, or wealth, that are the crucial determinants of present and future growth and social gains (OECD, 2011 b).

GREEN GROWTH MODELS

Green growth models are defined as business models whose product and services development has lesser negative impact on environment, than traditional business models. Green growth models reduce the use, or the loss of resources and are economic viable. The main characteristic of green growth models is innovation. Eco-innovation differ from general innovation in three ways. First, they reduce specific negative external effects. Second, eco-innovation often involve innovation in social and organizational structures. Third, successful transition towards green economy might demand high level of radical innovation, in contrast to other areas where incremental innovations are more present. Successful innovation most frequently happens in the fast growing economies with strong and dynamic demand. Market, however, is not always favourable framework for eco-innovation. Green technologies often doesn't find a way towards a market, because of social

and institutional inertia. In addition, some characteristic green growth models are exhibit and demand for their products and services is analysed.

Business models based on green products/processes. Market for these business models consists of final and intermediate buyers, especially in food industry. Such buyers show increasing conciousness and interest for buying healthy organic food which is produced in local areas. Legislation has important role in creating market for green product and processes.

Systems for waste regeneration. Waste is considered more and more as an important resource. Waste is used as a cheep input for the production of new products that are sold to customers in new markets. Firms that deals with waste regeneration often get the reputation of „green producers", that give them competitive advantage. Market for waste management based on recycling is very important and shows increasing trend. It is labour intensive sector that provides between 1,2 and 1,5 millions of jobs at the level of OECD countries. Business models based on waste regeneration systems can be very important for developing countries.

Alternative energy-based systems. Sources of renewable energy became very actual during the last 25 years. Market for alternative energy has two kinds of organizational buyers. For producers and sellers of technology, primary buyers are technological systems that produce energy. Secondary buyers are those who are buying produced energy. Firms that deals with alternative energy underline numerous specific trends that impact their market; for example, energy price volatility, risks related to water resources available in the future etc. Beside that, the market price of energy that is created from renewable sources is not often competitive in comparision to cheaper alternatives, such as fossil fuels.

Efficiency optimisation by information and communication technology. Business models based on information and communication technology solutions can be divided in two groups. The first group consist of models based on offering services such as, for example, monitoring consumption, or resource redistribution of the firms. The second group consist of models based on selling product such as bundles of software and hardware. Market demand consist of customers in the areas of energy use and water management, transportation systems etc.

Functional sales and service management models. The basic idea of these models is to offer product's functions and benefits to customers, instead of actual product itself. The simpler models offer customers the services of using ecological more superior material and technics. More developed models include payment for use product's functions, and providers take control over the use-phase of product. Demand for these models exists among organizational buyers in chemical industry.

Sustainable mobility systems. These systems are based on product sharing, or shared use by its users. Users do not own products, but have flexibile access to them, when and where needed. Examples for sustainable mobility systems are car or bicycle sharing in urban areas. Transportation sector is the main demand creator for this kind of service.

Industrial symbiosis. When traditionally separated industries adopt collective approach for geting competitive advantage, then it is about industrial symbiosis. Industrial symbiosis involves physical exchanges of materials and energy, water and by-products. The essence of industrial symbiosis is collaboration and the synergistics possibilities offered by geographic proximity.

Green neighbourhoods and cities. Green neighbourhoods and cities are urban systems whose aim is to offer high quality of life, with the minimum impact on environment. They involve minimum use of energy, water and food, waste output of heat, air, water and other pollutions. Green cities models combine a lot of eco-innovative solutions, in a range from modern designes and urban ecology to new technologies builded in innovative buildings. Market demand is created by customers from private and public sectors. These business models have a great potential in emerging economies and developing countries. China represents very important market for this business model.

Developing of green business models depend very much on state support. Government needs to create policies that will influence not only on stimulation new technologies, but also on their diffusion in the market. Government can reacts where demand for innovation is insufficient yet, or has not emerged, but where technology or product have high potential of social benefits (OECD, 2013)

INTRODUCING GREEN GROWTH INTO ECONOMY

Introducing green growth into countrie's economy is not an easy task. The main reason for that is the presence of barriers, i.e. factors that limit returns on „green" investments. For overcoming those barriers it is useful to develop diagnostic framework, showed by Figure 1.

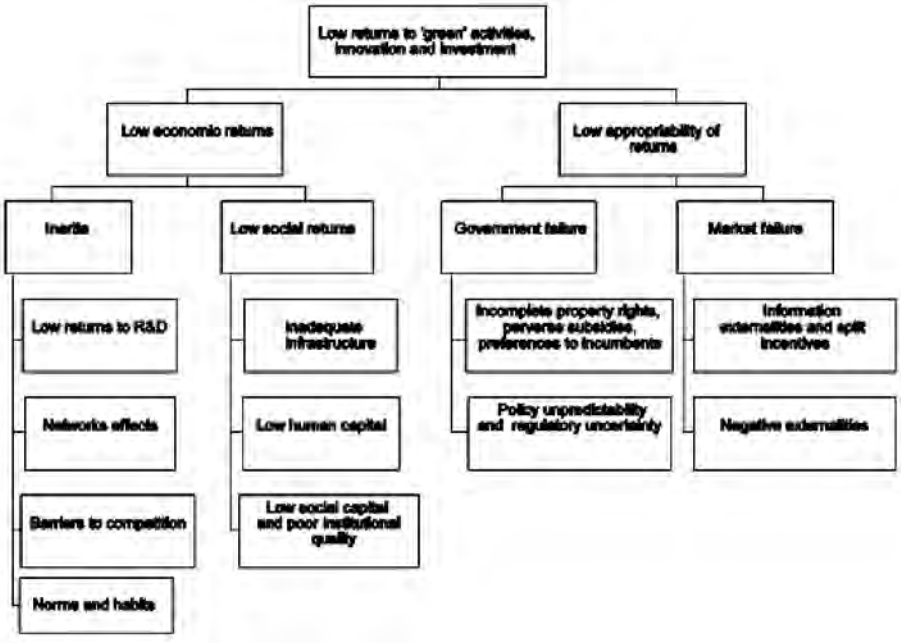

Figure 1. Green growth diagnostic

Source: OECD, 2011 a, p.6

In Figure 1, barriers to green growth can be divided in two large groups of factors. The first group of factors consists of low economic returns. The main reasons for low economic returns are inertia in economic systems and low social returns. Inertia in economic systems encompasses several important factors, such as: low returns on R&D activities, network effects, barriers to competition and norms and habits. These factors limit the expansion of new technics, technologies and consumption models. Low social returns mean that conditions that would enable raising returns from the green growth activities don't exist. Low social returns encompass factors such as: inadequate infrastucture, low human and social capital, and low quality of institutions. Common characteristic of these factors is that they reduce the choices of consumers and producers to perform green activities.

The second group of factors relates to government or/and market failure to provide all benefits to people that is offered by green growth. Examples include fossil fuel subsidies (government failure), or air pollution (negative externality, i.e. market failure).

Barriers to green growth don't have the same importance in diferent countries. It depends on the level of development achieved, social-economic context and environment policy setting (OECD, 2011 a).

National economies transition towards green growth assumes measuring progress on that way. For that purpose European Union has developed the system of indicators for measuring progress that countries members achieve in the area of green growth. The system of green growth indicators has multiple importance. It measures not only a progress that each country achieves in the area of green growth, but enables the identification of „best practise". Beside that, green growth indicators are linking easily with key macroeconomic questions. Channels by which green growth contribute to macroeconomic stability and general economic growth can be precisely established (Canton, Labat and Roodhuijzen, 2010).

Environment policy has realized in the past by the „command-and-control" method. Over recent decades, interest has grown for use market-based instruments, among which environmental taxes are of special importance. The essence of environmental taxes is in that costs of external effects are builded into prices of goods or activities that cause damage to environment. In that way negative external effects are internalised in market price. The higher costs of pollution that arise because of introducing environmental taxes, the less atractive such goods and activities for consumers and firms. In contrast to regulations or subsidies, taxes leaves customers and firms full flexibility to decide how to change their behavior and reduce harmful activity.

The other important characteristics of environmental taxes are transparency and certainty. The essence of transparency is in that it is generally clear what is taxed, which polluters are exhempt, and what the cost to polluter will be per unit of pollution generated. Certainty means that the introduction of environmental taxes is rather direct and predictable.

Tax reliefs for environmentally beneficial goods or activities are an alternative for „green taxes". Tax system can subsidize such goods or activities by VAT exemptions, or through favourable depreciation rates for capital investments in renewable energy, or pollution abatement.

Creating „green taxes" require careful consideration number of factors. Tax base should be targeted to the pollutant, or polluting behavior. General principle of taxing is that taxes should be as far as possible levied on final production, consumption and incomes. Green taxes should be applied uniformly and with few exceptions. Tax policy makers should consider the impact of green growth to low-income households and pollution-intensive businesses. Lower tax rate, or exemptions are sometimes used to limit the impact of green taxes on such groups.

Determining tax rate is also important question. Tax rate should be proportional to damage caused to environment. This principle can not easily be realized in practise. Estimating the value of some kind of damages is relatively easy; for example, damage caused by acid rain, or timber production. Estimating value of damages can be more difficult to something that does not have clear market value, such as clean air, or biodiversity. Tax rate depends also on government needs to finance public expenditures by tax revenues.

Green taxes can influence on reducing pollution in the short-term and long-term. In the short-term, firms can reduce production, and buyers can reduce consumption as a reaction to raising prices of goods caused by introducing green taxes. In the long-term, changes can be substantial. Firms can change decisions that relate to capital investments, innovation program, etc. Households can change expectations in respect to buying real estates, durable goods etc.

In practise, except for taxes on motor vehicles and motor vehicle fuels, environmental tax rates are low. Generally, tax revenues should be treated as general government revenues. These revenues can be used for financing public expenditures, reducing debt, or reducing other taxes.

In the mid of 1990. a large number of European countries undertook significant „environmental tax reforms“ to varying degrees of success. Experience tells that open, transparent communication of all elements of the plan-including the use of revenues, distributional and competitiveness effect is needed for successful implementation of environmental taxes (OECD, 2011 c).

East-European countries, Caucasus and Central Asia countries (EECCA), are going through similar transition path as Serbia. That is why the experiences of these countries can be important for our country in the implementation of green growth.

After the disintegration of the Soviet Union, these countries have had to build their own institutions. Quality of economy governance still remains problematic after twenty years of transition. The promotion of green growth in such circumstances requires clear vision and priorities in different levels of planning, including national, sectoral and local planning. Long-term government priorities are represented by the three segments of green growth in many of the EECCA countries. These are: energy efficiency, renewable energy, and sustainable agriculture.

Are the current environmental management structure sufficiently mature and efficient? Some EECCA countries have special environmental ministries. The key characteristics of these ministries are horizontal and vertical complexity and organizational instability. Horizontal complexity is mirrored in weak internal information sharing and coordination. Beside that, there are multiple autonomous or quasi-autonomous agencies that are subordinated to these ministries. Vertical complexity is mirrored in central and local authorities that operate parallelly, whose competences are overlapping, or unclear. Frequent reorganizations in environmental ministries have often resulted in long transition periods of institutional uncertainty and inaction, as well as the loss of qualified staff and institutional memory.

The green growth activism of local-level authorities has increased, especially in the cities. Projects in the areas of energetic efficiency and environment-related infrastructure development are the most interesting for the local-level authorities. Support for green growth is also growing in private sector.

Adequate access to finance and raising „green" investments are important pre-requsite for green growth in EECCA countries. The major sources of green growth financing are: public expenditures, state funds, domestic banking sector, microfinance institutions and international bilateral and multilateral financial institutions. Private sector will not have prominent role in financing green investments, at least not in the short-term perspective, unless the terms of bank financing improve.

The most important bilateral donors are Japan, Germany, and USA. Among multi-lateral donors key role is played by International Development Agency and the EU institutions. Three major multi-lateral development banks are active in the region: the European Bank for Reconstruction and Development (EBRD), the International Bank for Reconstruction and Development (IBRD), and the Asian Development Bank (ADB). The European Investment Bank has recently received a mandate to operate in the region. The World Bank also has substantial programs to improve energy efficiency (OECD, 2012).

SERBIA: COUNTRY PROFILE AND PERFOMANCES OF ENTREPRENEURSHIP ECONOMY

Serbia is middle-developed country, with average GDP per capita amounted to 6.312 of dollars in 2011. In a period 2008-2011. average real growth rates of GDP were low, or negative. Such a trend is a consequence of performing global financial and economic crisis, but unfinished transition too (Sljivić, Moreblessings and Stefanovic, 2012). Serbia is a country where rising trend of poverty exists (9,2% of population in 2011, against 6,1% in 2008).

In 2011. number of inhabitants amounted to 7,2 millions. Number of inhabitants decreases at a rate of 0,4% per year, which is mostly the consequence of negative natural increase in the population. More than 50% of inhabitants live in urban areas. Life expectancy at birth amount to around 75 years.

Countrie's economic structure is very unfavourable. Services take part with two thirds in GDP, while agriculture and industry take part with the remaining one third. Economic structure has not signifficantly altered in observed period. Foreign direct investments amounted to 2,7 billions of dollars in 2011. Because of global crisis and unfavourable investment climate, foreign direct investment declined in 2009. and 2010. Similar declining trend is recorded by net official aid (Table 1).

Table 1. Serbia: socio-economic indicators

Socio-economic indicators				
	2008	2009	2010	2011
Income and poverty				
GDP per capita, current USD	6.498	5.484	5.270	6.312
GDP per capita growth, annual %	3,8	(3,5)	1,0	2,0
Poverty headcount ratio at national poverty line (% of population)	6,1	6,9	9,2	
Demography and health				
Population (million inhabitants)	7.350.221	7.320.807	7.291.436	7.258.745
Population growth (%)	(0,4)	(0,4)	(0,4)	(0,4)
Urban population (%)	55	56	56	56
Mortality rate, under 5 (per 1000 live births)	8	8	7	7
Life expectancy at birth, years	74	74	74	75
Economic structure (as % of GDP)				
Agriculture	11	10	9	9
Industry	28	28	27	27
Services	61	62	64	64
Financial flows				
FDI, net inflows (BoP, current $, 000)	2.996.385	1.935.602	1.340.195	2.700.435
Net ODA (% of GNI)	2,1	1,6	1,8	1,3

Source: The World Bank development indicators database

Good governance is important for the implementation of green growth in each country, and Serbia too. Governance can be defined as a juncture of tradition and institutions by which power is performed in one country. Worldwide Governmental Indicators (WGI), represents important instrument to explore governance in more than 200 countries worldwide, during more than decade.

WGI captures six dimensions of governance Voice and accountability capture the extent to which citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association and freedom of media. Political stability and absence of violence/terrorism capture the likelihood that the government will be destabilized by unconstitutional or violence means, including terrorism. Government effectiveness means the quality of public services, the capacity of civil service and its independence from political pressures and the quality of policy formulation. Regulatory quality means the ability of the government to provide sound policies and regulations that enable and promote private sector development. Rule of law means the extent to which actors have confidence in the rules of society, including the quality of contract enforcement and property rights, the police and the courts, as well as the likelihood of crime and violence. Control of corruption means the extent to which public power is

exercised for private gain. It includes small and big forms of corruption, as well as "capturing" of the state by elites and private interests (Governance metters 2009). Table 2 contains indicators of governance quality in Serbia in all six dimensions in a period 2008-2011. Columns in Table 2 represents Serbia,s rank in comparison with all countries in the world, by each dimension of governance. Rank is expressed as a percentile, where 0 is the lowest rank, and 100 is the highest rank. Serbia is positioned in the middle of the world,s scale in respect to governance quality. Political stability and rule of law are the worst ranked dimensions of governance. Declining trend is recorded in government effectiveness.

Table 2. Serbia: governance quality

Governance quality	2009	2010	2011	Trend
	Percentile rank (0-100)			
Voice and accountability	56,9	55,9	56,3	▬
Political stability and absence of violence	28,4	31,1	35,4	▲
Government effectiveness	51,7	51,7	49,8	▼
Regulatory quality	49,3	52,6	53,1	▲
Rule of law	42,2	43,1	46,5	▲
Control of corruption	50,7	49,3	55,0	▲

Source: The World Bank group, Worldwide governance indicators

Serbia is greater consumer, than the producer of energy. Deficit in production is compensated by imports. Energy import makes around one third of energy consumption. Serbia has no nuclear energy, while alternative energy takes part with around 7% of total energy consumption. Gas emission from energy consumption makes around 50% of total emissions (Table 3).

Table 3. Serbia: energy and environment

Energy and environment	2008	2009	2010	2011
Energy production (kt of oil equivalent)	10.792	10.248	10.595	...
Energy use (kt of oil equivalent)	16.866	15.244	15.611	...
Energy imports, net (% of energy use)	36	33	32	...
Alternative and nuclear energy (% of total use)	5,2	6,3	6,9	...
Energy related emissions (% of total)	45,7		47,5	...

Source: The World Bank development indicators database

The level of technological development is represented by several indicators in Table 4. Access to Internet has less than the half of population in Serbia. Number of mobile cellular subscribers is greater than the number of inhabitants. Number of people that are engaged in R&D activities is very small, around 1.000 per million people. R&D expenditures are less than 1% GDP, while data for 2010. and 2011. are not available.

Table 4. Serbia: technological development

Technological development				
	2008	2009	2010	2011
Number of Internet users (per 100 people)	36	38	41	42
Mobile cellular subscribers (per 100 people)	119	122	122	125
Researches in R&D (per million people)	1014	1060	…	…
Research and development expenditure (% of GDP)	0,38	0,92	...	...

Source: The World Bank development indicators database

Entrepreneurship in Serbia faces numerous problems in doing business. Disturbed long-term financial safety is one of the most important problems. Entrepreneurs do not possess own net working capital, because investments in fixed assets are greater than own capital deducted for the losses. Shortage of assets for financing fixed assets is compensated by long-term liabilities, specially bank credits. Neither one dinar of inventories is not covered by own net working capital, while total net working capital is sufficient to finance only 3-6% of current assets. Financing current reproduction of entrepreneurship sector is almost in the whole in the hands of external creditors (Table 5 and Figure 2).

Table 5. Net working capital of entrepreneurship sector in a period 2008-2011.

000 dinars

	Positions	2008	2009	2010	2011
1	Capital	22.702.677	21.866.003	23.193.449	24.686.784
2	Cumulated losses	2.625.716	3.197.303	3.608.780	3.692.505
3	Net capital (2-1)	20.076.961	18.668.700	19.584.669	20.994.279
4	Fixed assets	24.957.936	24.942.005	25.725.888	26.155.829
5	Own net working capital (3-4)	-4.880.975	-6.273.305	-6.141.219	-5.161.550
6	Long-term provisions and liabilities	8.645.777	8.373.445	8.379.678	7.626.913
7	Net working capital (5+6)	3.764.802	2.100.140	2.238.459	2.465.363
8	Inventories	30.558.142	29.202.690	31.207.643	32.110.226
9	Excess (deficiency) NWC (7-8)	-26.793.340	-27.102.550	-28.969.184	-29.644.863
10	Own NWC /Inventories	-0,16	-0,21	-0,20	-0,16
11	NWC /Current assets	0,06	0,03	0,03	0,04

Source: Agency for business registers of the Republic of Serbia, 2012, and other issues, calculated by the author

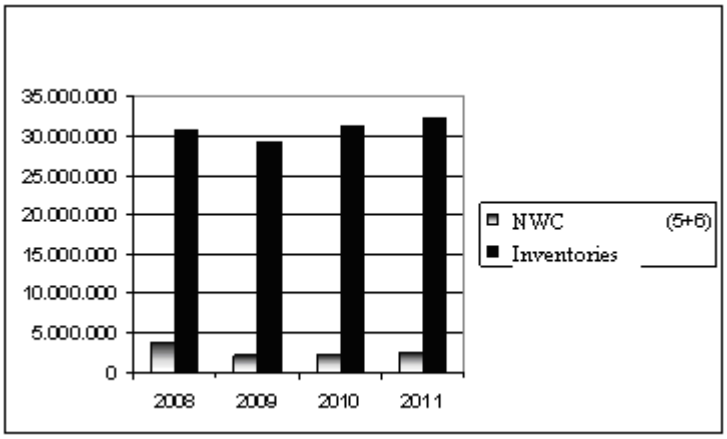

Figure 2. Covering inventories with net working capital

Source: Author

Profitability indicators of entrepreneurship sector are exhibit in Table 6 and Figure 3a/b. The first group consist of revenue profitability indicators. The second group consist of profitability indicators of assets and capital.

Table 6. Ratio indicators of profitability in a period 2008-2011.

	2008	2009	2010	2011
Ratio analysis of revenue profitability				
Net operating income rate	3,20%	2,80%	2,30%	2,44%
Net profit margin ratio	1,70%	1,10%	0,89%	1,44%
Gross profit margin ratio	3,30%	3,00%	2,36%	2,66%
Ratio analysis of assets and capital profitability				
Return on Assets (ROA)	7,39%	6,22%	4,85%	5,56%
Return on Capital (ROE)	15,69%	10,30%	8,48%	13,58%

Source: Author

Net operating income rate shows profitability that entrepreneurs achieve in respect to their core business, i.e. dealing with the production and sale of products and services. Net operating income rate is exceptionally low in a whole observed period. This rate accounts from 2,30% (2010), to 3,20% (2008). It practically means that entrepreneurs have accounted net operating income from 2,3 dinars to 3,2 dinars for every 100 dinars of realized revenues from selling on the market. According to these indicators, entrepreneurship sector has no enough financial strength to carry on significantly higher level of indebtedness.

Net profit margin ratio tells more accurately on profitability. This ratio shows which part of revenues from sales finally finds out a way to their owners. Values of this ratio in Table 6 are positive, but do not excede 2% in a whole observed period.

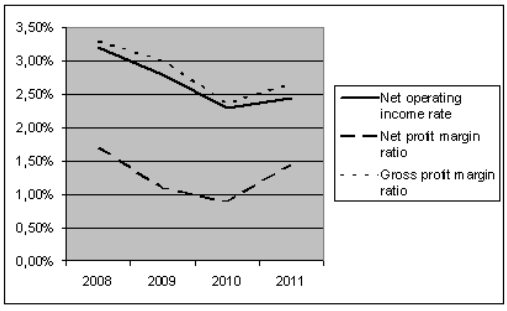

Figure 3a. Ratio analysis of revenue profitability

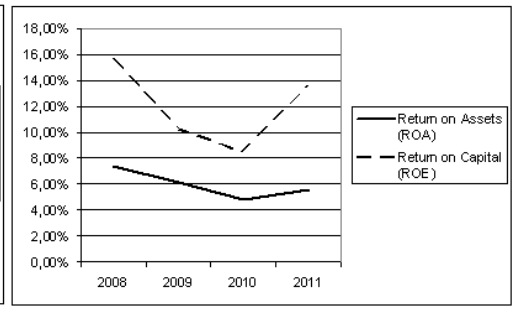

Figure 3b. Ratio analysis of assets and capital profitability

Source: Author

The fact is that entrepreneurship sector is forced to finance their property partly from liabilities. Consequently, profit or net income which entrepreneurs realize must be divided between them and the creditors. When profit margin is calculating, it is reasonable to increase net income for interest costs. In such a way it is arrived to another profitability ratio called gross profit

margin. In Table 6, gross profit margin is larger than net profit margin and

accounts from 2,36% (2010), to 3,30% (2008). Ratios of revenue profitability are needed, but unsufficient condition for the profitability assessment of entrepreneurship sector. This is because these ratios ignore the extent of capital needed to be engaged in creating revenues.

That's why analysis is supplemented with the profitability ratios of assets and capital. The most frequently used ratios are return on assets (ROA), and return on equity (ROE). In Table 6, ROA has the highest value of 7,39% in the beginning year of 2008. During the next two years ROA declined, followed by its modest growth in 2011.

Return on equity (ROE), shows the part of return in invested capital which belongs to the owners of enterprises. Generally, entrepreneurship sector can be satisfied with the fact that there exist positive financial leverage. Namely, return on equity exceeds return on assets in the whole of observed years. The highest value ROE of 15,69% is achieved in the beginning year of 2008. Value of this indicator declined during the next two years, followed by its recovery in 2011.

CONCLUSION

Sustainable development is the function of economic proportions and maintenance of natural capital. In the short-term, economic proportions are important. Investments, savings, consumption, foreign exchanges-if not adjusted-can create economic crises. In the long-run, natural capital is important. Natural capital depreciation is not valued at full costs, including maintenance costs. Unreal prices cause unrational consumption. Unrational consumption bring to environmental changes, that reflect as a feed-back to growing costs of economic development.

Market is a good regulator of economic proportions, but is not successful in natural capital maintenance. Market deals with the private interests of buyers and sellers, and do not possesses the power of coercion. State, by definition, deals with the general interests of society and possesses the power of coercion. Consequently, state should take over the concern for natural capital and sustainable development. Economic borders of the state are necessary moving towards creating conditions for green growth.

OECD and EU countries have done important steps in that direction. The result is seen in establishing and performing different green business models, from healthy food production and waste regeneration, to industrial symbiosis and green

cities. Innovation is the common characteristic of all models. Fast growing markets and demand are major incentives for innovation in these countries. Entrepreneurs are the key holders of the green growth models.

Transition towards green growth is not an easy task. One of the important steps is that each country identifies key barriers to green growth. Green growth diagnostics point to the two main groups of barriers. The

firstgroup of factors consist of low economic returns. The second group of factors relates on government or/and market failure to provide benefits to people, that is offered by green growth.

Tax system is important for the promotion of green growth. Environmental taxes enables negative external effects to be internalised in market price. Tax reliefs for environmentally beneficial goods or activities are an alternative for „green taxes". These revenues can be used for financing public expenditures, reducing debt, or reducing other taxes.

Serbia is middle-developed country with outstanding problems of poverty, demography development and economic structure. Simple logic would require not to think about another transition (green growth), in the conditions of one unfinished transition (economic). However, there are enough motives for meditation. Green growth would enable Serbia to improve deficits in energetic balance and foreign trade. For that purpose, green growth models based on alternative energy and energetic efficiency would be the most appropriate to entrepreneurs. Large percent of Serbian population lives in rural areas, so models based on healthy food production are interesting for that reason. Waste regeneration systems are attractive because of low input costs (row materials and working force). At last, models based on green cities are appropriate to entrepreneurs in construction, that represent traditional export industry.

What barriers stand on the road of green growth implementation in Serbia? The answer to this question results from green growth diagnostic (Figure 1 in this paper), and from data on Serbia's profile. Small number of researches and modest budget expenditures for research and development, show on the factor of inertia. Relatively modest inflow of foreign direct investitions indirectly leads to the conclusion that inadequate infrastructure is another important barrier. Growing poverty show on barrier of low social capital and low quality of institutions. Poor management-especially dimensions such as political stability and rule of law-show on barrier of (economic) policy unpredictability and regulatory uncertainty. Financial perfomances of entrepreneurship sector tell about aditional barrier to green growth. It is the dependancy of this sector to external sources of financing.

List of barriers is not finite, but indicative. Green growth is a chance for entrepreneurship sector in Serbia, but present barriers reduce that chance to modest possibilities. A gap between chances and possibilities is an area for more active role of Government of the Republic of Serbia. Government has to decide which of proposed green growth models should become development priority. Criteria for such decision could be: export potential, input costs, employment, innovation capacity of entrepreneurs, and barriers for entry/exit from business. In that way, Serbia can get small but financial healthy and long-term sustainable segment of green economy.

REFERENCES

[1] Canton J., Labat A. and Roodhuijzen A. (2010), „An indicator-based assessment framework to identify country-specific challenges towards green growth“, Economic papers 401

[2] Helm, D.(2011), „The sustainable borders of the state“, Oxford Review of economic policy, volume 27, number 4, pp. 517-535

[3] Helm, D. (2008), „Climate-change policy: why has so little been achieved?“, Oxford Review of Economic Policy, Volume 24, Number 2, pp.211-238

[4] Hepburn, C.(2010), „Environmental policy, government, and the market“, Oxford Review of Economic Policy, Volume 26, Number 2, pp. 117-136

[5] Krouse. H: Organization culture and entrepreneurship, International Review (2012 No.3-4), pp. 27. ISSN 2217-9739, COBISS.SR-ID 192516620

[6] Protic M : Managing the Impact of Climate Changes in Serbia-case study, International Review (2013 No.1-2) ISSN 2217-9739, pp. 128. COBISS.SR-ID 192516620

[7] Rebecca Milos: Effect of Firm Organizational Structure and Management Style on Business Success: An evidence of Nike Inc., International Review (2013 No.1-2) ISSN 2217-9739, pp. 89. COBISS.SR-ID 192516620

[8] Sljivić S., Moreblessings S. and Stefanovic S. (2012), „Entrepreneurship: a Necessity or Opportunity in Transitional Serbia?”, Employment, Education, and Entrepreneurship, Faculty of Business Economics and Entrepreneurship, Belgrade, Vol.3, pp.17-34

[9] Agencija za privredne registre Republike Srbije (2012), Saopštenje o poslovanju privrede u Republici Srbiji u 2011. godini, Beograd

[10] Governance metters 2009, www.govindicators.org

[11] OECD (2013), „Why new business models matter for green growth?“, Green Growth Papers 2013-01, OECD Publishing, Paris

[12] OECD (2012), „Green growth and environmental governance in Eastern Europe, Caucasus, and Central Asia“ Green Growth Papers 2012-02, OECD Publishing, Paris

[13] OECD (2011 a), Tools for delivering on green growth, OECD Publishing, Paris

[14] OECD (2011 b), Towards green growth, OECD Publishing, Paris

[15] OECD (2011 c), „Environmental taxation: a guide for policy makers“, Better policies for better lives, OECD Publishing, Paris

[16] The World Bank Group (2010), The Cost to Developing Countries of Adopting to climate change

[17] The World Bank group (2012), Worldwide governance indicators, www.worldbank.org/governance/WGI/index.asp

[18] The World Bank development indicators database, www.worldbank.org

[19] World development Report (2010), Development and climate change

NEW TECHNOLOGIES, GREEN GROWTH AND JOBS

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Abstract: Global climate change, market forces and government policy present opportunities and challenges for regions. As discussed in this paper, the transition to a low-carbon economy and its implications for local labour markets requires a multi-dimensional analysis that goes beyond traditional sectoral thinking. It can also be seen through the multiplicity of possible approaches that can be taken when designing public action strategies to manage the transition and enable green growth. The aim of this Paper is to present related literature and framework for the green growth, green jobs as new green employment opportunities in the time of new technologies. This paper discusses some of the impacts of new technologies and climate change including labour market issues, the dynamics of green growth at the level of jobs and skills development, and the implications for enabling green growth. As the impacts of climate change - and especially the subsequent mitigation and adaptation policies - on labour markets are still largely unknown despite the recent demand for knowledge production and diffusion on this topic and the increasing avalanche of reports and studies from public, private and not-for-profit organizations, this work supports research on sources of green growth through channels as productivity, innovation, new markets, confidence, stability, resource bottlenecks and imbalances. The search for alternative models of growth in the midst of the financial crisis has further to increase the interest in the green growth and jobs and what it means for a rich-jobs recovery.

Key words: New Technologies, Green Growth, Green Employment

JEL classification: M15, Q52

UDC 502.132; 004; 331.5

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INTRODUCTION

In the 20th century the world population grew 4 times, economic output 22 times and fossil fuel consumption 14 times (UNEP, 2011). The resilience of a wide range of environmental systems is now being tested by the requirements of a rapidly growing global population and increased levels of economic activity. This includes meeting the energy and food needs of 9 billion people in 2050. Water supplies are coming under increasing pressure and, without new policy action a further 1 billion people are expected to live in severe water-stressed areas by 2030 (Figure 1-4).

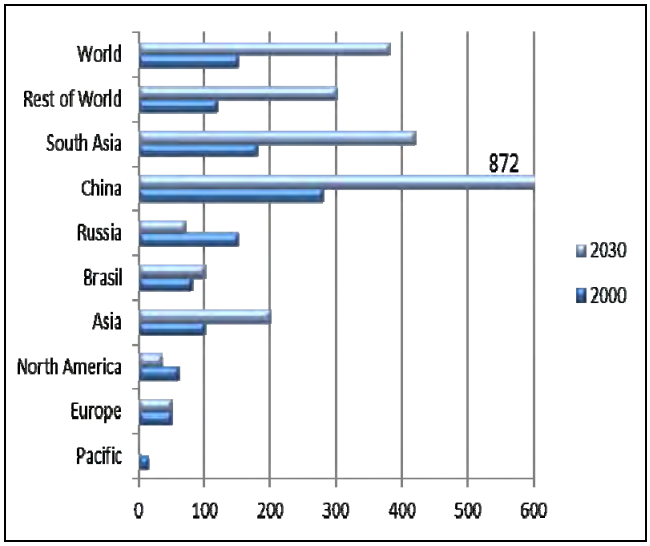

Figure 1: Premature deaths from PM10 air pollution (per million inhabitants)

Source: Source: OECD , Environmental Outlook to 2030, and OECD (2009), The Economics of Climate Change Mitigation: Policies and Options for Global Action

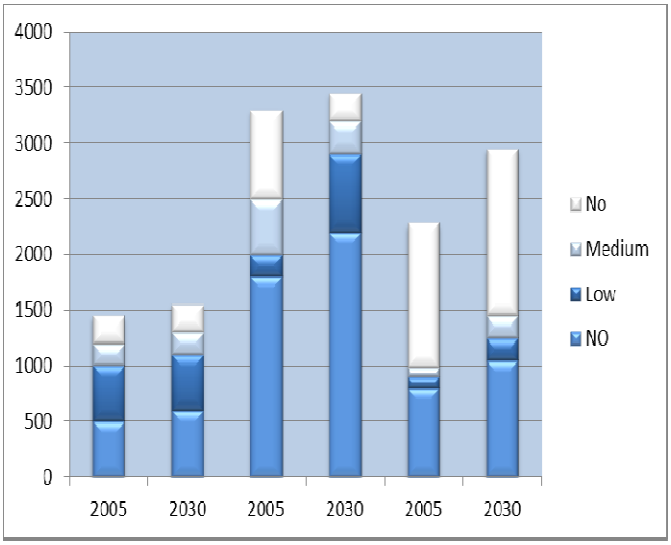

Figure 2: People living under severe water stress (millions)

Source: OECD , Environmental Outlook to 2030, and OECD (2009), The Economics of Climate Change Mitigation: Policies and Options for Global Action

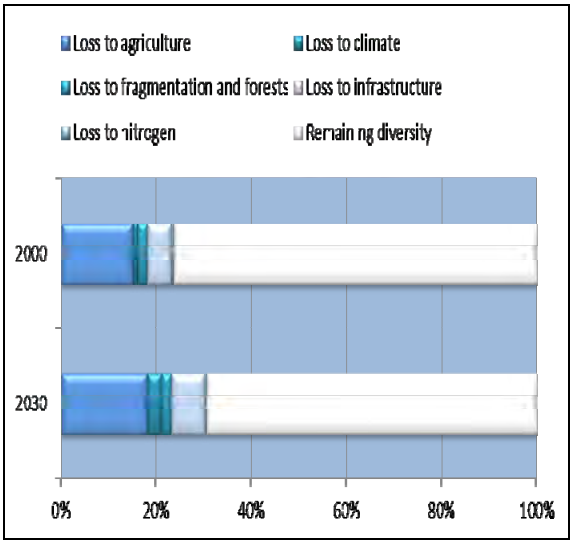

Figure 3: World threats to biodiversity (percent)

Source: OECD , Environmental Outlook to 2030, and OECD (2009), The Economics of Climate Change Mitigation: Policies and Options for Global Action

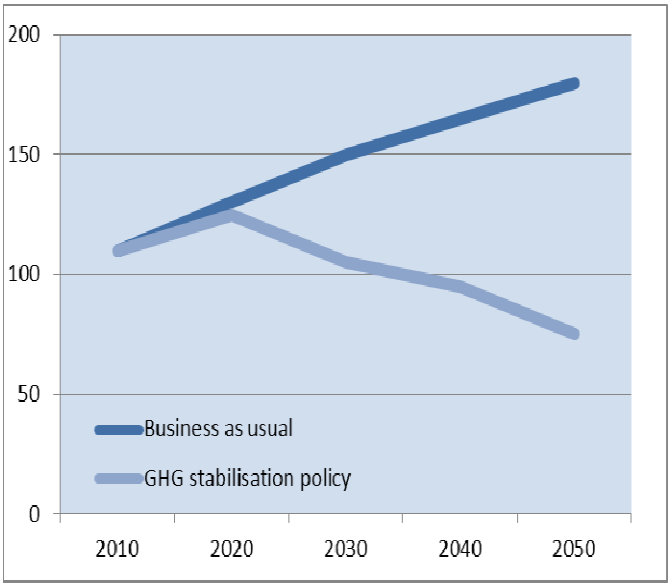

Figure 4: World's greenhouse gas emission (2005=100)Gap in 2050 =63%

Source: OECD , Environmental Outlook to 2030, and OECD (2009), The Economics of Climate Change Mitigation: Policies and Options for Global Action

The world economy is slowly, and unevenly, coming out of the worst crisis most of us have ever known. While dealing with immediate problems such as high unemployment, inflationary pressures or fiscal deficits, we have to look to the future and devise new ways of ensuring that the growth and progress we have come to take for granted are assured in the years to come, overcoming the increased water scarcity, resource bottlenecks, air and water pollution, climate change and biodiversity loss which would be irreversible. Thus the world faces twin challenges: expanding economic opportunities for a growing global population, and addressing environmental pressures that, if left unaddressed, could undermine the ability to seize these opportunities. Green growth is where these two challenges meet and about exploiting the opportunities which lie within. It is about fostering economic growth and development while ensuring that natural assets continue to provide the resources and environmental serviceson which our well-being relies. It is also about fostering investment and innovation which will underpin sustained growth and give rise to new economic opportunities(Knezevic et al., 2013).Green growth strategies are needed because:

- The impacts of economic activity on environmental systems are creating imbalances which areputting economic growth and development at risk. Increased efforts to address climate changeand biodiversity loss are needed to address these risks;

- Natural capital, encompassing natural resource stocks, land and ecosystems, is oftenundervalued and mismanaged. This imposes costs to the economy and human well-being, (Protic, 2013);
- The absence of coherent strategies to deal with these issues creates uncertainty, inhibitsinvestment and innovation, and can thus slow economic growth and development.

Current analysis focuses on how to strengthen competitiveness and increase both the quantity and quality of jobs while protecting the environment. Collaborative approaches involving the social partners, public authorities, education and training providers, non-government organizations and other actors are of particular interest.

The key question that will need to be addressed is how climate change and more specifically, climate change regulatory measures, will affect labour markets, workforces and social actors at the local level (Potts, 2010). However, the dynamics of green employment are largely unknown and further in-depth work is needed to guide policy making. For example, adapting labour markets to move towards achieving more jobs and better quality jobs in a low-carbon economy requires the strengthening of education and training systems as well as supporting skills development activities, both at the industry and public sector levels (OECD, 2010a).

There is now a virtual avalanche of reports by international agencies, governments, businesses, labour unions, environmental groups, and consultancies on the technical and economic implications of climate change as well as the consequences of mitigation and adaptation strategies. Many declaim a future of green jobs – but few present specifics. This is no accident. There are still huge gaps in our knowledge and available data, especially as they pertain to the developing world. (UNEP, ILO, ITUC, IOE 2008a, p. 3)

The economic restructuring brought about by combating climate change will require significant policy and regulatory intervention in order to minimize the risks and maximize the opportunities as market forces alone will not be able to provide a platform for change. As a result, policy makers face a two-fold challenge: managing transition and enabling green growth. Transition assistance will be of particular importance for regions with high concentrations of high emission producing-industries – as has already been expressed by trade union federations – and will require adopting active labour market and social protection programmes and policies.

Changing current patterns of growth, consumer habits, technology, and infrastructure is a long-term project, and we will have to live with the consequences of past decisions for a long time. This “path dependency” is likely to intensify systemic environmental risks even if we were to get policy settings right relatively swiftly.

The modern economy was created thanks to innovation and thrives on it, and in turn the economy encourages new ways of doing things and the invention of new products. That will continue to be the case. Non-technological changes and

innovation such as new business models, work patterns, city planning or transportation arrangements will also be instrumental in driving green growth.

Greening the growth path of an economy depends on policy and institutional settings, level of development, resource endowments and particular environmental pressure points. Advanced, emerging, and developing countries will face different challenges and opportunities, as will countries with differing economic and political circumstances (Kastratovic, 2013).

Green growth strategies need to pay specific attention to many of the social issues and equity concerns that can arise as a direct result of greening the economy – both at the national and international level. This is essential for successful implementation of green growth policies. Strategies should be implemented in parallel with initiatives centering on the broader social pillar of sustainable development. The Strategy develops an actionable policy framework that is designed to be flexible enough to be tailored to differing national circumstances and stages of development. In partnership with initiatives by other international organizations, including UNEP, UNESCAP and the World Bank, OECD green growth work has been planned to contribute to the objectives of Rio+20.

This paper is divided into sections, first on green growth, green jobs looking into the impacts of climate change on labour markets, the subsequent section discusses the dynamics of green growth for greening jobs and skills, this is followed by a discussion on local policy implications for managing and enabling green growth and the last section offers some concluding thoughts.

THERETICAL FRAMEWORK

In the broadest sense, *environmental technological change is addressed in literature* on trade and the environment. There, economists decompose the effect of international trade on environmental quality in developing countries into some components:

- Scale effects which account for increased pollution levels due to the greater wealth and increased economic activity that follows international trade;
- Composition effects which refer to reductions in pollution resulting from a preference for cleaner goods that develops as countries become richer;
- Technique effects which refer to emission reductions that occur because trade expands access to cleaner technologies (Esty, 2001).

Attempts to identify this technique effect can be seen as examples of technology transfer considering the interaction of scale and technique effects in a simulation of increased science and technology capabilities and energy use. They note that improving these capabilities has two offsetting effects: while technological development can lead to the use of cleaner technologies (the

technique effect), increases in science and technology also lead to larger energy intensive industries (the scale effect). Khanna and Zilberman (2001) illustrate the importance of trade to diffusion in a study of the adoption of energy efficient technologies at electric power plants. As is typical in adoption models, variations in the adoption of these technologies occur due to differences across heterogeneous plants. Emissions could be reduced by the adoption of high quality coal. However, such coal would need to be imported. These authors found also, that while an emissions tax is necessary to achieve optimal levels of abatement, simply removing domestic and trade policy distortions would increase adoption of energy efficient technology and potentially decrease carbon emissions. Thus, policies designed to protect specific sectors may have unintended consequences that increase environmental harm, raising political challenges to achieving green growth. Dechezleprêtre et al., (2011) provide a detailed look at technology transfer coming from the Clean Development Mechanism (CDM). The CDM allows polluters in industrialized countries with emission constraints to receive credit for financing projects that reduce emissions in developing countries, which do not face emission constraints under the Kyoto Protocol. this author has determined how many projects transfer "hardware", such as equipment or machinery, as opposed to "software", which they define as knowledge, skills, or know-how. Spillovers of software exemplify disembodied technology transfer, (of these projects, 57 transfer 19 provide a description of the Clean Development Mechanism).

Several recent studies explore the role of technology transfer, both through joint ventures with multinational firms and supported by policy, in the development of renewable energy industries in developing countries. Lewis (2007) explores the development of the wind energy , where the combination of local energy policy that created demand for wind energy and efforts of the leading local firms to gain new skills were important. He also provides examples of the potential constraints faced by developing countries when the promote technology transfer. De la Tour, Arnaud, MatthieuGlachant and YannMénière (2011), provide a similar analysis of the development of the photovoltaic (PV) industry. This industry primarily serves international demand, as 98 percent of output is exported. Extending beyond the BRICs nations, Pueyo et al. (2011) examine the role of technology transfer in the development of the wind industry in Chile.

Basic concepts of green growth and jobs based on new technologies are connected with saving, how much of production is saved for the future, rather than being consumed now. Genuine saving is a comprehensive measure of saving, which includes depletion of environmental resources. Dasgupta and Maler (2000) , Hamilton and Withagen (2007) show that there is a general rule for sustainability: ensure that genuine saving is positive and not growing faster than the rate of interest.

DEFINITION

Green growth means fostering economic growth and development while ensuring that natural assetscontinue to provide the resources and environmental services on which our well-being relies. To do thisit must catalyse investment and innovation which will underpin sustained growth and give rise to neweconomic opportunities.

Green Jobs can be defined as**:** Jobs are green when they help reducing negative environmental impact, ultimately leading to environmentally, economically and socially sustainable enterprises and economies. Green Jobs are jobs that:reduce consumption of energy and raw materials, limit Green House Gas emissions, minimize waste and pollution and protect and restore ecosystems.

In current policy literature there is a tendency to use the concept of "green jobs" as a "one-size-fits-all" encompassing notion that covers any job that contributes to improving environmental quality. However, if looked at more closely, it becomes evident that the term is loosely defined which can eventually lead to misconceptions and overly optimistic calculations of the economic and employment growth opportunities created by climate change regulation. Local policy makers will need to better understand what a green job really is before they can design and implement policies and programmes aimed at supporting their growth. However, "green job" is a fuzzy term that needs to be unpacked into a framework of "pure green" and "steps of green". *The shades of green and the "green equilibrium"*.Most definitions used today in the academic literature and public policy define green jobs as any job that helps to go from point A to point B of the stairway. For the purposes of this paper, green jobs are defined as jobs that contribute to protecting the environment and reducing the harmful effects human activity has on it (mitigation), or to helping to better cope with current climate change conditions (adaptation). Below are some of the definitions currently used to describe "green jobs" or "green-collar jobs":

- UNEP and ILO: Green jobs are defined as work in agricultural, manufacturing, research and development (R&D), administrative, and service activities that contribute substantially to preserving or restoring environmental quality. Specifically, but not exclusively, this includes jobs that help to protect ecosystems and biodiversity; reduce energy, materials, and water consumption through high-efficiency strategies; de-carbonize the economy; and minimize or altogether avoid generation of all forms of waste and pollution (UNEP, ILO, ITUC, IOE, 2008a, p. 3).
- Apollo-Alliance: Green-collar jobs are well-paid career track jobs that contribute directly to preserving or enhancing environmental quality. Like traditional blue-collar jobs, green-collar jobs range from low-skill, entry-level positions to high-skill, higher-paid jobs, and include opportunities for advancement in both skills and wages (Apollo-Alliance, 2008, p. 3).

- The Michigan Department of Energy, Labour and Economic Growth: Green jobs are jobs directly involved in generating or supporting a firm‘s green related products or services. The state‘s green economy is defined as being comprised of industries that provide products or services in five areas: agriculture and natural resource conservation, clean transportation, increased energy efficiency, pollution prevention or environmental cleanup and, renewable energy production (Michigan Department of Energy, Labour and Economic Growth, 2009, p. 4).
- US White House Task Force on the Middle Class: Green jobs involve some tasks associated with improving the environment, including reducing carbon emissions and creating and/or using energy more efficiently; they provide a sustainable family wage, health and retirement benefits, and decent working conditions; and they should be available to diverse workers from across the spectrum of race, gender and ethnicity (United States Department of Labour, 2009, p. 2).

According to these definitions, green jobs span a wide array of skills, educational backgrounds, occupational models, and can be found at any point on the supply chain of what are considered to be green firms or businesses. As a result, green jobs ―come in a variety of shades as some are more far-reaching and transformational than others‖ when it comes to the environmental benefit they provide (UNEP, ILO, ITUC, IOE, 2008a, p. 4). The reference point located at the top of the stairway is what the UNEP and ILO describe as "green utopia" which refers to ―an ideal state of affairs in which the economy ―does not generate pollution or waste and is hyper-efficient in its use of energy, water, and materials‖ (UNEP, ILO, ITUC, IOE, 2008a, pg. 35). "Green utopia" could be considered as the long-term objective of all society‘s efforts to move towards a "green economy" but not a situation that can be achieved without transition. (Figure 1).

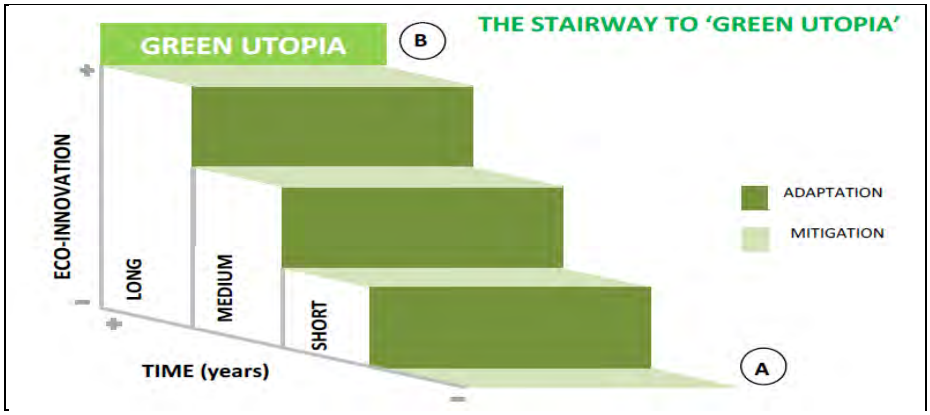

Figure 5: Dynamics of Green Growth

Source: Martinez-Fernandez, Hinojosa & Miranda (2010) Greening Jobs and Skills: the local labour market implications of addressing climate change, working document LEED OECD.

Reaching "green utopia" will require implementing both mitigation and adaptation strategies and actions (Patts, Reckien*et al.*, 2010). As shown by each of the stepping stones on the stairway, bridging the gap from point A to point B of the stairway is not possible unless both of these dimensions are taken into account. As stated by the OECD, ―mitigation includes all measures taken to reduce negative impacts of human activities on the environment and is achieved by reducing both the energy intensity of GDP and the carbon intensity of energy used‖ (OECD, 2008a, p. 11). Adaptation on the other hand ―consists in deliberate actions undertaken to reduce the adverse consequences (of climate change) as well as to harness any beneficial opportunities‖ (OECD, 2008b, p. 1). Adaptation is now widely recognized as an equally important and complementary response in addressing climate change as mitigation (OECD, 2008b). The "green" label is therefore applicable to sectors, firms or jobs who contribute to both mitigation and adaptation efforts. As discussed earlier, labour markets will be affected by climate change, directly and indirectly and labour market dynamics are not the exception to this rule. To attain green utopia, they will also have to adopt mitigation and adaptation strategies in order to facilitate the transition to a greener economy and to ensure that jobs are maintained or created with a ―green‖ label. There is one underlying element without which the climb to "green utopia" would not be possible. Eco-innovation is the process that allows organizations and industries to gradually improve the standards of efficiency and thus, to reduce society‘s footprint on the environment. The OECD defines innovation as ―the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations‖ (OECD, 2009a, p. 2). Eco-innovation is generally the same as other types of innovation except for two key distinctions: it represents innovation that results in a reduction of environmental impact, no matter whether that effect is intended or not; and its scope may go beyond the conventional organizational boundaries of the innovating organization and involve broader social arrangements that trigger changes in existing socio-cultural norms and institutional structures (OECD, 2009a).

Recognizing the fact that there is a lack of a standard definition of “green jobs”, in conjunction with the Department of Environment and Climate Change and the Environment Institute of Australia & New Zealand developed a definition and taxonomy of green jobs adapted to the economic and institutional context of these countries (Connection Research, 2009). The “Who are the green collar workers?” report takes into account several criteria to define green jobs including: industry, occupation and the environmental or sustainable dimension of the position. As a result, the report offers a two-part definition of green jobs which include:

1. Managers, professionals and technicians who work in green organizations or who have green skills and responsibilities within other organizations that may not be considered as green; and
2. Services, clerical, sales and semi-skilled workers who work in green organizations. The question remains as to what can be considered to be a "green organization”.

TECHNOLOGY AND ENVIRONMENTAL POLICIES

Both technology and environmental policies play a role promoting green technologies. Environmental policies create demand for green technologies. However, without technology policy in place, insufficient incentives exist for creating and diffusing new technologies. While there is a large literature demonstrating the need for both policies in developed country settings (Popp, 2010), the appropriate balance of environmental and technology policies within developing countries has not received similar attention. However, within developing countries, the focus will be on technology transfer and adaptive R&D, rather than on the creation of new green technologies. Thus, the relative importance of environmental and technology policies may differ in a developing country setting. Moreover, even within developed countries, there is still debate whether it is sufficient to use broad technology policies that correct market failures for all innovations, or whether targeted policies, such as product-specific R&D subsidies or tax credits, are needed.The appropriate role for intellectual property rights for green innovations provides one example where additional research is needed.

While IPR will encourage innovation, it also slows diffusion once innovations exist. For developing countries whose interests are diffusion, rather than the creation, of technology, weaker patent rights may appear to be a panacea. However, empirical evidence to support recent calls for weaker IPR for green technologies is lacking. To date, there has been little work directly studying the effect of intellectual property rights on technology transfer of eco-innovations. Hall and Helmers (2010) provide an extensive review of the literature on patent protection. While they find evidence that stronger IPR encourages innovation in general, this effect is strongest in chemical-related sectors such as pharmaceuticals.

Regarding technology transfer, they cite the work by Copenhagen Economics (2009), as well as by Barton (2007), that suggests developing country policies such as tariffs on renewable energy technology and subsidies for fossil fuels do more to limit technology transfer of clean technologies than do IPR. IPR does seem to encourage technology transfer to middle income countries with the appropriate absorptive capacity.

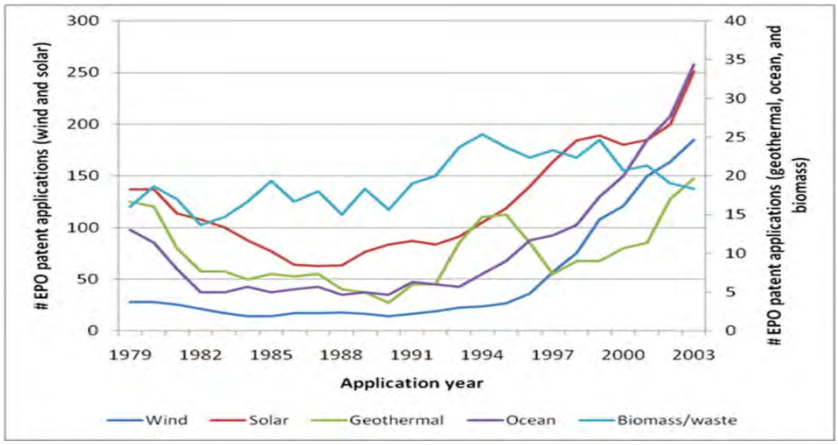

Figure 6. Number of EPO Patent Applications for Renewables by Type of Technology

Source: Johnstoneet al. (2010)

Legend: The number of European Patent Office (EPO) applications for patents pertaining to various renewable energy technologies, sorted by the year of application. Patent counts for wind and solar technologies are on the left vertical axis, with counts for the remaining technologies on the right vertical axis.

The note that because climate protection is a global public good, wide diffusion of climate-friendly innovations is desirable. Thus, they conclude that additional research is needed to assess the specific implications of IPR for green technologies.

GREEN GROWTH

Green growth has the potential to address economic and environmental challenges and open up new

sources of growth through the following channels:

- Productivity.Incentives for greater efficiency in the use of resources and natural assets: enhancingproductivity, reducing waste and energy consumption and making resources available to highestvalue use;
- Innovation.Opportunities for innovation, spurred by policies and framework conditions that allowfor new ways of addressing environmental problems;

- New markets.Creation of new markets by stimulating demand for green technologies, goods, andservices; creating potential for new job opportunities;
- Confidence.Boosting investor confidence through greater predictability and stability around howgovernments are going to deal with major environmental issues;
- Stability.More balanced macroeconomic conditions, reduced resource price volatility andsupporting fiscal consolidation through, for instance, reviewing the composition and efficiency ofpublic spending and increasing revenues through the pricing of pollution.

It can also reduce risks of negative shocks to growth from:

- Resource bottlenecks which make investment more costly, such as the need for capital-intensiveinfrastructure when water supplies become scarce or their quality decreases (e.g. desalinizationequipment). In this regard, the loss of natural capital can exceed the gains generated by economicactivity, undermining the ability to sustain future growth;
- Imbalances in natural systems which raise the risk of more profound, abrupt, highly damaging, andpotentially irreversible, effects – as has happened to some fish stocks and as could happen withdamage to biodiversity under unabated climate change.

Greening growth will require much more efficient use of resources to minimize environmental pressures. Efficient resource use and management is a core goal of economic policy and many fiscal and regulatory interventions that are not normally associated with a “green” agenda will be involved. And in every case, policy action requires looking across a very wide range of policies, not just traditionally “green” policies.

A green growth strategy is centered on mutually reinforcing aspects of economic and environmental policy. It takes into account the full value of natural capital as a factor of production and its role in growth. It focuses on cost-effective ways of attenuating environmental pressures to effect a transition

towards new patterns of growth that will avoid crossing critical local, regional and global environmental thresholds.

Innovation will play a key role. Existing production technology and consumer behavior can only be expected to produce positive outcomes up to a point; a frontier, beyond which depleting natural capital has negative consequences for overall growth. We do not know precisely where this frontier lies in all cases but we do know that the ability of reproducible capital to substitute for (depleted) natural capital is limited in the absence of innovation. By pushing the frontier outward, innovation can help to decouple growth from natural capital depletion.

A green growth strategy also recognizes that focusing on GDP as a measure of economic progress overlooks the contribution of natural assets to wealth, health

and well-being. It therefore targets a range of measures of progress, encompassing the quality and composition of growth, and how this affects people's wealth and welfare. In this and many other respects, green growth is an essential component of sustainable development.

The economic costs arising from the emission of some pollutants and the over-exploitation of some resources are relatively well-known. Clear benefits will arise once the right policies are implemented. In some cases, the size and timing of payoffs from maintaining ecosystem services – the benefits humans derive from nature – are subject to uncertainty because interactions between ecosystem services, climate change and biodiversity are complex. Nonetheless, action taken now to insure against unfavorable, irreversible or even catastrophic outcomes can avoid significant economic costs in the future.Economic policy decisions need to incorporate a longer time horizon. Patterns of growth and technological change build on one another creating path dependency and technological and institutional lock in. Environmental impacts are also cumulative and sometimes irreversible. These create strong links between decisions today and economic opportunities in the future.Effects of 'green growth would be big onSMEssectors and value chains, education and training provision, new environmental policy instruments and social change mechanisms and building a Bottom-up, community-driven approach.

Green growth strategies need to encourage greener behavior by firms and consumers, facilitate smooth and just reallocation of jobs, capital and technology towards greener activities and provide adequate incentives and support to green innovation. Misguided government policies, market constraints and distortions all lead to or arise from market failures, which mean there is often a gap between private returns from economic activity and the overall benefits that accrue to society. Green growth policies aim to close that gap and raise returns to "green" investment and innovation. They also aim to minimize the distributional consequences of change for the least advantaged groups of society and manage any negative economic impacts on firms while retaining incentives for improved economic performance.Implementing a green growth strategy will involve a mix of instruments which draw from two broadsets of policies. The first set includes framework conditions that mutually reinforce economic growth and the conservation of natural capital. Included in this are core fiscal and regulatory settings, such as tax and competition policy, which, if well designed and executed, maximize the efficient allocation of resources. This is the familiar agenda of economic policy with the added realization that it can be as good for the environment as for the economy. To these settings should be added innovation policies1 that place a premium on the inventiveness that is needed if we are to use natural capital much more sparingly and efficiently.At the global and national levels:

- Growing concerns about the environmental unsustainability of past and current economic growth patterns and the risk of irreversibly altering the environmental base needed to sustain economic prosperity‖ (OECD, May 2010).

- reen growth is a way to pursue economic growth and development, while preventing environmental degradation, biodiversity loss and unsustainable natural resource use.‖ (OECD, May 2010).
- The financial and economic crisis creates room for public policies aimed at encouraging recovery and renewed growth on more environmentally and socially sustainable grounds.‖ (OECD, May 2010).
- Opportunities for growth at the regional level are seen as :
- regions are implementing policies to capitalize on the green economy to foster economic growth
- The new green economy provides a dynamic opportunity to rebuild the state‘s job base, attract new investment, and diversify the state‘s economy‖ (Michigan Green Jobs Report, 2009)
- The greening of the Maine economy is part of a necessary progression and an opportunity for renewed economic growth…it can expect to see the benefits of increasing the productivity of its business, improving its energy efficiency and lowering the cost of heating and cooling its buildings‖ (Maine‘s Green Economy, 2010)
- Regions dependent upon current forms of high-carbon energy extraction and generation may be losers, upon products that use high-carbon energy, such as car production, may be losers, where Market forces and government policies can place regions at an economic advantage or disadvantage with respect to a green economy

GREEN JOBS

High potential High potential sectors for Green Jobs are:

- Mobility: mass transportation
- Energy I: efficiency in buildings, industry, transport
- Energy II: renewable sources (sun, wind, thermal, water, ...)
- Waste management: reduction, re-use and recycling
- Sustainable agriculture and forestry
- Environmental services

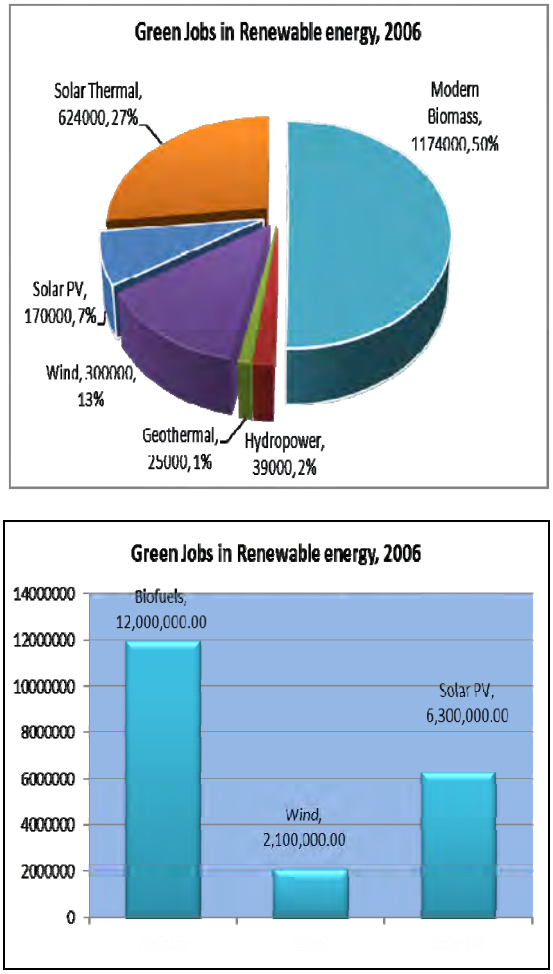

Figure 6-7: Renewable energy Projected Job growth 2006 -2030

Employment impact of moving to a greener economy is seen through probably (modest) net gains in jobs from environmental policies and major gains and major losses, mostly within sectors (e.g transport, construction). Transformation of most jobs and sectors is seen through the large potential gains from leap-frogging and inclusive development. Greener growth will see new jobs created, including skilled jobs in emerging green innovativeactivities. But some jobs will be at risk so there is a need to facilitate the re-allocation of workers fromcontracting to expanding sectors, such as those that replace polluting activities with cleaner alternatives or provide environmental services. Labour market policies should focus on preserving employment, not jobs. They need to ensure that workers and firms are able to adjust quickly to changes brought about by the greening of the economy, including

by seizing new opportunities. By helping workers to move from jobs in contracting sectors to jobs in expanding sectors, they can also help to assure a just sharing of adjustment costs occasioned by the transition. New skills will be needed and this will require appropriate education policies.

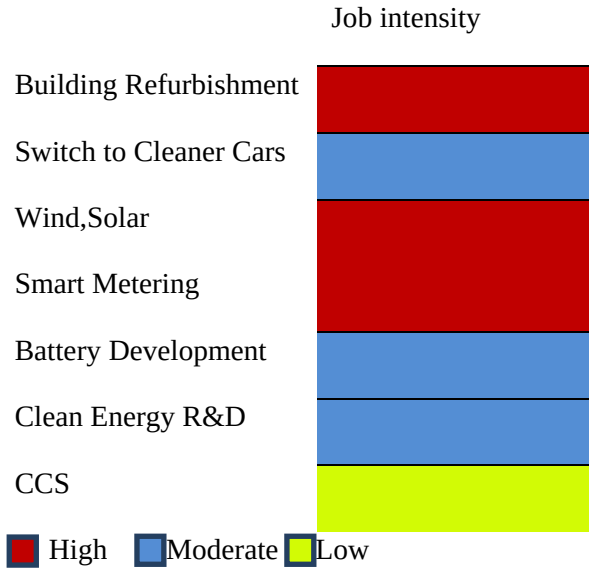

Figure 8:Green Jobs intensity by sector

Source: IEA,2009

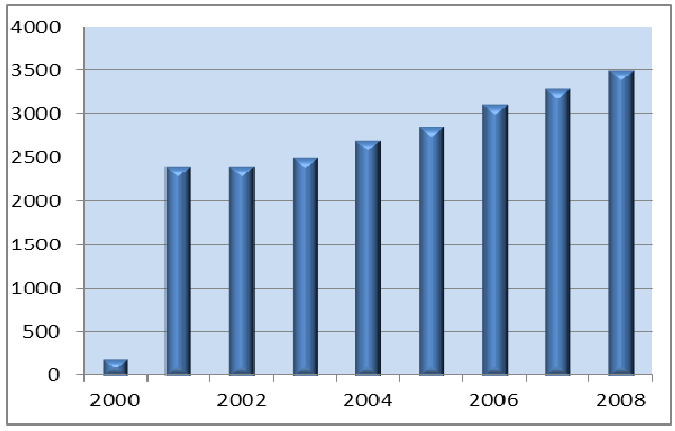

Figure 9: Direct employment in EU in eco industry

Source: European Commission, Eurostat

While many existing skills will remain appropriate, skill mismatches and gaps may emerge. Training and re-training programmes will be a key component of labour market policies.

The scale of adjustment should not be overstated. For example, significant reductions of greenhouse gas emissions can be achieved with only limited effects on the pace of employment growth. Indeed labour market performance can improve if revenues from carbon pricing are used to promote labour demand. Furthermore, this does not take into account the positive impact on employment as a result of strategies fostering sources of green growth**.**As for the first time, after 1999 in EU the unemployment rate has reached 12 percent, according to Eurostat, with 19,07 million people seeking for a job in the April 2013, what is 2 million more than the same time last year, further Figure is enthusiastic support on green alternative employment.

DISCUSSION

Policy makers at all levels of government also have a role to play in the creation of opportunities for the expansion of green activities and investments; and the reduction of emissions levels within their circumscriptions. Improvements in energy efficiency can not only deliver some of the largest and cheapest CO2 reductions, but can also bring about benefits for employment due to its labourintensity. Public policy can therefore effectively trigger demand for new products and encourage investment in green industries while creating employment growth.

Although most of the material produced so far deals with employment speculations on whether or not green jobs will be created as a result of climate change, this paper argues that with growing awareness and regulation comes an increase in the transformation of skills and the emergence of new ones; not just for new jobs but more importantly, for the adaptation of occupational profiles to the new market environment of a low-carbon economy.

CONCLUSIONS

Global climate change, market forces and government policy present opportunities and challenges for regions. As discussed in this paper, the transition to a low-carbon economy and its implications for local labour markets requires a multi-dimensional analysis that goes beyond traditional sectoral thinking. It can also be seen through the multiplicity of possible approaches that can be taken when designing public action strategies to manage the transition and enable green growth. Emergent local policy implications of the transition to a low-carbon economy can be identified in terms of policy fields and possible target groups for designing public intervention. Policy approaches can vary according to the selected target groups, including: the

*sectoral*approach: Targets specific industries, such as the renewable energy, construction or automobile industry; the *type of employer* approach: Targets specific types of employers such as large businesses, SMEs or the public sector; the *territorial* approach: Targets specific territories and might be done on a variety of scales (local, national, regional) but the three levels need to apply relevant knowledge and co-ordination. Partnerships have an important role to play in coordinating the interventions and ensuring that they meet priority needs and the *consumer* approach: Targets the final consumer, notably through its habits and preferences. This would be particularly important to stimulate a cleaner demand (consumer) that will result in the supply (industry) of more clean products and services in the market.

The need to match future skills needs with the demand for businesses to produce greener products and services will be a challenge for businesses and the labour market in general. Labour market institutions at the local level will bear the price of having to cope, on one side, with overarching regulations (*e.g.* national) that will impose restrictions in terms of production processes and economic activity, while seeking to implement incentives to modify consumer habits and therefore stimulate greener business activity. The issues appear to be essential to guarantee a smooth adaptation of labour markets to greener demands are: the transformation of jobs and the emerging skills requirements in the context of a greener economy will have to be identified and supported to achieve economic growth, by both firms and the labour market. Local authorities have an important role to play in assisting businesses in anticipating their skills needs and in putting in place the right programmes for workforce development in order to match human capital supply and demand in a given locality. A better understanding of the direct (*i.e.* market demand) and indirect (*i.e.* through regulations) impacts of climate change on existing job profiles and on the skills needs for new green activities is necessary so that labour market agents can define and implement the right policy mix to ensure the availability of a pertinent workforce. Also, as businesses and other stakeholders face the challenges of complying with climate change stipulations and regulations, many economic opportunities may arise. If consumer habits are modified accordingly, the whole supply system (products and services) can expand significantly, resulting in the creation of jobs. With the right set of incentives and by showing the example, public authorities at the local level can stimulate the transformation of consumer habits to pull the demand of greener supplies and assist businesses in seizing the opportunities arising from a greener market.

Finally, there are various mechanisms and practices that could be used to facilitate transformation and adaptation of local labour markets to greener demands. As labour markets evolve, businesses and other stakeholders will have to adjust their production methods and outputs. Public authorities could play a key role in assisting economic agents to adapt their activities in order to maintain and create more and good quality jobs that are relevant to the current situation. 5. Conclusions - Emergent policy themes and target groups .In conclusion, the green economy can become a unique opportunity for businesses, civil society and the public sector to generate economic activity in a sustainable way. Further analysis is required on the new skills needs and the transformations that will take place in the labour markets in order to identify the specific policy needs and support schemes that can contribute to the subtle transition to a low-carbon economy.

REFERENCES

[1] Apollo Alliance (2008), New Energy for Cities, p. 3

[2] Barton, J.H. (2007), "Intellectual Property and Access to Clean Energy Technologies in Developing Countries," ICTSD Issue Paper #2.

[3] Dasgupta and Maler (2000) Dasguupta, Susmita, Craig Meisner, and David Wheeler (2010), "Is environmentally friendly agriculture less profitable for farmers? Evidence on integrated pest management in Bangladesh," Review of Agricultural Economics, 29(1), 103-118.

[4] Dechezleprêtre, Antoine, MatthieuGlachant, Ivan Hascic, Nick Johnstone, and YannMénière, (2011), "Invention and transfer of climate change mitigation technologies on a global scale: A study drawing on patent data," Review of Environmental Economics and Policy, 5(1), 109-130.

[5] De la Tour, Arnaud, MatthieuGlachant and YannMénière (2011), "Innovation and international technology transfer: The case of the Chinese photovoltaic industry," Energy Policy, 39, 761-770.

[6] Esty, Daniel C. (2001), "Bridging the trade-environment divide", Journal of Economic Perspectives, 15(3):113-130.

[7] Hall, Bronwyn H. and Christian Helmers (2010),"The Role of Patent Protection in (Clean/Green) Technology Transfer," NBER Working Paper #16323.

[8] Johnstone N, Hascic I, Popp D. 2010. Renewable energy policies and technological innovation: evidence based on patent counts. Environ. Resour. Econ. 45(1): 133-155.

[9] Kastratovic E: From Knowledge to Financial Management, International Review (2013 No.1-2)ISSN 2217-9739, pp. 156. COBISS.SR-ID 192516620

[10] Khanna, M. and D. Zilberman (2001), "Adoption of energy efficient technologies and carbon abatement: the electricity generating sector in India", Energy Economics, 23, 637-658.Lecocq and Ambrosi (2007)

[11] Knezevic V, Kvrgic G, Ivkovic: Serbian Modern Economy – regional comparative analysis, International Review (2013 No.1-2)ISSN 2217-9739, pp. 7. COBISS.SR-ID 192516620

[12] Lewis, Joanna I. (2007), "Technology Acquisition and Innovation in the Developing World: Wind Turbine Development in China and India," Studies in Comparative International Development, 42(3-4), 208-232.

[13] Maine‘s Green Economy, 2010) Maine‘s Green Economy: An Overview of Renewable Energy and Energy Efficiency Sectors, Revised 2/10

[14] Martinez-Fernandez, Hinojosa & Miranda (2010) Greening Jobs and Skills: the local labour market implications of addressing climate change, working document LEED OECD.

[15] Michigan Department of Energy, Labour and Economic Growth, 2009, p. 4).

[16] Michigan Green Jobs Report, 2009 Michigan Green Jobs Report: Occupations and Employment in the New Green Economy,‖ Michigan Department of Energy, Labor, and Economic Growth, May 2009.

[17] Patt, A., et al. (2010), "What Can Social Science tell us about Meeting the Challenge of Climate Change? Five Insights from Five Years that Might Make a Difference", in M. Hulme and H. Neufeldt (eds.), Making Climate Change Work for Us - European Perspectives on Adaptation and Mitigation Strategies, Cambridge University Press Cambridge, pp. 369-388.

[18] Pope, A. (1720), "Translation of the Iliad of Homer", Web Editions, Adelaide Potts, 2010

[19] Protic M : Managing the Impact of Climate Changes in Serbia-case study, International Review (2013 No.1-2) ISSN 2217-9739, pp. 128. COBISS.SR-ID 192516620

[20] Pueyo, Ana, Rodrigo García, MaríaMendiluce and Darío Morales, “The role of technology transfer for the development of a local wind component industry in Chile,” Energy Policy, 39, 4274-4283.

[21] OECD (2008a), "Climate Change Mitigation: What do We Do?", OECD, Paris.

[22] OECD (2008b), "Economic Aspects of Adaptation to Climate Change: Costs, Benefits and Policy Instruments", OECD, Paris.

[23] OECD (2008), Environmental Outlook to 2030, and OECD (2009), The Economics of Climate Change Mitigation:Policies and Options for Global Action beyond 2012.

[24] OECD (2009a), Policy Brief, June 2009, OECD, Paris.

[25] OECD (2009b), "Conclusions and Green Growth Declaration", adopted by the Council at Ministerial Level, 25 June 2009, OECD, Paris.

[26] OECD (2010a), "Interim report of the Green Growth Strategy: Implementing our Commitment for a Sustainable Strategy", C(2010)48/REV1, 19 April 2010, OECD internal document

[27] OECD (2010b), Entrepreneurship, SMEs and Innovation, OECD, Paris.

[28] UNEP, ILO, IOE, ITUC (2008a), "Green Jobs – Towards Decent Work in a Sustainable, Low-Carbon World", report produced by Worldwatch Institute and commissioned by UNEP, ILO, IOE, ITUC, Nairobi.

[29] UNEP (2008b), Background Paper on Green Jobs, Nairobi.

[30] United States Department of Labour (2009), "A Woman's Guide to Green Jobs", Washington.

(RE) INDUSTRIALIZATION OF SERBIA IN FUNCTION OF OPENING GREEN JOBS

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Maja Cogoljevic[17]

Abstract:In this paper we will consider the problem of unemployment in Serbia, and solution to this problem policy makers perceive in the re-industrialization of Serbia. Therefore, we will analyze the possibilities of re-industrialization of Serbia in more details. To get the answer to this question, we start from the causes that led to the devastation of Serbian economy, especially in the industrial sector. Causes are in the last four world crisis - mega crisis, for which they are further discussed with reference to their reflection in Serbia, including also a scale of consequences they produced. It is noted that the latest crisis in the Euro zone even further exacerbate otherwise difficult situation in terms of unemployment. The paper presents the possible proposals for a way of reindustrialization of Serbia, and in this sence identifies relevant conditions, which must be fulfilled for its success. It specifically underlines the importance of ecological environment and highlights the need to meet a set of quality standards concerning the ecology, and indicates that they might be one of the major restrictions of reindustrialization for "green jobs." To make reindustrialization possible, it is necessary to define an appropriate strategy, therefore, on the basis of catastrophe theory, we propose a model for the analysis of strategy that takes into consideration five relevant dimensions of reindustrialization. Based on exposed model, some possible ways of reindustrialization are analyzed.

Key words: Crisis, Unemployment, Reindustrialization, Strategy, Ecological Environment

JEL classification: O40, O44

UDC 338.45.01(497.11); 502:33(497.11)

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INTRODUCTION

Human society throughout history experienced the different phases of development, which includes the period of growth and prosperity, but also the periods of crisis. The higher level of development of society is, that crises have a larger impact on society. Only during the last 100 years history chronicles the four global crises (mega crisis), which have had a significant impact on global social development. Serbia, as an integral part of the world, couldn′t remain immune to these mega crisis. Each of them has left its own distinctive seal in the development of Serbia. It can be said that Serbia was particularly affected by final crisis that has engulfed the Euro zone, because of recession in the European Union, from where the most important investors in Serbia came from, which reflected on reduction in investment and the recession of the Serbian economy. And otherwise devastated Serbian economy experienced another shock. Unemployment has reached alarming proportions.

This was the reason why policymakers of Serbia, at the recent 2013 The Kopaonik Business Forum, raise the question of renewed industrialization, or reindustrialization of Serbia, which is evaluated that could be a solution to the problem of unemployment.

Of course this question initiated whole range of proposals, but also the polemic tones. Attitudes regarding the reindustrialization of Serbia, are thus divided, and depart from how to implement re-industrialization of Serbia, go over the question whether those who had been brought Serbia into a state of de-industrialization have legitimacy to return it to the state of industrialization, and ending up with whether the Serbia required reindustrialization at all.

The authors argue that, therefore, this is a topic that inevitably deserves to be considered in its essence. In this regard, in order to reach the root of the current state of economic development in Serbia, we start from the world crises - mega crises, which certainly left their mark on our region. Analyses show that Serbia had lost more than 32.000 jobs in the industrial sector per year. Since this trend lasts too long, Serbia has become a leader in Europe by the number of unemployed. The authors are trying to discover which are the causes that have led to such a catastrophic situation. Special accent is placed on the consequences arisen from the mentioned crisis. Authors don′t cast a doubt on the need for the implementation of reindustrialization of Serbia, but for them, the key question is, how to implement it. For that reason, they firstly analyze the possible ways of reindustrialization in more details, and then further discuss the conditions under which it makes sense to implement it. In that survey the authors identify the following relevant conditions, namely: business environment, employees, applied technology platforms, as well as the ecological environment. Each of these terms is considered with more details in the text. The authors apostrophize the ecological environment that should create green jobs. But, as it can be seen from the paper, the ecological environment is a special problem, because it requires implementation of set of new quality standards, which in Serbia have not yet become active.

Since for implementation of the reindustrialization necessary to define a consistent strategy, the special attention is paid to the question of strategy. In this regard, based on the theory of catastrophe, the authors propose a Model for analysing the strategy, for which they estimate it can serve as a useful tool in the strategy development. Model for analyzing the strategy recognizes five relevant dimensions and they are: the level of employment, the level of investment, the level of technology, technology platform, the ecological environment, which are important for the reindustrialization with the primary objective of enlargement of employment. The authors discuss some of the possible strategies.

MEGA CRISES

CRISES

In nature is often the case, that, because of the effect of various factors, comes to changes in previously established order of things, which results in establishing a new schedule of things and relationships.

Illustrative is an example from genetics, when change induced in the genome produces new features in a living organism, which is in the longer term reflected as evolution. The situation is similar when it comes to the social organism, and human society as an organized community. Periods of growth (enlargement expressed as quantitative indicators) and development (improvement in qualitative sense) of society, as a rule are followed by periods of crises. There is no one unique definition of society crisis for now.

The crisis derives from the Greek word κρισις and represents every event that leads, or is expected to lead to an unstable and dangerous situation, which affects on individual, group of people, a community, or a human society in whole.

Crisis are considered as negative changes in terms of security, economic, political, social, and environmental protection, particularly when it occurs suddenly, with little or no warning (Wiki, 2013.1).

Crisis is determined by specific, unexpected events (rather than routine events or series of routine events) that generate a high level of uncertainty and posing a threat to security of organizational goals of high priority, which product need to change (Seeger, MW at all in 1998). Crises may be caused by nature or by man. A small number of them are natural crises, that are inherently unpredictable (for example, volcanic eruptions, tsunami, etc.), but most crises are caused by humans (for example, the impact of economic development of human society to climate changes, etc.).

Social crisis is most often manifested as an economic, financial crisis, or crises of unemployment, and others. The economic crisis is a sharp transition into recession. The financial crisis is an unstable and braking time and condition, in

which forthcoming decisive change in the financial sector, especially with the clear possibility of a highly undesirable outcome. The crisis of unemployment is manifested through financial problems of individuals and families, through the loss of health insurance, depressions, etc.

The crisis at the global level or **mega crisis** has some special features, which derive from the characteristics of the modern world. The world we live in is one nonlinear dynamical system, called an attractor, which can be predictable and then we say that the system takes final condition, or it can be unpredictable and cyclical. Mutual relatedness that prevails within it leads to the emergence of the "butterfly effect", which is manifested which is manifested by flapping wings of a butterfly at one place produces wind on another place, or the crisis provoked at its one place, by the system of merged vessels, produces the effect of crisis on its other parts.

In the more recent history can be identified following mega crisis, namely:

The first mega crisis - the Great Depression in 1929th. It was created immediately after the First World War, during which occurs the rise of U.S. in superpower, and reached its peak when it caught till then unprecedented depression of market, which caused fall in national income by 50%, closing the 12 million jobs, closing 10 000 banks, and so on, and which is subsequently, by the system of merged vessels, spilled over Europe and beyond.

The second mega crisis - bipolar world in 1945th. Global crisis emerged immediately after World War II, when within winners grow up two super powers of opposite ideologies, the bipolar world: capitalism and socialism, and whose protagonists were the U.S. and the USSR, and at the end of Berlin Wall fall in late eighties, had left only one superpower, the USA, monopoly world.

The third mega crisis - financial crisis in 2006th. World crisis precedes the development boom in residential construction in the United States from 2000 to 2005. year. The crisis has caused on cleptocratic ideology[18], in order to realize profits through low interest rate, and which allowed higher customer′s loan for the same monthly payment, which opened the space for further borrowing by people. Pumping of financial balloon has finally led up to it that balloon be so much inflated, that it snapped. People have lost their properties, occur recession and unemployment, and the state to preserve the banking system, had to inject in it 140 billion dollars from taxpayers (Milačić RV, 2009).

The fourth world crisis - monetary crisis of EU in 2007th. The European sovereign debt crisis (often called the crisis in the Eurozone), is in fact the financial crisis, which has made some countries of the Economic Monetary Union (EMU), which are in euro zone, due to excessive borrowing, hardly can continue to finance their public debt without the help of third parties, in accordance with Treaty of Maastricht from 1992., which implies allowed financial deficit below 3% of GDP. The crisis, in addition to negative economic effects in hardest-hit countries, has

[18] *Cleptocratic ideology is based on the society of unequal people that works by shamelessly spreading the net wealth of the people to a high-class*

produced a number of political implications in some countries (the fall of the government, unemployment, expressing dissatisfaction) (Wiki 2013.2).

MEGA CRISES AND THEIR IMPACT ON SERBIA

It can be concluded that the mega crises mentioned in chapter 2.1 undoubtedly had an impact on economic trends in Serbia. The effect of the first mega world crisis was insignificant since it is the period of creation of the new state of SCS, and considering underdeveloped economy its impact, however, was insignificant. The influence of second global crisis on the former SFRY had a different effect. Throughout most period of activity, the crisis has even had a positive effect in relation to the blocks, since former policy makers used block division of the world to take a third course, or to be between ideologically divided blocks and to use the benefits that have derived from it. On this platform was made industrialization of SFRY, and in this context, the Serbia. However, at the end of period of crisis activity, current policy makers didn′t understood in the right way the development of crisis, what in the area of SFRY, led to the multiplication of its operations, through the dissolution of the state, then seduction of sanctions from the international community to Serbia, followed by the bombing of Serbia by NATO. Although the crisis in the region has completed long ago, its recurrence still remains actual, especially when it comes to Kosovo and Metohija. The third mega crisis was also reflected at Serbia, although former policy makers claimed that it will pass over Serbia, by the system of merged vessels its influence had substantial reflection, especially on the occurrence of the recession, and as a result had significant reduction in jobs. The fourth mega crisis has worsened already bad economic situation, due to reducing the number of foreign investors, which reflected at further layoff, or further increase of unemployment, which has in the meantime reached such proportions, that the current business policy makers at the recently completed 2013 The Kopaonik Business Forum, promoted the new idea of the need for **reindustrialization** of Serbia. It was concluded that creating new jobs isn′t possible, unless is again revitalized the real sector, or the industrial sector.

THE CRISIS IN SERBIA

THE STATE OF INDUSTRY

When we talk about reindustrialization of Serbia, it should be noted that this isn′t a new concept in the region, because the concept of industrialization, since the end of World War II, was the main driving force of development of former Yugoslavia, and that nearly half of that industrial complex have belonged to Serbia.

But in the period of change from 2000th till today, were made strategic errors in domains which are strategically important for Serbia, and it (Milačić RV, 2009): destruction of existing industry, maintaining undergrowth of the educational system (particularly in the field of higher education and scientific complex), as well as the elimination of the domestic banking segment in the financial sector. In the following we will focus only on the first strategic error or de-industrialization of Serbia, which, however, began earlier, and the causes of its creation were made even before more than two decades. De-industrialization of Serbia can be divided into several periods, as follows:

The first period, during the eighties of the twentieth century, immediately following the prosperous period of industry in Serbia, in which it has a significant share in the creation of gross value added as well as in foreign trade relations. This period was stopped by major debt crisis and imposition of restrictive model of stabilization by the IMF, which has led to a reduction in inflow of external sources of lending.

The second period, during the first half of the nineties of XX century was marked by disintegration of the former Yugoslavia (SFRY), to whom were first contributed economic sanctions imposed by the international community, then the bombing by NATO. The sanctions have proved to be fatal because they prevented the export of goods and services, significantly increased operating costs and indirectly contributed to hyperinflation (1992-1993).

The third period, during the second half of the nineties of XX century, after 1995th year, when was noted a slight recovery of industry by increased participation of industry in GDP and its gradually return to exports.

The fourth period occurs at the beginning of XXI century, and has marked the maximum of de-industrialization of Serbia, and is characterized by privatization, unsuitable market liberalization, the enormous import of consumer goods and capital. In these circumstances, the economy and the market was presented a false signal about the cost effectiveness (or profitability) of certain activity, with maximum favoring imports of everything with, of course, great lag in exports, and what was,at the end resulted, that the total industrial production during the period 2000-2010, be less for even 2.4 times in comparison with 1990 (Šljukić M., 2013).

Industrial sector in Serbia, in these times of crisis, besides factories, had lost more than 700.000 jobs, which means that, on average, Serbia had lost more than 32.000 industrial jobs per year. According to data of the State Institute for Statistics, Table 1, it is evident that the number of employees in this sector from 1991st is rapidly declining, while in 2012th the number of employees who remained makes only 37.1% of total number of employees.

Table 1. Number of employees in industrial sector and crafts in Serbia

Year	1991	2002	2004	2010	2012
Number of employees in the industrial sector and crafts	1.020.940	711.725	551.429	407.154	378.789

Source: State Institute for Statistics

In the early nineties of the XX century, the industry of Serbia for only about twenty months, almost had stopped, reducing its production function, on average, by 60%, which is especially pronounced in high-tech sectors, such as the production of electronic equipment, machine tools, motors, auto-industry and agricultural machinery industry, where the fall very often exceeds even 80%. From the industrial sectors have remained only food and energy sectors. Along with reduction in number of industrial workers, has changed the qualification structure of employees in the industrial sector. Based on data of State Institute for Statistics from 2011. year, qualification structure of the manufacturing industry is as follows: faculty, academic high school 7.8%; higher school 5.3%, secondary education 72.5%, primary school 13.8%, incomplete primary school 0.6%, with no school 0.1% (Petrovic BP 2013.1).

After the changes in 2000th, the devastation continues by forming crisis centers, then setting on managerial positions party suitable people and professional dilettantes. And instead, to first carry out revitalization, and then re-engineering of the existing industrial structure by depth, and thereafter its connection to strategic foreign partners, the privatization was conducted, which has led to this, that economic entities being sold or brought into a state of restructuring, which inevitably leads to downsizing. The result is massive premature retirement and dismissal of employees or giving severance pay, which further increased the unemployment.

Final result is massive premature retirement and dismissal of employees or giving severance pay, which further increased the unemployment.

Side by side with privatization, as a consequence of transformation of former socialistic in a capitalistic society, there is a transition of economy from command-planning into market, what caused a radical structural changes in all economic sectors, especially in the industrial sector. Market operations, based on new liberal model and private ownership structure of companies, produced the uncontrolled, intense and radical changes that have had a different impact on employee responses: the first, who, partly because of commitment to the company, and partly because of years of age, become the biggest losers of the transition; the second who, in order to basic existence, directed revenues realization in the gray economy, mostly in the trade; the third, who, thanks to entrepreneurial spirit and knowledge of certain skills, legally managed to start and develop private business, mostly in trade, hospitality and services; the fourth, who already possessed the land and already had experience working in agriculture; the fifth, who despite all the difficulties remained faithful to industrial sector (Šljukić M., 2013).

Policymakers were then, exit from the crisis primarily seen in the development of SME sector. However, although the SME sector, meanwhile, has become the dominant industrial sector (in terms of number of employees, generated gross revenue, as well as value added), overlooked was the fact that the SME sector can

function successfully only if coexist with large enterprises. And at same time, large enterprises are closing, land use is changing, the privatization are nullifying.

Such treatment of the industrial sector has led to the further impoverishment of the society, which inevitably leads to decay of the state. The measure of decay is *Index of state failure* which provides a synthetic representation of success of 177 countries worldwide. It is calculated on the basis of 12 indicators, whose measurement scale are from 1 to 10, whereby the higher index value indicates a worse condition of state, and their sum determines the position or rank of the state. According to this criterion, Serbia is ranked on 89th place with a total score of 75 (FP 2012).

CAUSES

It can be concluded that the causes of this collapse of the industrial sector (and consequently the state) are numerous, and some of which are mentioned in the description of the situation. Can be singled the most important, namely: privatization model, dinar exchange rate policy, bad investment.

Privatization model. It was adopted the privatization model based on neo-liberal ideology, which proved to be disastrous for the economy of Serbia, especially for the industrial sector. Especially is selected wrong priority of privatization, initially was implemented privatization of monopolistic industries, which are always able to sell, (tobacco industry, cement, etc.), and for the end, it was left what is difficult or cann′t be privatized. Lacking of proper control of conducted privatization, which after many expressed dissatisfaction of employees by acting, have led to the cancellation of a large number of privatizations. Overall speaking, privatization process can be estimated as unsuccessful.

Course policy of unrealistic dinar which grew slower than inflation, so when was observed period of last 12 years, it can be concluded that the cumulative inflation rate was about 200%, and rise in dinar exchange rate nor 120%, and which had impact on operations of economic entities (Đuričin D., 2013).

Bad investment. Despite invested 25.97 billion euros from the 2005th to 2011^{th,} the number of employees in Serbia was decreased by 339,000 persons. The reason lies in the fact that Investment was directed towards import, supporting activities and services. Importers and bankers make a profit and increased their wealth, and most of the citizens were impoverished. Instead portion of the proceeds from privatization, to be used for revitalization and modernization of the industry, and thereby become competitive on a global scale, it was invested in the "shopping mall economy". So it is not surprising that largest investment were in Belgrade (almost half of the investment), and the other regions in this regard were lagging far behind. (Vis S., 2013).

CONSEQUENCES

By bad privatization, as well as in terms of privatization model, so in ways of implementation, were permanently destroyed significant economic capacity, especially industrial. A large number of new owners usually had no production and industrial experience, which led to the devastation of privatized capacities. Many owners have quickly left the activity, and industrial capacity or fail or are already sold at a price of old iron.

A number of owners bought industrial capacities for the purpose of speculative transactions, or by the preferred rent principle with the aim of land use change for another activity.

Privatized factories which weren′t bankrupt, as a rule are, or derived from primary production functions or technologically completely devastated, because instead of machines or production lines remained foundations holes with bolts for anchor (eg ILR) (Petrovic B.P., 2013.1).

In addition to de-industrialization in Serbia is also in effect depopulation, since per year has about 30.000 inhabitants less. Especially is unfavorable working structure of population, because with an average age of 43 years, Serbia has become one of the oldest nations in the world. Due to the low level of employment, Serbia has comparatively to number of working population, large number of supported persons, more precisely, to 1.1 employee comes 1 supported person, which is economically untenable concept. Particularlly concerning is huge youth unemployment, since more than 60% of the unemployed were just under 25 years. Because we don′t have industrial production, and because industrial production is at this level, is significantly and irreversibly lost experience for industrial production (Đuričin D., 2013).

Money from previous privatization instead in development of new industry, was irreversibly spent mostly on unrealistic budgets or pensions and salaries in the public sector. The structure of employees is also unfavorable since Serbia has 1.8 million employees, of which about 550.000 works in the administration. In Serbia there is 1.650.000 pensioners, of which 250.000 went in early retirement, while 800.000 of citizens are unemployed. (Media Centre, 2012).

REINDUSTRIALIZATION IN SERBIA

HOW TO REINDUSTRIALIZE SERBIA?

Following launching of idea for reindustrialization of Serbia at the Economic Forum in Kopaonik, more scientific delegates are registered with proposals for its implementation. In further text they will be briefly reviewed.

According to (Milicevic, D., 2013), state should direct priority to certain measures of economic policy, which: stimulate investment in industrial production which has a perspective, in range of use of automatisation and robotization in production, the introduction of quality systems according to international standards, with a completely new technological developments based on "green" technologies and different energy consumption, favor the attraction of foreign investment in the construction of manufacturing, industrial plants and hiring workers of certain occupations, favor the industry based on knowledge and software sales thanks to the available resources, encourage entrepreneurial ventures through business incubators and clusters.

According to (Bušatlija M., 2013) before the implementation of re-industrialization, it would be necessary bring a long-term development strategy (at least 25-30 years), with the reform of the public sector (public administration, public finance, public companies, Pension Fund, the management of state and public property, management of urban and building land), and which requires much more time, than the mandate of one government lasts. However previous experiences of the transition, indicate that the policy makers practiced primarily medium measures for economic recovery.

According to (Petrović B.P., 2013.2) after the transitional period unjustifiably was omitted industrial sector, especially the manufacturing industry, in which Serbia has the greatest potential for export growth and job creation due to comparative advantages, such as: tradition, small dependence on local natural resources, products that enable creation of high value added since in them, beside material resources have also embedded intangible resources, such as knowledge and innovation. Here, especially as development potential are perceived companies that are in the restructuring (IMT, IMR, Ikarbus, FAP, 14th October, the Cable industry Jagodina, etc.), because they represent a hidden temporal and technological shortcut for starting the process of industrialization. For their activation is pointed out the need for engineers, especially young, or new technological elite necessary to build a new industry of Serbia, based on knowledge.

According to (Radivojša 2013) are emphasized industries on which faster development should work the most, namely: energy, food processing, auto-industry, textile industry and information technology. In reasons is seen existence of capacity for their development, whether they are natural (energy, food industry),

whether they are already built (auto and textile industry), or available the appropriate personnel (information technologies).

According to (USAID, 2012) average annual production growth is projected at 6.9%, and processing industry at 7.3%. Activities by which can be achieved projected goals include measures and institutional solution. Measures include: Improving the business environment, removing limitations for the development of entrepreneurship; indirect measures, guarantees and insurance, technical assistance, forms of specific business support, direct measures, crediting the economy according to clearly defined principles. Institutional solution involves translating dispersal of development activities of state in a single institution.

According to (Savić Lj., 2013) reindustrialization of Serbia demands an effective program of recovery and development of Serbia, which includes, in particular: radical repair of business environment of Serbia (zero corruption and the responsible and efficient public administration), orientation of key instruments of economic policy to support production and exports, politics of moderate dinar depreciation, determination of priorities but not at the level of branch, than at the level of product, for which realization Serbia has the necessary conditions, and that can be sold on the world market, assistance to programs (projects) with predefined objectives (growth in production, employment, exports), control of achieving established goals with the obligation for returning in case they are not realized.

According to (Babic B., 2013) financing of reindustrialization is one of key problems, and its solution is seen in the following possible sources of funds, including: domestic savings, foreign direct investment and foreign loans.

Domestic savings must be the main source of funding for renovation industry. As the economy is with low income per capita, so disposable income is low. However, the key question isn′t how many resources do we have, but how they are used.

Foreign direct investment should not be encouraged by bribery of foreign investors through major benefits, but the state should create conditions for profitable investment of foreign capital, including investors from Diaspora.

Foreign loans may be justified with respect to the "golden rule": to invest loan with a rate of return higher than the interest rate owed, and that this increases export power of the country in such a way it can repay the debt in the currency which lender accepts (eg Japan, South Korea, etc.)

CONDITIONS

Implementation of reindustrialization is neither simple nor easy task and requires the achievement of certain pre-conditions relating to the business environment, employees, applied technology platform, as well as the ecological environment.

From the standpoint of **business environment** (Bušatlija M., 2013), the preconditions for the implementation of reindustrialization are infrastructure, electricity, construction, business environment, and social responsibility.

Infrastructure. Condition for development of any industry is developed infrastructure (highways, railway network, waterways, etc.), and the actual state of our infrastructure doesn′t provide these features. (The best example of this is the construction of highway and railway reconstruction, a condition that has set by FIAT).

Electricity. Condition for development of any industry is adequate availability of energy, and it is known that Serbia currently doesn′t have enough energy, since there are two to three times higher consumption per capita, compared to EU average.

Construction. Condition for development of any industry is regulated construction ambience, as for the development of the industrial sector, the assumption is quickly getting construction permit.

Business environment. Condition for development of any industry, which represents a large investment, requires a stable and long-term predictable business environment, which in Serbia is not the case, considering that its public debt exceeds 65 percent of GDP, as well as business risk of investors that ensues from this.

Social responsibility. Condition of stable environment demands providing normal functioning of the health and pension systems, and solidarity, and that in Serbia is not the case, particularly having in mind the relationship between structure employees - dependents.

From the standpoint of **employees** (Šljukić M., 2013), reindustrialization in Serbia should provide re-employment opportunities for a part of unemployed, and those without previous working experience. However, in front of work actors (potential and those who once were) are placed new demands in terms of their competencies and skills, as the new industry requires specific knowledges necessary for market competition with the competitors. The current formal education system is not sufficiently aligned with the needs of industrial companies, particularly in terms of professional education for specific industry needs. The new employees are, also, expected to accept specific forms of organizational culture, which is particularly pronounced in large foreign companies. A special issue of free market economy for today employees is the uncertainty of workplace, making it difficult to plan and solve important existential questions (solving housing issue, founding a family).

From the standpoint of applied technology platform (Krstic M., 2009), it is of importance on which technology platform product is based, or implemented

technological processes in industry. In line with the technological progress in maturity stage of technology life cycle, it comes to the stagnation of profits from existing products, appear new technological solutions that replace existing and the transition to a new technological trajectory becomes imperative. Determination of the moment of transition from mature on prosperous technology, or from obsolete dominant project solution, on one that will be the basis of competitive advantage in the future, represents a key point of technological strategy of companies and the industry as a whole. This implies knowledge of the most important technological trends and investing in just one technology that will, in forthcoming period, be crucial for economic activity. The moment of transition from one technological level to another usually happens when they reached the limits of the dominant project solution for product or or when they have reached the physical limits of mature technologies. In this sense, the company, or the industry, must make a technological breakthrough towards a new technology platform, Figure 1.

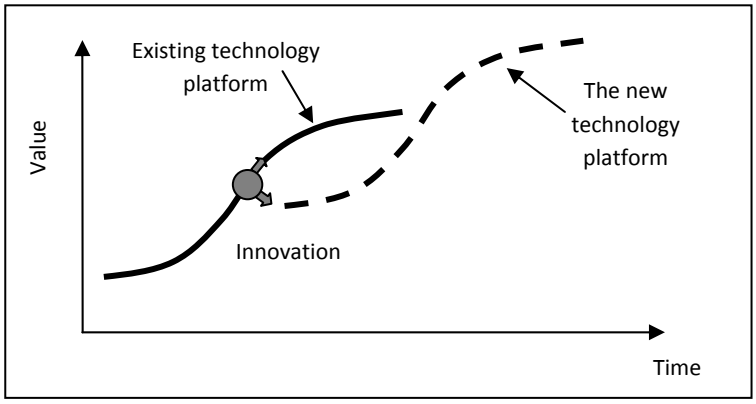

Figure 1. Transition from the existing to the new technology platform

Source: origin: (Krstić M., 2009), modified

From the viewpoint of **ecological environment** reindustrialization would necessarily have to be conducted in a way to satisfy the requirements of the highest quality standards and environmental protections. In this sense, a new industry has in everything be based on the application of the series of ISO standards concerning the Quality Management Systems, Environmental labels and declarations, Life Cycle assessment, as well as Greenhouse gases. This practically means application of at least following series of standards in new industry: ISO 9000, ISO 14001, ISO 14020: 21, 22, 23, 31, 32, 40, 41, 44 as well as ISO 14064: Part 1, 2.3 (M. Finkbeiner, at all 2006). Satisfaction of requirements defined by these standards is neither simple nor cheap, whether it is about products or applied technological processes, since it is necessary that, for each individual product satisfying ecological conditions, to require (re)design on depth and along the entire

reproduction chain and what multiplies the job and significantly makes more complex the reindustrialization. In order to confirm these claims, it could be used an example of what it looks like wine production in terms of the ecological environment, Figure 2. Worth mentioning is the fact that in Serbia, except for ISO 9000 standards, the application of other standards not yet become a regular practice. Starting from the experiences of introducing certain standards in Serbia, (such as ISO 9000, HCCP, etc.), it can be concluded that the introduction of these standards would be problematic. This is because, first of all language barrier, and then the essence of application. A special problem will occur in the calculation of harmful effects on the environment.

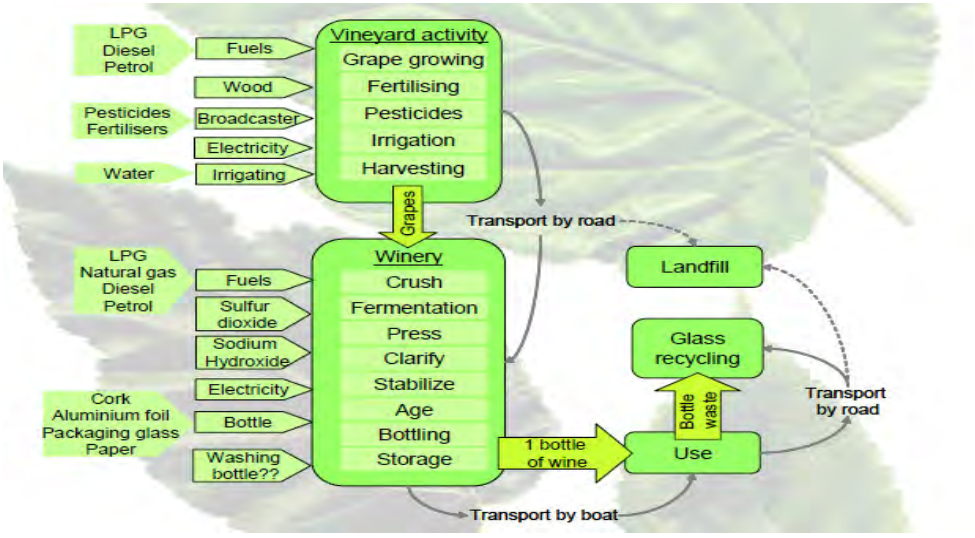

Figure 2. Process Flow Diagram for wine production

Source: Gonzalez A., at all 2006

REINDUSTRIALIZATION STRATEGIES

If more detailed analyzed the proposals for reindustrialization discussed in chapter 3.1, then conditions, such that one reindustrialization must meet, presented in chapter 3.2, there is a need to offer a strategy for reindustrialization of Serbia. In this sense, the authors propose a Model for analysing strategies for reindustrialization of Serbia, that can contribute to better review, this otherwise very complex problem. Model for analysing strategies is based on Theory of Catastrophes (Milačić RV, 1993). Without going in further explanation of the theoretical approach to modeling, in Figure 3 are analyzed possible Strategies for Serbia.

Model for analyzing strategies assumes a multi-dimensional space that consists of the following dimensions: employment level (Z), the level of investment (I), the level of technology (T), a technology platform (P), ecological environment (E). So each point of this space represents the state vector r = {Z, I, T, P, E}. Mentioned multiple dimensional space can be represented in 2D appropriate interpretation as was done in Figure 3. On one horizontal axis is applied dimension Z, the level of employment (which takes values low and high), on second horizontal axis is applied dimension I, the level of investment (that takes the values low and high), while the vertical dimension represents the level of technology (which takes values high tech, medium tech and low tech). Other dimensions of this space due to the limitations of available display are omitted but will be presented in the table which explains possible strategies (Elyas et al., 2012).

The starting point of strategy is marked with **a**, (for example, actual state) in which the state vector **r** takes the following values: low level of employment, low level of investment, low tech technology, existing platform, low ecological environment. Possible strategies are represented on figure with paths between two points in space.

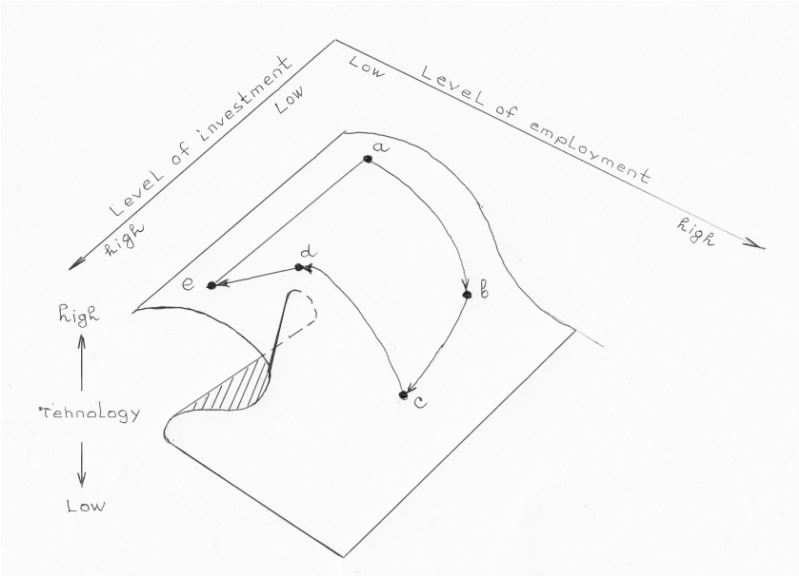

Figure 3. Model for analyzing reindustrialization strategies

In Figure 3 are presented only characteristic points of space a, b, c, d, e, while their corresponding state vectors are presented in Table 2.

Table 2. State vectors r={Z, I, T, P, E} of characteristic points

Characteristic points of space	Dimensions of space				
	Z	I	T	P	E
a	low	low	low tech	existing	low
b	medium	low	low tech	existing	low
c	high	medium	low tech	existing	medium
d	high	high	high tech	new	high
e	high	high	high tech	new	high

In Table 3 are presented strategies defined by characteristic points within space of reindustrialization, shown in Figure 3.

Table 3. Possible strategies of reindustrialization

Strategies	Description	Remark
a-b	The strategy is based on measures of the government concerning the improvement of the business environment	Change of dimension Z from low to medium
b-c	The strategy government based on the participation of employment in an amount of 5 to 10 thousand euros per employee at foreign investors. Increases employment and foreign investors are introducing ecological standards	Change of dimension Z from medium to high, as well as E from low to medium
c-d	The strategy is based on joint venture with foreign investor. Do not increases employment to a greater extent, large investments, introduces new technology on a new technology platform and introduces eco standards	Change of dimension I from medium to high, T from low tech to high tech, and E from medium to high
d-e	The strategy is based on joint venture of state with (or without) domestic, foreign and diaspora investors. Do not increases employment to a greater extent, large investments, introduces new technology on a new technology platform and introduces eco standards, but favoring its own product development and engagement of domestic science	No change in dimensions

Presented strategies do not exhaust all the possible strategies that can be created with the help of model shown in Figure 3.

CONCLUSION

In this paper, the authors have discussed the issue of (re) industrialization of Serbia, which assessed as necessary, and that represents an effective way to solve current unemployment in Serbia.

For the causes of negative economic trend in the last 20 years in Serbia, are perceived mega crisis, and therefore in paper is analyzed their influence, with a special emphasis on the industrial sector of Serbia (Knezevic et al., 2013).

It was concluded that the immediate cause of acute unemployment in Serbia is crisis in the Euro zone, and the consequent recession in European Union countries, and were also presented the consequences derived from mentioned crises.

Explored are possible ways of reindustrialization, and on this occasion identified the relevant conditions (criteria) that it supposed to fulfill, namely: business environment, employees, applied technological platforms, as well as the ecological environment. From listed conditions is particularly apostrophized the ecological environment, within which are defined standards, which must be implemented within the framework of reindustrialization, especially standards ISO 14040 (64), and their introduction is viewed as a potential major problem of reindustrialization(Sljivic et al., 2012).

As a useful tool in defining strategies of reindustrialization was developed Model for analysing strategies, which takes into account the five relevant dimensions (the level of employment, the level of investment, the level of technology, technological platforms and ecological environment). The model can help decision makers in selecting meaningful strategy of reindustrialization in Serbia which main goal is to open green jobs.

REFERENCES

[1] Babić B., 2013., To whom is debt an evil friend, Politics, taken from the on-line edition on 4th May 2013. http://www.politika.rs/rubrike/Sta-da-se-radi/Kome-je-dug-zao-drug.sr.html

[2] Bušatlija M., 2013., The loudest are the ones who didn′t go that direction, Politics, taken from the on-line edition on 4th May 2013., .http://www.politika.rs/rubrike/Sta-da-se-radi/Najglasniji-su-oni-koji-nisu-isli-tim-pravcem.sr.html

[3] Đuričin D., 2013., To reindustrialization fits tight and realistic course, Kopaonik business forum, Today, 13-15th March 2013.

[4] Elyas. G. M, Ansari M, Mafi V: IMPACT OF SOCIAL CAPITAL ON THE IDENTIFICATION AND EXPLOITATION OF ENTREPRENEURIAL OPPORTUNITIES, International Review (2012 No.3-4), pp. 5. ISSN 2217-9739, COBISS.SR-ID 192516620

[5] Finkbeiner1 M., Inaba A., Reginald B.H. T, Christiansen K., and Hans-Jürgen Klüppel HJ., 2006., The New International Standards for Life Cycle Assessment: ISO 14040 and ISO 14044, ISO 14040 and ISO 14044

[6] FP 2012., Foreign Policy, The 2012 Failed States Index - Interactive Map and Rankings, taken from the Internet on 8th May 2013., http://www.foreignpolicy.com/failed_states_index_2012_interactive

[7] Gonzalez A., Klimchuk A., and Martin M., 2006., Life Cycle Assessment Of Wine Production Process: Finding Relevant Process Efficiency And Comparison To Eco-Wine Production, Group 4, Life Cycle Assessment: Wine vs. Eco-Wine

[8] KnezevicV, Kvrgic G, Ivkovic: Serbian Modern Economy – regional comparative analysis, International Review (2013 No.1-2) ISSN 2217-9739, pp. 7. COBISS.SR-ID 192516620

[9] Krstić M., 2009., Innovation - Theory and Practice, tutorial, ICIM+, Kruševac

[10] Media Centre, 2012., Reindustrialization of Serbia, Panel - discussion NIN focus, www.mcrs/reindustrijalizacija-srbije.4.html?eventID=8743#report

[11] Milačić R.V., 1993., Competitiveness of the nation and globalization of the development, JUPITER - system, Book 1, Belgrade., 1993.

[12] Milačić R.V., 2009., Mystery of economic growth and decay of the state – the time of mega crisis, Competitiveness and globalization of industry, Book 4, Belgrade, 2009.

[13] Milićević D., 2013., Rent principle before production, taken from the on-line edition on 4th May 2013., http://www.politika.rs/rubrike/Sta-da-se-radi/Rentni-princip-ispred-proizvodnje.sr.html

[14] Petrović B.P., 2013.1, Instead of capital machinery remained holes, Politics, taken from the on-line edition on 4th May 2013. http://www.politika.rs/rubrike/Sta-da-se-radi/Umesto-kapitalnih-masina-ostale-su-rupe.sr.html

[15] Petrović B.P., 2013.2, We destroyed factories that we have developed for decades, Politics, taken from the on-line edition on 4th May 2013. http://www.politika.rs/rubrike/Sta-da-se-radi/Preradjivacka-industrija-je-nasa-tradicija.lt.html

[16] Radivojša, 2013., For the salvation from debt slavery, Politics, taken from the on-line edition on 4th May 2013. http://www.politika.rs/rubrike/Sta-da-se-radi/Za-spas-iz-duznickog-ropstva.sr.html

[17] Savić Lj., 2013., Set priorities on level of products, Politics, taken from the on-line edition on 4th May 2013. http://www.politika.rs/rubrike/Sta-da-se-radi/Odrediti-prioritete-na-nivou-proizvoda.sr.html

[18] Seeger, M. W.; Sellnow, T. L.; Ulmer, R. R. 1998., Communication, organization, and crisis, Communication Yearbook 21, 231–275.

[19] Sljivic S, Vojteski-Klijenak D, Pavlovic S : Solvency and Profitability of Serbian Industry, International Review (2013 No.1-2) ISSN 2217-9739, pp. 29. COBISS.SR-ID 192516620

[20] Šljukić M., 2013., Five ways of workers′ getting around, Politics, taken from the on-line edition on 4th May 2013. http://www.politika.rs/rubrike/Sta-da-se-radi/Pet-nacina-radnickog-snalazenja.sr.html

[21] Šljukić M., 2013., Left on their own, Politics, taken from the on-line edition on 4th May 2013. http://www.politika.rs/rubrike/Sta-da-se-radi/Prepusteni-sami-sebi.sr.html

[22] USAID, 2012., Post-crisis model of economic growth and development of Serbia 2011-2020.

[23] Vis S., 2013., Deceptive glow of shopping malls, Politics, taken from the on-line edition on 4th May 2013. http://www.politika.rs/rubrike/Ekonomija/Varljivi-sjaj-soping-molova.lt.html

[24] Wiki 2013.2, European sovereign-debt crisis, taken from the Internet on 8th May 2013. http://en.wikipedia.org/wiki/European_sovereign-debt_crisis

[25] Wiki, 2013.1, taken on 8th May 2013, Definition of a crisis, taken from the Internet on 8th May 2013. http://en.wikipedia.org/wiki/Crisis

MILITARY - PUBLIC - PRIVATE PARTNERSHIP AS A FUNCTION OF SUSTAINABLE DEVELOPMENT OF GREEN ECONOMY

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Abstract: Centuries of global trends, painted and exclusively motivated by profitable rules of behavior clearly indicates a close connection between the development of the global economy and the destruction of the global environment. As a consequence of uncontrolled and indiscriminate exploitation of not only natural, but also all other available resources "ecological balance" has long been compromised and spaceship earth has been filled to the limit of its ecological features (environmental disasters), because of these we are increasingly losing control of it (Ehrilch, 1970).

Irrespective of the various theoretical understanding of how to achieve ecological balance of the fundamental solutions and concrete way out of the current situation requires rapid "social" changes in relation to the production and development of the "dirty technologies", environmental protection, institutional sanctioning of responsible actors, overcoming conflicting interests and other factors of importance for overcoming the current environmental situation.

The aim is to identify the elements of a military system that the military model of public-private partnerships can be in terms of sustainable green economy.

Key words: Military Real Estate, Conversion, Green Economy, Environmental Protection

JEL classification: Q50, O13

UDC 355.02:502(497.11)

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INTRODUCTION

Even today, as in the time of ancient Rome, no one is fighting for the so-called "democratic change" but only for economic benefits. The problem is that this reality has a very high environmental cost price.

History teaches us that there has always been a tendency of powerful countries to govern the world stage, to win the neighboring and distant territory and with the great power and weapons to impose "just democratic order", the dictated way of life and work, the value of life, their culture, beliefs and laws, of course, in the interest of their nation, especially the ruling elite and in order to gain large profits, free labor and cheap natural resources from the "conquered" countries (Kajtez, 2009).

Although often presented as a only economic phenomenon, globalization should be viewed in the broader context and as a process of politics, economics and society in advance"designed model" by famous designers who build their international position on the basis of economic power and military force. It should be kept in mind that this is a very complex phenomenon and the socio-historical process, which includes almost all areas of individual, group and collective human existence. In this context, the most important dimensions of globalization are economic, political, ideological, cultural, military, geostrategic, and environmental dimensions. And because of that fact, no one is completely protected from the impact of good, hard and fatal planetary processes of globalization (Kajtez, 2010). Also, the devastating effects are primarily embodied in long established economic imbalances through "imposed" conditions in order to maintain the current globalized development.

The experience has shown that the military system has a significant impact on the overall national development. In the current conditions, also, the military system is exposed to constant changes, and as the military system reform processes have many common characteristics that follow the process of restructuring the national economy, which are not shown successfully in our system at all, starting from the high rates of unemployment up to critical external indebtedness. From the perspective of the restructuring of the military system "fortunate circumstance" is the fact that it has always been operating as a bureaucratic model of organization design, so in the past it did not "actively monitor" the transition process of the national economy.

THE RESULTS OF THE IMPLEMENTATION OF THE MASTER PLAN (CONVERSION OF MILITARY ASSETS)

In June 2006 the Government of the Republic of Serbia adopted the Master plan that institutionally establishes conversion and alienation of 534 military facilities, and other military assets that include military clubs, army barracks, recreation and tourist centers, airports, warehouses, polygons, practice sites and shooting ranges, land, ports, military economy, and many other real estate for various purposes. The plan provides that the conversion or alienation of the military assets should be realized through tender sale or exchange with institutions that use assets of the state, or through the investment in the joint construction of apartments, with the commitment of the Government of the Republic of Serbia to offer the surplus of military property first to the local government and municipalities on whose territory the military real estate exists.

In the period since the adoption of the Master Plan the conversion has been carried out as alienation of 89 military estate, of which 36 military facilities and other real estate (40%) was alienated without compensation (Figure 1).

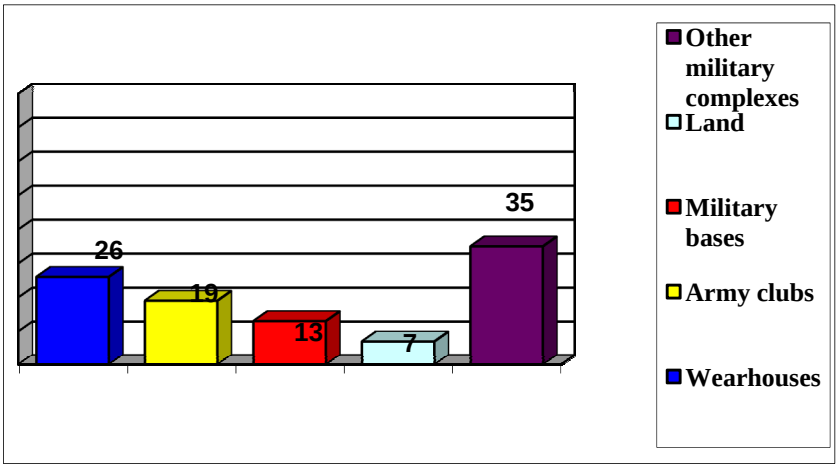

Figure 1. Structure of alienated military property by 2012

Source: Authors

The highest number of alienated military facilities, was related to the military warehouses, clubs and military barracks, while the other part consists of land, shooting grounds, polygons, boundary complexes and other military property. Conversion or alienation of most of the military assets was realized on the basis of financial transactions (73.6%), while for the smaller part, compensation was made using the allocation of living space (13.2%) and for the rest, the combination of the

first two methods were used (13.2%), with a total financial effects of which are shown in Figure 2.

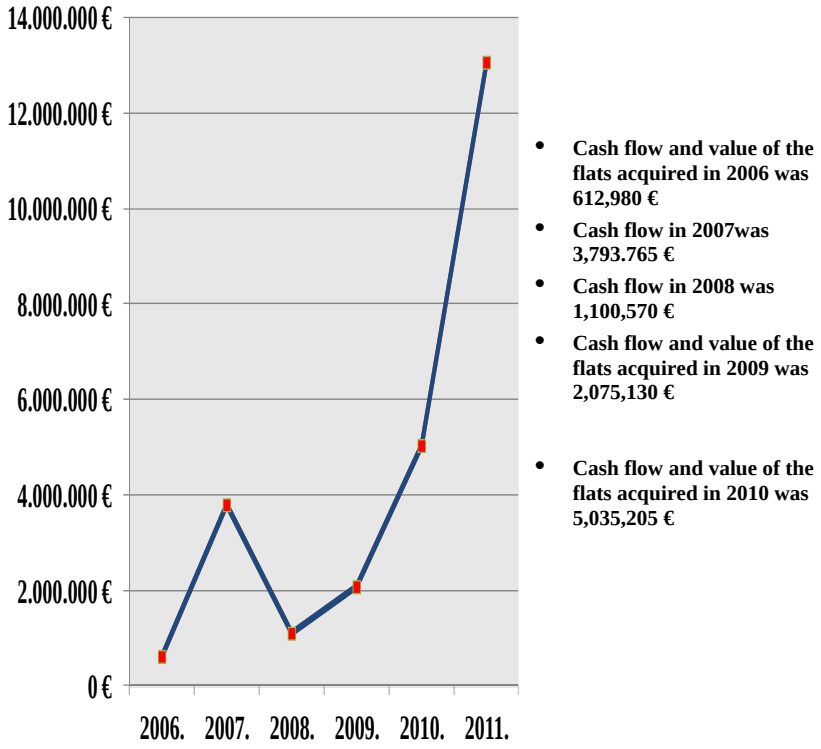

Figure 2. Actual income from alienation of the military complex

Source: Authors

The total value of the conversion from the 2011was about 25.7 million euros, and in the 2012was about 1.3 million euros (excluding the financial effects on the realized conversion of the building housing settlements in the former barracks "Vojvoda Stepa Stepanovic" in Belgrade, according to which and based on the conclusion of the Government of the Republic of Serbia, Ministry of Defence belongs 21% of the gross area of the newly-built location of the barracks or at other locations in Serbia). For the first 5 years of the implementation of the military part of the Master Plan,the oscillating tendencies were characteristic, and it can be concluded that the average revenue of 2,523,515.00 euros annually was achieved, which in any case does not represent a significant income in the resolution of the real needs of defense and Army of Serbia. In the 2011 a total revenue of about 13 million euros was generated, but it should be noted that this was a "pre-election"

year when the significant budgetary funds were directed to the local authorities and the most of them, or 59 of 79 municipalities (about 75%) responded positively to the bid of the Ministry of Defence on the conversion of military assets located in the territory of the local government. This proves that 2012, given that the total income was 1.3 million euros, with the fact that the sale of "military" and "civilian" apartments in the residential area of the former military barracks "Stepa Stepanović" in Belgrade, despite the institutional incentives was far away from the expected interest. Probably for that reason no valid data is available and also the results of achieved conversion of the military complex.

Compared to some opinions about "overestimated" value of the military assets and the negligence of social interests, the facts indicate otherwise (Figure 3).

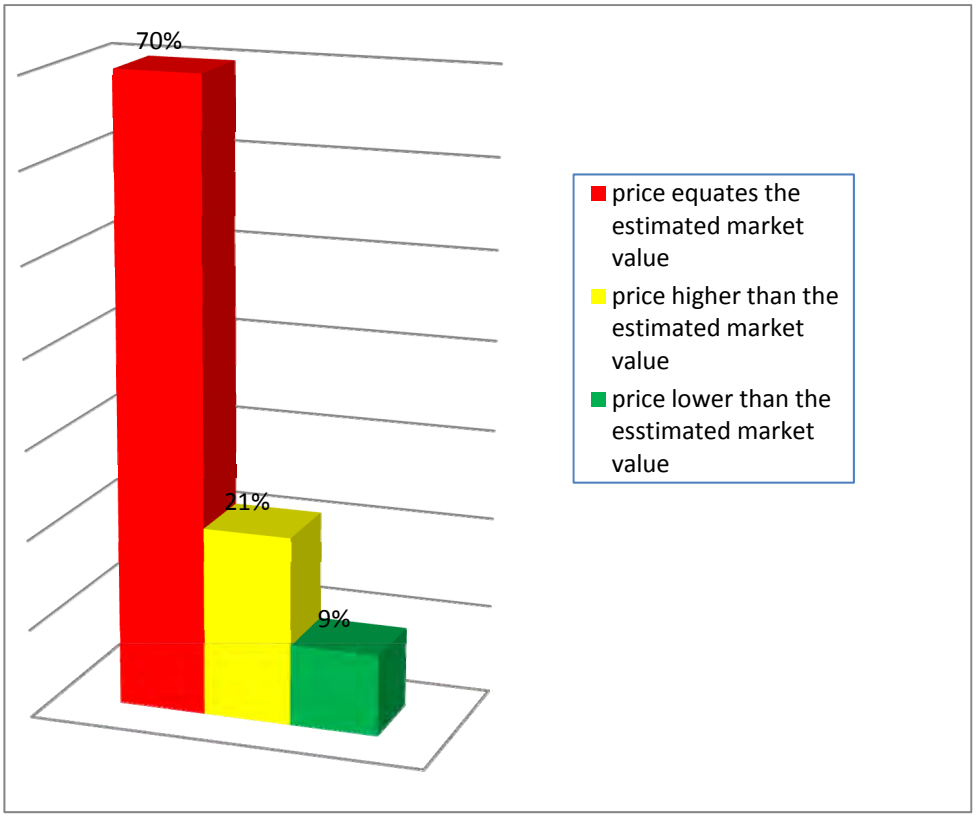

Figure 3. The conversion of military assets and the estimated market value

Source: Authors

For the majority of the military real estate conversation was made as alienation at a price equal to (70%) or even higher than the estimated market value (21%), while a very small number of military assets were alienated under the estimated market value, with a percentage share of 9 % of the total number of alienated

property. Nevertheless, the achieved financial effects are extremely low compared to the expected social benefits.

From the foregoing, it can be concluded that the Master plan of the Republic of Serbia, in part related to the alienation of military facilities, and other military assets (clubs, army barracks, sports and recreational and tourist centers, airports, warehouses, polygons, practice sites and shooting ranges, land, ports, military, economy, etc..) by 2012 was implemented with 11.59% of the total anticipated conversion and without significant financial impact due to their insignificant value for a period of 6 years (under 5 million annually). This indicates that, for the military property, broader interest was not shown, so that most of the military assets (445 military facilities, buildings and other real estate) remain "saved" in the military property, with the structure shown in Table 1.

Table 1. The structure of the alienated military assets

Military real estate	Number	Military real estate	Number
land	118	command	8
warehouse	94	mini hydro power plants	6
barrack	47	flats	6
Serbian Military Club	28	sports and recreation center	5
LNG facility	23	military farm	4
polygon	21	military resort	2
shooting range	16	restaurant	1
practice site	16	health facility	1
airport	8	port	1
commercial facility	8	other	32
Total	279	445	66

Source: Authors

Independently of the reasons why there was not more to convert a large number of military assets in the previous period, and in terms of the subject matter, 292 military assets could be identified (2/3 of the total) that could potentially be a part of supporting "green economy" and "protection of environment ", as follows:

1. **Military land** of 118 land parcels, total area of 805 ha with an estimated value of 39 parcels to the amount of 8,081,676.00 euros;
2. **Warehouses** with 94 buildings with a total area of 138,862.00 m², which are located in an area of 432 ha with an estimated value of 38 facilities in the amount of 20,576,027.00 euros;
3. **Military training area** in 21 locations with 36 buildings with a total area of 11,774.00 m² which are located in an area of 661 ha with an estimated value of 6 polygons in the amount of 22,820,155.00 euros;

4. **Military drill field** in 16 locations, covering a total area of 166 ha with an estimated value of 4 practice sites to the amount of 341,378.00 euros;
5. **Military shooting ranges** at 16 sites with 32 buildings with a total area of 3938.00 m² which are located on an area of 208 ha, and still, there is no estimated value of any shooting range;
6. **Military industrial facilities** with 108 individual capacities total area of 69,021.00 m², located at 8 sites with total area of 73 ha, and still, there is no estimated value for any military commercial facility;
7. **Military mini hydro power plants** in 6 locations without the assessment for any of the mini-hydro power plant;
8. **Military sports and recreation centers**, with 19 individual capacities, with total area of 2,620.00 m², located at 5 locations (total area of 4.7 ha) with the valuation for one sports and recreation center to the amount of 1,068,997.00 euros;
9. **Military economy** with 6 buildings, with a total area of 706.00 m², located at 4 destinations, the total area of 173 ha with the valuation of a military economy to the amount of 9570.00 euros;
10. **Military tourist complexes** with 2 accommodation capacities of 570.00 m², located at 2 destinations with the total area of 0.63 ha and with the valuation of a military tourist complex to the amount of 12,850.00 euros;
11. **Military catering facility** with 5 individual capacities with total area of 2906.00 m² and are located on the surface of 1.3 ha and without the assessment;
12. **Military port area** 1.28 ha with the valuation in the amount 70311.00 euros.
13. For most of the military assets that can be in terms of sustainable development and green economy, even after more than 6 years of the implementation of the Master Plan of the Government of the Republic of Serbia, has not yet been a full assessment of the value of military real estate (Figure 4).

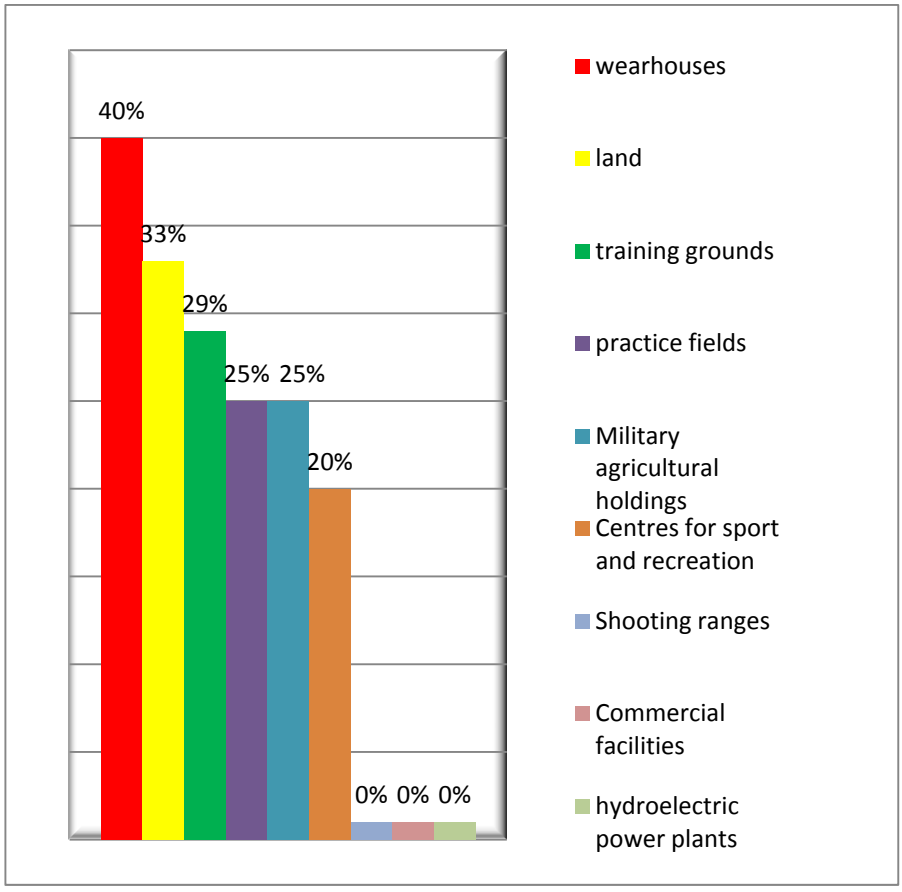

Figure 4. Assessment of the alienated military assets

Source: Authors

By April 2013 the evaluation has been made for 91 military real estate (31% of total) which involves not only not-updated property documentation, but also a long period of time of obtaining the necessary documentation from the Ministry of Defense, the Army Serbian Tax Administration, Ministry of Finance, the Republic Directorate for Property and competent authorities of local government. The largest number of completed assessments was related to military warehouses, military land and military polygons, and much smaller number of military drill field, military economy, sports and recreation centers, while the military commercial facilities, hydroelectric power plants, warehouses and other military real estate has not yet been estimated at market values.

In relation to the performed assessment of the real estate, it can be concluded that the total estimated market value is 52,971,394.00 euros, according to the structure shown in Figure 5.

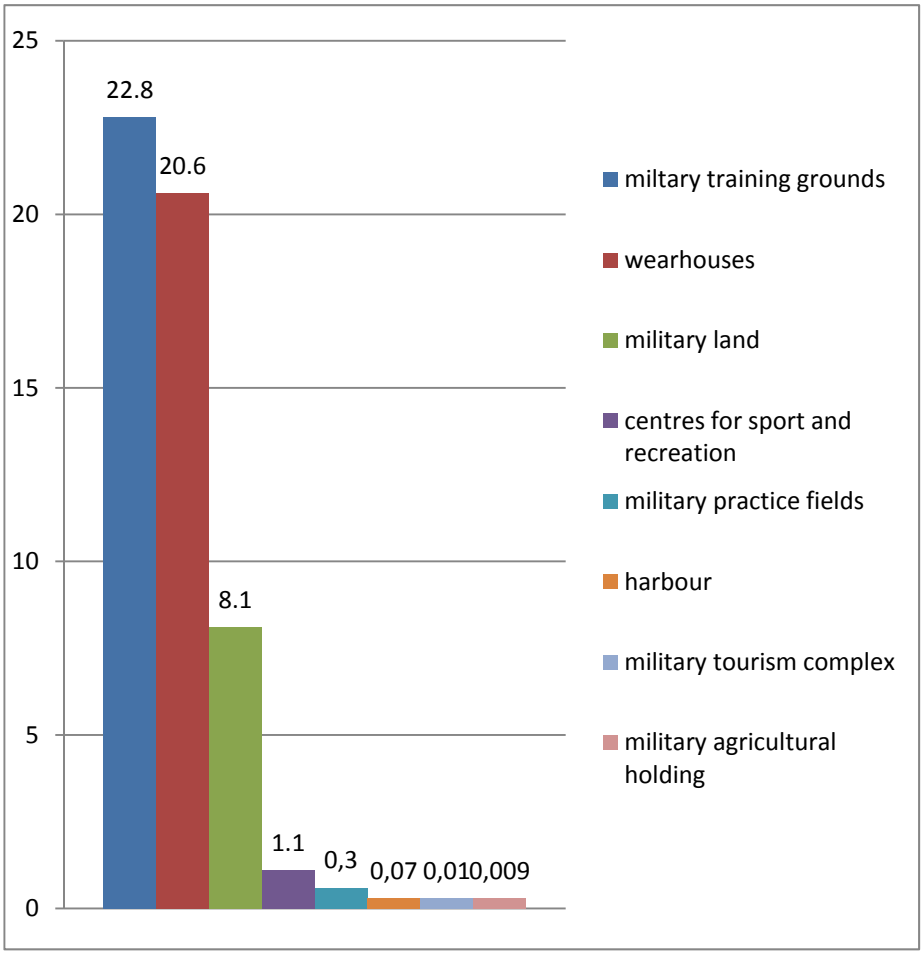

Figure 5. The structure of the estimated military assets

Source: Authors

Significant market estimated value of the military assets refers to military training grounds (about 22.5 million), military warehouses (about 20.8 million euros) and the military land (about 8 million), which is about 97% of the total estimated market value of military property. For these reasons, the question arises, whether it is really necessary for society to give up significant military assets at relatively lowprice, that could be just tens of millions of euros, especially if we take into consideration external debt, measured in billions of euros which caused critical line of external debt of the Republic of Serbia.

Finally, the fact that the Master Plan of the Republic of Serbia, in part related to the alienation of the military complexes and other military assets was implemented without significant financial impact by 2012, this indicates the need for "new and rational" solutions, one of which assumes military public-private partnership. Since such a cooperation, as opposed to the privatization process, does not involve a permanent change of state or social property "at any price", which retains possibility for appropriate military real estate and with appropriate institutional support to lead towards developing a green economy and environmental protection.

MEETING THE NEEDS OF THE PRESENT AND NEW SOLUTIONS (MILITARY - PUBLIC - PRIVATE PARTNERSHIP)

In the existing situation of long-term state insolvency, lack of budgetary and other financial resources, critical level of foreign debt and the need for new investments in the infrastructure, the private sector share in investment and development programs through partnerships with the public institutions is gaining in importance.

In a broader sense, the public-private partnership involves the implementation of all possible types of cooperation between public and private partners through joint ventures, in order to create the most effective way to satisfy social needs, with the division of investment, risk, responsibility and profit among the partners.

Compared to standard procedures, methods and possibilities of budgetary financing of projects of public interest, as the main advantages of the military in public-private partnerships can be specified:

- wider possibilities of modernization and upgrading military infrastructure and military service by hiring a private partner in order to support sustainable development of green economy;
- the transfer of modern technology and equipment by the private partners, in relation to the available technology and equipment, with respect to standard practices and procedures for the protection of the environment;
- stimulating credit support to military-public-private investment projects with the support of international institutions that deal with the development of the green economy and environmental protection;
- the importance of regulatory and control functions of local government in the implementation of procets of military-public-private partnerships through environmental protection in the territory of the local government and the development of green economy.

Given the differences that characterize many partners of public, military and private sector such as social importance, ownership status, type of activity, specificity of organization, accountability and other characteristics, and therefore contracts or agreements about possible partnerships may edit content through customized forms, depending on the set of obligations, risk sharing, agreed ways of financing and income distribution, and other agreed activities of social interest and needs of the military system.

The results of privatization confirmed the fact that this process had never had the title of "successful", and therefore it was realistic to assume that the privatization of the military system would have not achieved the socially expected results.

In economics there is no objectively "regret, forgiveness and understanding". The previous holders of institutional decision-making obviously did not understand that, and in its "institutional cynicism", they became larger social and individual losers. And exactly because of, so far, inadequate institutional approach in addressing economic, social and other problems, one of the "potential favorites" in future is the military-public-private partnership deal.

The experience has shown that many arrangements of public-private partnerships have extremely complex business relationships. Projects implemented through arrangements of public-private partnerships are funded mainly by the foreign private partner, with the transfer of risk on his account and the right to use and collection services in accordance with agreed arrangements, including taking responsibility for the design, construction, financing, and technical and commercial handling and maintenance of the real estate. In addition, the main characteristic of this bussiness is an important fact that the competent institutions of the system play a crucial role in dictating the terms and conditions of business during the implementation of a joint partnership.

POSSIBLE MILITARY CAPABILITIES IN THE FUNCTION OF THE MILITARY ESTABLISHMENT OF PUBLIC-PRIVATE PARTNERSHIPS

The key question is what is a social benefit of disposal of military property for tens of millions of euros while we are in the external debt of tens of billions of euros for a long time in "red zone"?

When it comes to attitudes toward the state and public property, it is certainly true that the military sector is far more "responsible" than civil sector in respecting and adherence to the prescribed rules, related to environmental protection. For example, the prescribed military procedures for storing hazardous toxic substances and their control are subjected to the obligation of respect the adopted laws and regulations, not only, of the civil institutions of the system, but also additional control mechanisms of the potential security risks issued by competent military authorities or the Minister of Defence and the Chief of the General Staff of the Serbian Army.

Most military real estate is located at sites with highly developed transport and other infrastructure, making them, in terms essential, an attractive business and other destinations to potential investors.

The experience has shown that the military sector has always been the "first" in the implementation of innovative solutions for the application of advanced technologies and adjusting to the modern needs of the time. Is the potential institutional "attempt" to put a part of military assets through a "pilot" projects and programs put in function of the green economy and environmental protection socially rational. For example, during the former Yugoslavia along the river border with Romania on the Yugoslav side of the Danube were numerous military watchtower, which was the same case at the Romanian side. Today, on the Romanian side, instead of military watchtower, dozens of windmills at the latest features and capabilities can be seen, while on our side "appear" abandoned military installations that may have the same or similar purpose as in "solar" and other ecological systems.

In seeking the way out of the current situation military system may have an important role, given the available resources. In the former Yugoslavia, the military-economic sector was the main driving force of social and economic development, which was attended by approximately 160 civilian companies in the status of "finishers" and approximately 400 civilian companies in the status of "subcontractors". At one time, the elite military households in the Republic of Serbia were with the agricultural land of 7,833 ha, 3,982 ha of forest area and the existing pigs, beef cattle, chickens, etc (Tešanović, 2002). From such a representative size only the announcement of better times remainded with the memories that the agricultural production could settle not only the military but also the social needs of many agricultural products. Independently from fact that the former President of the Republic of Serbia in the guestbook of military institution "Karađorđevo" wrote "that he will restore the former glory of „Karađorđevo" and viewed objectively, it is not done,this also indicates the real potential and capabilities of military-agricultural complex. Is there, for these reasons, a social interest in the permanent alienation of such a military complexes or it is more rational for such complexes to be "activated" by the military-public-private partnerships (on the principles of win-win solutions and "Asset Management") for the production of organic and healthy food on the selective European and world market that is much more expensive than the "classic" food. In any case, it is realistic to assume that the proposed way of dealing with military households would give better long-term results than the traditional sale of agricultural land to "Abu Dhabi". In addition, through military-public-private partnership, for "Abu Dhabi" "the doors are wide open" for the development of "brotherly relations" with Serbia.

And finally, when it comes to the military real estate and their representative capacities, it is necessary to point out the following:

In the organizational structure of the Ministry of Defense, there are three military institutions that contribute the realization of logistic support of the Army

of Serbia and satisfaction of its needs in general logistic needs and their activities in the field of tourism and hospitality and hunting and forestry activities, such as: "Karađorđevo", "Tara" and "Morović."

In the vicinity of Backa Palanka, there is a special nature reserve "Karađorđevo" with about 3,000 ha, whose natural and other values are autochthonous big game trophy value (fallow deer, mouflon, Virginia's white-tailed deer, etc.), ornythofauna with over 130 species birds, of which 67 have the status of natural rarities (white-tailed eagle, black stork, peregrine falcon, owl marshy, etc.), a mosaic of forest and marsh-wetland plant communities with the domination of forests (77%), and natural spawning of many species fish. In the hunting ground Karađorđevo superior results and world-trophy were achieved: mouflon with 242 points, fallow deer with 210 points, american deer with 419 points, marsh deer with 232 points, 24 points badgers and wild boar with 137 points, which is classified as a hunting ground most representative international hunting. Within the complex, there are 16 man-made lakes, a rich variety of fish and trophy specimens. Karađorđevo is known for its state "mystique" as former presidents of Yugoslavia, FRY and Serbia, as well as the highest foreign politicians and officials were staying in the complex.

Military, tourist and other facilities at Tara are located in the complex of Tara National Park, which with the buffer zone covers an area of 37,584 ha, of which 13,000 ha of preserved forest of fir, spruce, beeches and pine trees with 1019 plant species (Pancic spruce, yew, cyclamen, wild lincura, etc.). Animal world is very diverse, with over 200 specimens of birds, mammals and fish. On the slopes of Tara over 100 species of birds found their permanent or temporary habitat, the most famous are golden eagle, the griffon vulture, peregrine falcon, great owl, capercaillie and others. Abundance of animal life is reflected in the presence of rare and attractive species such as the brown bear, chamois, wild cats and otters, while in the waters of the Tara River salmon and grayling are present. At one time, during a tour of the complex Etkin Clark, former director of the European Federation for the Protection of Nature and National Parks stated: "this is how I imagine heaven".

One of the attractive destinations is certainly complex "Morović" with the great potential to develop hunting and fishing tourism. It covers an area of about 18,000 ha, mainly under the oak forests. Hunting grounds "Nepričava", with an area of about 3,500 hectares, are an ideal area for the wildlife habitat of various species, such as red deer, fallow deer, wild boar, wild duck and others. Within the complex there is a pond "Brek" where many species of fish are prevalent carp, pike, amur and silver carp.

From the aspect of the sustainable development of the green economy and environmental protection, any further comment would be superfluous.

CONLUSION

Requirements of modern times indicate the need to recognize long-term social benefits from the sustainable development of the green economy and the environment at the national and therefore at the global level.

In principle, the ratio of the green economy and the environment depends essentially on the institutional behavior, options in government and their "economic" position and power in solving economic and social problems.

In order to solve environmental problems "time" is an important factor of "success" and it's well known who was responsible for the catastrophic situation in the area.

Current global processes embodied in globalization and internationalization of the escalation of possible environmental threats affect all countries in the world of which will not be spared either the United States, Russia and all other countries of the world, depending on the distance of the "epi center", as it was the case during the nuclear disaster in Japan. It's all part of the whole and the whole of parts, it's part of the game and the game of parts. After all, it is time to get rid of the illusion that someone else is going to solve the problems for us. If global trends are changing the world, then it is also logical to change the "understandings", that does not support the future generations.

The experience has shown that anyone who has a vision of "clear goal" - each time it is good. Construction and functioning of a successful sustainable development of green economy is a process, not a partial action at the time of necessity. This requires the existence of a "sincere" institutional willingness and support of decision-makers with the possessions of quality, that can "feel" a sustainable future and ways to reach it.

Creation of neo-liberal economic environment in the Republic of Serbia substantially contributed tomany businesses and the economy itself to face with the real situation of their survivalin this economic terms. The results showed that the applied concept was not proved to be successful and that in fact it was a function of economic stagnation and high rates of unemployment. Is it realistic to expect,in such a situation, to be "somebody" in Serbia who deals with the green economy and environmental protection?

The modern concept of the organizational design implies that systems with specific purposes and with special social significance are state-owned and state-controlled. The defense system, due to its characteristics, is a bureaucratic model of organization design that fits the "metaphor" of the machine where everything goes according to a predetermined schedule and procedure of the constructors of the machine, where each part knows its role in the work. Also, the professionalization of the employees' behavior in organization is one of the most important features of the bureaucratic organizational model, which includes "inviolable" respect for

professional standards and ethics in the preservation and maintenance of military assets.

Despite the critics that have found "anchor" in the "bureaucratic behavior", this model has shown many substantial advantages that enable it to be widely used in practice due to efficiency of the functioning (specialization of labor in the operational sphere), reliability (very stable results, which do not depend on the personnel changes), and the ability to control and manage (centralized approach).

In a situation of institutional imposition of many solutions "at all costs" defense system, thanks to the "bureaucratic model" of functioning, kept its ownership of military property, and it was probably one of the "positive" reasons of unsuccessful conversion, or disposal of the military assets of only 12%, compared the total number in recent years. In other words, the privatization of military assets was avoided in the way that it is done in the civilian sector. At the same time, thereby the basic conditions for thinking about the other and more rational solutions related to the military assets were created, primarily for the benefit of the general social interest.

REFERENCES

[1] Ehrlich A. (1970), Population, Resources, Environment – Issues in Human Ecology, Freeman, San Francisko, p.3.

[2] Kajtez I., (2009), Društveno-istorijski uzroci propadanja imperija – slučaj slavnog Rima, Vojno delo 2/2009, Beograd, str. 254.

[3] Kajtez I., (2010), Da li je globalizacija kriva za sve nesreće sadašnjeg sveta, Godišnjak Fakulteta bezbednosti, Fakultet bezbednosti, Beograd, str. 61.

[4] Tešanović B., (2012), Ekonomski aspekti razvoja ishrane stanovništva i Vojske Jugoslavije, Institut za agroekonomiju, Poljoprivredni fakultet, Beograd, str. 50.

SERBIA AS AN AGRICULTURAL COUNTRY

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Abstract: Agriculture is an industry that deals with the exploitation of soil and breeding of useful plants and animals. Manufacture of vegetable and animal products and their primary level processing provides food for humanity and human survival on earth. Serbia for its geographical position and agricultural potential is one of the agricultural countries. The author wants to show that it is no wonder and national disgrace being an agricultural and agrarian country. If 70% of the total waste in agricultural soils it is potential and competitive advantage that each country must take advantage of. The author also recognizes that every day on planet Earth thousands of people, many of whom are children die of hunger and for that reason it is national, social and civilizational responsibility to produce foof wherever it is possible.

Key words: Agriculture, Food, Potential, Competitive Advantage

JEL classification: Q10, Q13

UDC 338.43(497.11)

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INTRODUCTION

In the world in 1960, there were three billion people, and since 2011. The Earth inhabited by seven billion people. This number is constantly increasing, so it can be expected that the in 2030 on the planet Earth to live about eight billion, and 2050 about nine billion people. One of the conditions to remain human life is production of food. If we take into mind the above data and trends then in front of agricultural production in the future tense very important tasks are set.

Why ? Because in the world of today there are many hungry people. So if we look at the fact that the planet earth is inhabited by seven billion people and of those 7 billion in 2007 923 millions, 2009 1,02 billion, 2010 925 millions, 2012 870 millions are hungry, then reasonably must be assumed that the increase population will also increase the number of hungry. And another question that also arises: Is today's civilization at this stage of development should allow people to die of hunger? The answer to this question by the author of this article is a big NO. The experiences of certain countries in food production, (Israel, Netherlands) produce large quantities of agricultural products (food) without sufficient economic resources for the production. Israel from the desert makes agricultural resources, and the Netherlands is stealing land from the sea. If this is so, and it is then, other countries that have natural resources for agricultural production simply have an obligation to produce healthy food primarily for the needs of their population, and then place the surplus to other countries that do not have enough resources for this production. Country Serbia is among the countries that has great agricultural resources and simply has an obligation to its dominant industry be agriculture.

Agricultural production is a specific production, which largely depends on natural factors such as the size and quality of the soil, relief and configuration of the land, climate and so on [Frohber K. 2005] Agricultural production involves relatively long cycle time so that the necessary combination of manufacturing various types of products whose production cycles of production and the time of collection of revenue do not match. The multiple functions of agriculture and multidimensional, and in one sentence it can be said that agriculture maintains life on Earth. [Stojanović Z., Ognjanov G. I Filipović J. 2010] In fact, without agriculture there is no food for humans, and without food there is no life and is understandable the importance of agriculture. In the world there is a huge number of people who lack food. This means that all surpluses can be exported. But it was not just any surplus but surplus produced by the standards of importing countries24. Agricultural production in the advanced countries is heavily subsidized. Subsidies on the one hand motivate farmers for agricultural production, and on the other hand affects the price drop of these products and their exports to less developed and developing countries. Country Serbia for decades was an agrarian country. Industrialization after World War II did so to the number of residents who are engaged in agriculture for 30 years only reduced by 54% (1948

[24] *Opinion of the author*

73% of the population dealt with agriculture, and in 1981 19%). For such a decrease of the agricultural population in other countries, it takes a lot more time (U.S. and Sweden, 90 years, France 100 years, Japan 73 years, Denmark 130 years, etc.). In Serbia, agricultural production is far lower than its real possibilities and potential.

AGRICULTURAL POTENTIAL IN SERBIA

Country Serbia for its geographical position is part of the Eastern and Central Europe. The northern part of the country belongs to central Europe, where the Pannonian Plain is located. This part is most commonly called ,,the granary of Europe,,. Through the region of the Pannonian Plain flowing two major rivers (the Danube (588 km) and Tisza (168 km) that meets with Sava (206 km) the third large river near Belgrade. In addition to these three major rivers through Serbia also flow and three Morava (Great (185 km), West Morava(308 km) and the South Morava (295 km)), Ibar (272 km), Timok (202 km), Begej (75 km), Nišava (151km), Tamis (118 km, Drina (220 km)

Serbia is the land mass of the Balkan Peninsula and is surrounded by warm seas (Adriatic, Aegean and Black), while in the north leans to the European continent. In addition to geographic location on climate of Serbia also affects relief. It can be said that in Serbia there is continental climate in the north, moderate continental climate in the south, and the mountain climate on the high mountains. Winters in Serbia are short, cold and snowy, while summers are warm. The average annual rainfall is 896 mm. Most of the rainfall is in June and May, and the driest are February and October.

The Republic of Serbia is located in the most favorable area of northern latitude, with four seasons and four climates. Therefore, there are a very favorable natural conditions, suitable soil and climate for the successful development of agricultural production. Natural conditions allow the development of crop and livestock agricultural production.

From these basic data it can be seen that the country of Serbia has all the conditions for agriculture to be the dominant industry. Why? It has arable land and water possesses that can serve as a resource for irrigation.

VOJVODINA – GRANARY OF EUROPE

In the northern part of Serbia, is an autonomous province of Vojvodina (21,500 km ² - 24.3% of Serbia), which belongs in geographical position to the Central Europe and this territory belongs to the Pannonian plain. Through this area the Danube - Tisza – Danube channel (DTD) was built. This channel is a unique canal network connecting streams or rivers Danube and Tisza and a hydro technical system for internal water drainage, irrigation, flood control, water supply, drainage of used water, navigation, tourism, fishing and farming forest. DTD hydro system with natural and partially reconstructed streams has 960 km of which 600 km are navigable. Its network connects 80 villages in Vojvodina, within the system, there are 23 floodgates, five security floodgates, followed by 15 ship locks, five major pumping stations and 86 bridges (64 road, rail 21 and a pedestrian). This channel is an invaluable resource for agricultural production.

Most of the territory of Vojvodina is very good quality arable land. Thus, the potential of Serbian agricultural production is located dominantly in Vojvodina, but not only in Vojvodina, but also in other parts of Serbia.

SERBIA – NOW AND THEN

Until the Second World War, Serbia was an agrarian country. Over 80% of the population lived in rural areas of the country living a traditional way of life [Ševarlić M., Tomić D. 2010, pg 46].. Life of almost every man was reduced to his possession and his family, his village, church and friends. World War II, and especially post war period, the period of socialism and communism destroyed the family's rural areas and agriculture. It was performed the so-called industrialization, taking the land of the peasants by state. All this resulted in the departure of the population from the countryside to the cities.

Serbia is still a poor country. Most of the funds each employee over (80%) goes to the cost of food. Despite the extraordinary potential, Serbia today is not a modern agricultural country. What's almost depressing that Serbia today is a large importer of food. Agricultural production in Serbia is not even close to the European average, despite the extraordinary resources. Today in Serbia, a Serbian farmer produces food for 15 people, in Germany even 152, France 77, Austria 56, Slovenia 25, while in the EU average is between 50 and 80 people! Imagine a paradox: Slovenia which does not have nowhere near good natural conditions for agricultural production, as Serbia does, produces food for 25 people, but Serbia just for 15 people. (Eurostat 2010-11)

One of the positive measures being taken in 2012th by the government of Serbia is the list of agricultural products. The author of this paper believes that the results of the census will be sufficient to present and future Serbian government conceptualize such an economic policy in which agriculture will be the dominant

branch. According to the first census of agriculture of Serbia in 2012th The Serbia has the following agricultural resources (Here are shown just some of the potential).

Table 1: Summary of some agricultural potential of the Republic of Serbia

Ordinal number	DESCRIPTION	Size
1.	agricultural land,	5.113.000 ha
2.	arable land,	3.355.859 ha
3.	Total number of agricultural holdings,	631.122
3.1.	family holdings,	628.555 ili 99,59%
3.2.	Holding of legal entities and entrepreneurs,	2.567 ili 0,41 %
4.	Number of double-axle tractors,	408.734
5.	Faculties of Agriculture,	5
6.	Other faculties,	3
7.	Agricultural Institutes,	10
8.	Graduates of agricultural engineers of different specialties	30.000

Source: Republic Institute for Statistics 2012

It is well known that the economic development of a country should be based on the use of their own and specific resources, or those resources that the country possesses in abundance. Country Serbia abounds agricultural resources, and therefore its STRATEGIC BRANCH SHOULD BE AGRICULTURAL PRODUCTION. In fact, according to the potential agricultural production in creating GDP is not participating as much as it's possible and how it is needed.

Table 2: Summary of participation of agriculture in GDP in the Republic of Serbia

Description	In millions of RSD				Structure in %			
	2008	2009	2010	2011	2008	2009	2010	2011
Agriculture	237.474	218.005	245.127	292.918	8,9	8,0	8,5	9,1
GDP	2.661.386	2.720.083	2.881891	3.208.620				

Source: Republic Statistical Office of Serbia 2012

Considering the agricultural potential, share of agricultural production in GDP is not enough. This situation is influenced by various factors, primarily the lack of consistent agricultural policies, inadequate agricultural budget, insufficient use of irrigation and drainage systems. Although the scientific technical institutions are

producing highly-quality seeds that are adapted to the climate and other conditions in Serbia yield is not satisfactory. Almost every year, a decrease of yield is affected by meteorological conditions. The lack of irrigation systems and drainage systems each year significantly affect the yield both in quantity and in quality. (Zakić Z., Rikalović G. i Stojanović Ž., 2010.).

IRRIGATION AND DRAINAGE

Hydro system Danube-Tisza-Danube Canal was completed in 1977. It is a unique network of canals connecting streams or rivers Danube and Tisza in Vojvodina and represents hydro technical system for internal water drainage, irrigation, flood control, water supply, drainage used water, navigation, tourism, fishing and farming forest. DTD hydro system with natural and partially reconstructed streams has 960 km of which 600 km are navigable. Its network connects 80 villages in Vojvodina, within the system, there are 23 floodgates, five security floodgates, followed by 15 ship locks, and another five ship locks which are not in use, five major pumping stations and 86 bridges (64 road, rail 21 and a pedestrian). Important for this system is that it is designed according to the system of connected vessels which means that as long there is water in the Danube and Tisza channel does not change the water level.

The most important function of the hydropower system is the drainage and irrigation. The total amount of accepted and evacuated water from one million hectares in Backa and Banat is 250 million cubic meters per year. According to the project from hydro system can even irrigate 510,000 ha, but unfortunately it currently irrigates only 30,000 ha. Why? Answer to this question should provide current and future governments of Serbia and Vojvodina.

The construction of hydrosystem DTD defensive lines in Vojvodina was reduced from 502 km to 446 km, and the duration of the flood defense drastically reduced.

A very important role this hydrosystem have for the industry as well. Yearly, in average 40 million cubic meters of water is delivered to industry. Channel is also used for navigation and transport (projected potential is 7 million tons per year), receiving used water and protection of water quality, followed by forestry, fishing, nautical tourism and recreation. Therefore, the existing hydro system is essential for the overall economy in Serbia, but still did not give the necessary results

Why is this unique hydrosystem that was built almost 50 years ago using only 5.8% of the designed system? Because the state of Serbia in the last several decades does not have agricultural policy that potentials require, because the industrial production of non-agricultural production had a dominant role in the past years, because it is applied and applying the wrong concept of privatization(Opinion of the author), because the agricultural policy has no permanent and continuous policy of subsidies and motivation for farmers.

RESULTS OF THE AGRICULTURAL POLICY

The results of agricultural policy in Serbia, among others, are evident if we analyze the size of agricultural land that is owned by a agricultural household.

Table 3: Number of agricultural holdings and areas of used agricultural land

Country	Without land	till 2,00 ha	from 2,01-5,00 ha	5,01-10,00 ha	10,01-20,00 ha	20,01-50,00 ha	50,01-100,00 ha	over 100,00 ha
Serbia	9.486	293.667	184.637	89.749	32.486	12.922	4.243	1.365
	1,5%	**46,7**	**29,4**	**14,4**	**5,1**	**2,1**	**0,6**	**0,2**
EU-27	258.100	5.608.460	2.407.420	1.303.040	900.530	1.164.140		324.840
	2%	***47%***	***20%***	***11%***	***8%***	***9%***		***3%***
Austria	1.080	16.160	30.220	26.590	32.590	40.690		2.850
	0,7	**10,76**	**20,1**	**17,70**	**21,70**	**31.09**		**1,9**
Germany	1.410	14.260	11.690	47.310	63.160	127.690		33.620
	0,4	**4,76**	**3,90**	**15,81**	**21,11**	**42,68**		**11,23**
Spain	22.500	270.280	232.800	141.850	110.960	160.210		51.190
	2,27	**27,30**	**23,51**	**14,33**	**11,21**	**16,28**		**5,17**
Italy	5.290	819.360	357.670	186.150	120.120	116.820		15.490
	0,3	**50,55**	**22,06**	**11,48**	**7,41**	**7,20**		**0,95**
Hungary	42.790	412.740	46.060	26.540	19.430	21.800		7.450
	7,41	**71,55**	**7,98**	**4,60**	**3,36**	**3,77**		**1,29**
Holland	1.700	8.000	11.000	10.260	10.820	28.350		2.210
	2,35	**11,06**	**15,21**	**27,69**	**14,96**	**39,20**		**3,05**
Greece	5.910	338.430	172.650	83.390	43.430	29.630		1.440
	0,8	**50,14**	**25,58**	**12,35**	**6,43**	**4,39**		**0,21**

Source: Republic Institute for Statistics 2012, Eurostat 2011.

It is often said that the results of insufficient agricultural production is result of the fragmentation of proprietary property. However, these data show that it is not quite true. From the above table shows that 67% of EU of agricultural holdings have land not exceeding 5 ha, 11% of households own land from 5 to 10 ha, 8% from 10 to 20ha, 9% from 20 to 100 ha. In Serbia, 77% of agricultural households have land not exceeding 5 ha. Other countries of Western Europe are not in somewhat better position. Thus, in Greece 75% of households have land to 5ha, in Hungary 80% in Italy which creates extraordinary results in agriculture 72% of households own land up to 5 ha in Spain to 50%. In Germany and Austria, the proportion is much lower (about 8% of Germany and in Austria about 30%).

Thus, these data indicate that the size of the estate is not fully correlated with the efficiency of agricultural production. Specifically, it is about competitiveness and increase productivity and motivation for agricultural production. Low productivity and lack of competitiveness is also evident from the following table.

Table 4: Population that feeds an active farmer for selected countries

Country	Population
EU	75
Serbia	15
France	77
Germany	152
Austria	56
Slovenia	25

Source: Eurostat 2011.

With the exception of the most developed countries of the EU, there is a question (for which there is no good answer) how is it that Slovenian farmer can produce food for 25 people, and Serbian only 15 though Slovenia does not have granary of Europe.

So this is about competitiveness and productivity, especially about relationship of the state towards this industry.

Measures to improve competitiveness related to increase in productivity, quality and quantity of production etc.. In order to increase competitiveness it is necessary to take measures such as reducing the cost of production in order to achieve price competitiveness, improving the quality of products according to the standards, guide and encourage manufacturers to produce better varieties, conducting marketing activities in order to create trademarks and brands in order to gain the trust of foreign consumers. [Zakić Z., Stojanović Ž.,2008,].

Certainly, a competitive advantage should be achieved using a positive difference of natural resources (climate, soil, and water resources - irrigation systems, etc.).. It should be emphasized that the priority is to produce healthy and safe food, which also makes a great deal of unused capacity.

SWOT ANALYSIS OF AGRICULTURAL PRODUCTION (VOJVODINA)

By using SWOT analysis (SWOT analysis was done by the author) it is possible to identify situation and perspective of agricultural production

Table 5: SWOT analysis

Strengths	Opportunities
1. Natural resources (geography, climate, water flows, the number of sunny days), 2. Ecologically preserved environment (yet) 3. The existence of a large number of professional and scientific institutions related to agriculture, 4. Partially developed processing facilities 5. Trained professional staff 6. The tradition of agricultural production	1. Improve agricultural production, 2. Returning to cooperative society, 3. Production and installation of irrigation systems, 4. Development of industrial production for agriculture, 5. Using of land for more harvesting annually, 6. The development of organic farming and the production of GMO

Weaknesses	Threats
1. Lack of strategy for agricultural development, 2. The low level of subsidies, 3. The low level of use of water systems for irrigation and drainage	1. High or full liberalization of trade in agricultural products, 2. Poor privatizing agriculture companies and the ability to sell farmland to foreigners, 3. Adoption of policy production of GMO

According to the SWOT analysis, strengths indicate that agricultural production has enough potential to be a leading economic sector. Agriculture needs to be the leading industry due to its natural and acquired resources. The natural resources are agricultural lands on which can be grown crops, vegetable crops, fruit, livestock, viticulture, apiculture, hunting, etc.. For all these activities there are natural resources for their development. However, to lead to the development Serbia has to do only what developed countries do, which is to encourage and stimulate agricultural production, by world standards. Thus, the state should determine objective incentives and stimulations which will be certain in a long period. The State shall regulate the parity of agricultural products. In this manner, a wide range of agricultural products and our manufacturers will not every year,

running away, in another culture, thus wanting to achieve higher profits. Creating the conditions for successful agricultural production also creates the conditions for the return or going to the country.

Opportunities by SWOT analysis shows that agricultural production must be improved. This opens up the space for education and employment of a large number of experts from the scientific and other professional institutions and individuals. As already mentioned granary of Serbia (Vojvodina) has developed infrastructure for providing irrigation and drainage. However, the Republic of Serbia for years ignored irrigation systems, as products depended exclusively on '' God'', or meteorological conditions, investments are necessary for the treatment and digging of new channels that connect agricultural land with a canal DTD, construction and installation irrigation systems and drainage systems. This will result in long-term beneficial effects because our fields would not depend only on the May and the June rains and spring floods. By providing irrigation systems at the same time, the conditions for multiple annual harvests are provided as well. The production of healthy food and food without GMO is a chance of Agriculture. In addition to the irrigation system is necessary to provide sufficient resources to break hail and other clouds. Industrial production should develop,(re-industrialization) but the dominant one production that ensures development and increasing agricultural productivity. It's an industry, tractors and engines, combines and other agricultural machinery and equipment, and manufacture of machinery and equipment for processing agricultural products. In that way processing industry would be stimulated as well so Serbia would not dominantly export primary products but processed products.

Weaknesses of the SWOT analysis are those weaknesses which have been identified for decades. In fact, there is no strategy of agricultural production, the measures taken in the area of encouraging and stimulating are short and completely unpredictable. There is no certainty for farmers, pricing policy or fixed parities. Lack of local investment in irrigation systems, drainage systems and systems for breaking hail clouds is a significant risk for the development of agriculture.

Threats to the SWOT analysis are very sharp and very important for the further development of agriculture. The main threat to the liberalization of agricultural production for domestic agricultural production for a long time will not be competitive with the agricultural production in the developed world, and state policy imposed a complete liberalization of the market competition to it. A particular problem is the liberalization of the purchase of agricultural land because after ratification by all member of the SAA (Stabilization and Association Agreement), (only Lithuania has not ratified the SAA). After the expiry of 4 years after the ratification of the SAA, SAA will provide customers in the EU, under the same conditions to buy Serbian fields as our citizens. In practice, it may happen that the privilege EU buyers do not realize just prior to the entry of Serbia into the EU, but also before we can access all pre-accession funds, which was not the case with one of the 13 has newly enlarged. Why is it a threat? Because private land owner may decide what to produce and where to place its products. Thus,

agricultural products from our country may end on foreign tables and also mass production of GMO can occur.

Other countries nowhere near didn't negotiate for such short deadlines. None of the last admitted member of an EU allowed something like that, until enters into full membership. Some countries kept moratorium on sales land even after entering into membership. Even though Croatia becomes a member of EU in a month still negotiating about a sale of land

Our government has realized what a mistake had been made, and intends to seek amendment of the SAA in that area, but it is not yet done with total uncertainty in the result of further negotiations. (The author of this article thinks that if it comes to negotiations on this issue, nothing will change. Unless the Government makes a decision on the production of GMOs, then it is indeed a major threat to the further development of agricultural production in Serbia.

CONCLUSION

Agriculture as an economic branch has great significance in the overall economic life of any country. The Republic of Serbia has very favorable natural resources for agricultural development. The Republic of Serbia possesses Vojvodina region - granary of Europe where they can grow all kinds of agricultural products. Therefore Republic of Serbia has the natural resources of each type of agricultural production (agriculture, horticulture, animal husbandry, viticulture, apiculture etc.. These natural resources in recent decades have not been used so today Serbia is underdeveloped country and in addition to that Serbia has granary and their pasture but still import milk and meat and grains, almost all agricultural products.

In order to cut import dependence in the sphere of agriculture should be, admitted that the Serbia is an agricultural country and it is not too hard nor a bad thing**.** Then you need to make a strategy for agricultural development, which will be defined so as to stimulate agricultural production, encourage return and go to the village and provides a significant share of agriculture in GDP. The goal of the strategy of agricultural development must be that agricultural production becomes a dominant economic sector that will satisfy the needs of the Republic of Serbia for agricultural products with environmentally healthy foods, on the one hand and produce surpluses of agricultural products for export, and thus that agriculture has the largest share in GDP on the other.

It is necessary to use the existing infrastructure of the DTD canal, and provide irrigation and drainage of agricultural and other land. Industrial development, re-industrialization, should be sized so that it supports the development of agriculture.

REFERENCES:

[1] Frohber, K. (2005): Special Issue Plenary Paper from XI EAAE Congress, Kopenhagen, Vol. 32. No.3. pg. 229-300.

[2] Ševarlić M., Tomić d. (2010): Agrarian economy of Serbia and European integration: the (un) suitability mutual application of the Interim Trade Agreement: a thematic anthology, Serbian Association of Agricultural Economists.

[3] Stojanović Z., Ognjanov G. i Filipović J. (2010): Traditional food and its implications for development of rural tourism in Serbia, agricultural Economics, Vol. LVII, EP 2010 (57) SI-2.

[4] Statistical Yearbook of the Republic of Serbia 2011.

[5] Zakić Z., Rikalović G. i Stojanović Ž.(2010): Rural development in the focus of new industrialization, Economic perspectives Vol.15.No.2

[6] Zakić Z., Stojanović Ž. (2008): Agricultural economics, Faculty of Economics, Belgrade .

[7] Eurostat Pocketbooks, Agriculture, fishery and forestry statistics, Main results – 2010-11, ISSN 1977-2262

[8] http://ec.europa.eu/agriculture/ European commission – Agriculture and rural development

[9] http://www.fao.org/docrep/016/i3027e/i3027e02.pdf

SERBIAN PUBLIC ATTITUDES TOWARDS "GREEN"

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Abstract: In order to investigate the motivation and willingness of the citizens of Serbia to buy food not treated with pesticides was conducted an anonymous Internet survey on a sample of 420 respondents. Another survay of attitudes towards genetically modified (GM) food was conducted with 500 consumers. Linear regression method was used to determine the relation between the input elements (trust, risk perception and the perception of benefits) and output (motivation and willingness to buy food untreated with pesticides and willingness to consume and buy GM food). The analysis showed that in Serbia there is great consumer interest in organic products, and that the one of the main motives for the purchase of food not treated with pesticides is desire to maintain the environment. Also, rejection of GM food is partly cause by concern for the environment. It can be concluded that Serbian citizens have developed environmental awareness, and therefore all activities that contribute to environmental protection will strike a chord with the public.

Key words: Attitudes, Environment, Organic Food, GM food, Serbia

JEL classification: D12, Q13, Q18

UDC 316.65:[606:604.6

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INTRODUCTION

The public opinion survey on environment is generally categorised into time series and cross-national perspectives. The time series data on public environmental concerns exist mainly in developed countries such as the U.S., Europe, and Japan. The study of trends in opinion survey is particularly thorough in the U.S. where data is most available since 1960s. For Europe, there is the opinion survey called Eurobarometer, complied by the European Community. This survey monitors the European's attitudes to the environment from 1982. In Japan there are similar opinion surveys carried out during 1960-70s when industrial pollution was a serious problem. The cross national surveys on environment are conducted first by Harris for UNEP in 1989. This was followed by other attempts by Gallup in 1992, International Social Survey Program, in 1993, MORI (Market and opinion Research International) and WWF (World Wildlife Found) in 1993 and Environics in 1995 (ECLAC, 2000).

Opinion on environment demonstrated strong and persistent increase in people's concern on the quality of environment. Time series analysis of the U.S. demonstrated that although there was 'ups and downs' in people's interests on environmental issues, there is continuity in interests on environmental issues. This phenomenon is considered as an emergence of "environmental attitudes". The formulation of this 'attitude' is observed in other developed countries such as in Japan and Europe, where time series data is available. The cross-national studies illustrated a raise in environmental concerns as the global phenomena. They found that there were very few difference between developed and developing countries in their degree of concerns on environmental quality. These facts by confirm possible conformation of environment attitude during the 90s at the global level (ECLAC, 2000).

According to literature, after 90s a high level of environmental awareness persist in most industrial countries, but is marginalized in most of the developing world. Despite differences in dimension and accentuation, it is clear that the ways of dealing with nature and the environment are being reconsidered (Kuckartz et al., 2003, pp. 125-136). Environmental aspects in developing countries are often marginalized as they are faced with more pressing problems, as well as lack of financial resources, and legal and administrative systems to formulate and monitor enforcement of regulations. On the other hand, awareness about environmental issues is increasing among the governments and general public of developing countries (Ofori, 1992, pp. 360-395). There are some opinions that lack of awareness is a major contributor to this lag (Sakr et al., 2010, pp. 210-218).

Climate change, the general destruction of natural resources and concern for non-renewable sources of energy have become the subject of important international negotiations.

INTERNATIONAL PROTOCOLS AND STANDARDS

KYOTO PROTOCOL

In order to help Governments rethink economic development and find ways to halt the destruction of irreplaceable natural resources and pollution of the planet, UN held the Earth Summit in Rio de Janeiro from 3 June to 14 June 1992. This Summit was unprecedented for a UN conference, in terms of both its size and the scope of its concerns. An important achievement was an agreement on the Climate Change Convention which in turn led to the Kyoto Protocol.

The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change (UNFCCC)[28], which commits its Parties by setting internationally binding emission reduction targets. Recognizing that developed countries are principally responsible for the current high levels of global gass emissions in the atmosphere as a result of more than 150 years of industrial activity, the Protocol places a heavier burden on developed nations under the principle of "common but differentiated responsibilities". The Kyoto Protocol was adopted in Kyoto, Japan, on 11 December 1997 and entered into force on 16 February 2005. The detailed rules for the implementation of the Protocol were adopted at Seventh session of the Conference of the Parties (COP7) in Marrakesh, Morocco, in 2001, and are referred to as the "Marrakesh Accords." Its first commitment period started in 2008 and ended in 2012.

In Doha, Qatar, on 8 December 2012, the "Doha Amendment to the Kyoto Protocol" was adopted. Formally the protocol lives on. Climate talks in Doha in December created a second "compliance period" stretching to 2020, when diplomats promise a new deal involving all nations will come into force. But with Russia, Japan, New Zealand and Canada pulling out, this next period only covers nations which contribute 14 per cent of global emissions, mainly the European Union and Australia. During the first commitment period, 37 industrialized countries and the European Community committed to reduce a greenhouse gas emissions to an average of five percent against 1990 levels. During the second commitment period, Parties committed to reduce greenhouse gas emissions by at least 18 percent below 1990 levels in the eight-year period from 2013 to 2020. The Republic of Serbia become a member of the UNFCCC[29] in June 2001 and has ratified the Kyoto Protocol. Serbia has not adopted a national strategy for reducing

[28] *The objective of the treaty is to "stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system". The treaty itself set no binding limits on greenhouse gas emissions for individual countries and contains no enforcement mechanisms. In that sense, the treaty is considered legally non-binding. Instead, the treaty provides a framework for negotiating specific international treaties (called "protocols") that may set binding limits on greenhouse gases.*

[29] *The main difference between the Kyoto Protocol and the Convention UNFCCC is that the Convention encouraged industrialized countries to stabilize greenhouse gas emissions, while the Protocol commits them to do so.*

greenhouse gas emissions by the Protocol and has the status of non-Annex I[30] country. Having a status of a developing country (non-Annex I country), Serbia is not obliged to reduce greenhouse gas emissions (in the first, obliging period of time, but it does have an obligation to "determine and implement actions which contribute to the achievement of its goals" (First Report of the Republic of Serbia to the UN Framework Convention on Climate Change, 2011).

Events related to the Kyoto agreement are excellent examples of selfish corporate goals and objectives of the Great Powers. From the beginning, the treaty was problematic. Opponents denied the science of climate change and claimed the treaty was a socialist plot. Environmentalists decried the lack of ambition in Kyoto and warned of dire consequences for future generations. Ex U.S. president G.Bush, was himself an avowed climate change sceptic, has called the Kyoto Protocol "ineffective" and "unfair". On one of the rare occasions during his elections campaign that G.Bush talked about his future climate policies, he said he would oppose any policies, such as the Kyoto treaty, which "would drastically increase the cost of gasoline, home heating oil, natural gas and electricity."[31] Both G. Bush and his Vice President D.Cheney have a background as Chief Executive Officers (CEOs)[32] of oil companies and their campaigns received millions of dollars of backing from the US oil industry. D.Cheney was a member of the Board of Directors of the American Petroleum Institute (API), one of the most hard-line lobby groups among the opponents of the Kyoto Protocol. The G.Bush administration's position is likely to reflect that of the Republican majority in Congress, which has been traditionally hostile to the Kyoto Protocol.[33] Only a few days after taking office, the G.Bush administration requested that the COP6 (sixth Session of the UNFCCC Conference of the Parties, 2000) follow-up summit in Bonn be postponed till July[34.] The worst expectations seemed to be confirmed by steps taken by the Bush administration in March. First, G.Bush wrote a letter to four Republican senators in which he said that he does not want to regulate CO2 emissions from US power plants, and that he had made a mistake calling it a pollutant![35] Shortly after, the White House stated in unmistakable terms that it would not implement the Kyoto Protocol, but instead would work towards a new

[30] *Non-Annex I: Parties to the UNFCCC not listed in Annex I of the Convention are mostly low-income developing countries. Developing countries may volunteer to become Annex I countries when they are sufficiently developed.*

[31] *"New Reports Warn of Threat of Global Warming", Houston Chronicle February 27 2001. Bush continued to present a set of policies that closely mirror those promoted by industry groupings like the Global Climate Coalition and the Business Roundtable, including "market-based mechanisms," increased use of natural gas (which has slightly lower CO2 emissions), and tax measures for U.S. businesses that develop cleaner energy technologies.*

[32] *A CEO is the highest-ranking corporate officer (executive) or administrator in charge of total management of an organization. An individual appointed as a CEO of a corporation, company, organization, or agency typically reports to the board of directors*

[33] *The Carbon Market Analyst" calls ratification of the Kyoto Protocol before 2004 a "low-probability scenario" due to the Republican dominance in the US Senate and estimates the chance to be 25%. "The (preliminary) outcome of COP-6", The Carbon Market Analyst, 28 November 2000.*

[34] *The Bush government argued this would allow them to "take a thorough look at US climate policy". "EU Sets New Targets on Greenhouse Gas Cuts, 'Worried' About Bush", IPS, January 24, 2001*

[35] *"How Carbon-Dioxide Cap Vanished Into Thin Air", Wall Street Journal, March 15, 2001.*

deal that included reduction commitments for Southern countries as well.[36] On the other hand there have been proponents of the agreement that they wanted from G.Bush to continue the Clinton-Gore policy of shaping the Kyoto Protocol to benefit U.S. business interests. Among them were the companies working with the Pew Center[37], which considers greenhouse gas regulations unavoidable, thereby making it a sound business strategy to benefit optimally from emissions trading and other market-based mechanisms. Chemical giant DuPont, for instance, was "*very anxious*" for an international trading system in greenhouse gas emissions, and "*supports a resumption of the Kyoto talks*"[38]. It was expected the wish by parts of US industry not to be locked out of international emissions trade bring G.Bush administration back to the negotiating table[39]. Anyway, G.Bush withdraws U.S. endorsement of the Kyoto Protocol. Therefore, even though the B.Clinton administration signed the treaty[40], it remained only a symbolic act and was never submitted to the Senate for ratification. Before the Protocol was agreed on, the U.S. Senate passed the Byrd-Hagel Resolution[41] unanimously disapproving of any international agreement that 1) did not require developing countries to make emission reductions and 2) "would seriously harm the economy of the U.S.".

In November 2001, the COP7 meeting in Marrakesh finalizes the provisions of the Kyoto Protocol without U.S. support. In 2002 Russia and Canada ratify the Kyoto Protocol to the UNFCCC bringing the treaty into effect on February 16, 2005. In Twelfth session of the Conference of the Parties (COP12), held in Nairobi in 2006, business and economic issues took on a more prominent role. N. Stern of the U.K. government presented a comprehensive new economic review showing that the projected impacts of climate change will be far more costly to the global economy than the steps that would be required to avert them. Business leaders, meanwhile, expressed growing concern that without strong new signals from governments on the future of the climate effort, the rapidly expanding carbon market[42] spawned by the Kyoto Protocol could collapse. But with the U.S. and developing countries still strongly opposing any discussion of taking on binding commitments, the conference made little measurable progress toward new agreements on international action beyond 2012, when the current Kyoto commitments expire. The most contentious issues were the terms of the new Kyoto Protocol review, a proposal by Russia to establish a pathway for developing countries to take on “voluntary” emission targets, and Belarus’ proposal to set an

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[36] *"Bush rejects Kyoto emissions treaty", Financial Times, March 29, 2001.*

[37] *The Pew Research Center is an American think tank organization based in Washington, D.C. that provides information on issues, attitudes and trends shaping the U.S. and the world. Its president beginning January 2013 is Alan Murray, former deputy managing editor of The Wall Street Journal.*

[38] *"Kyoto Talks Collapse; EU Energy Taxes Loom", Chemical Week, December 13, 2000.*

[39] *"Clinton Presses for Restart of Climate Talks As Bitter End of Meeting Hides Real Progress", Oil Daily, December 4, 2000.*

[40] *"Clinton Hails Global Warming Pact". All Politics (CNN). 11 December 1997. Retrieved 5 November 2006.*

[41] *Byrd-Hagel Resolution (http://www.nationalcenter.org/KyotoSenate.html*

[42] *Carbon markets are systems for the trading of carbon emissions assets, such as greenhouse gas emission allowances allocated within cap & trade systems, or emissions credits corresponding to emissions reductions.*

emissions target for itself. As those were issues for Kyoto parties only, the U.S. did not engage on them and maintained a relatively low-key posture throughout the conference[43] .

After the first commitment period 2008-2012, what happened? Global emissions have risen by 50 per cent, thanks to the rapid industrialisation of nations such as China, not covered by the original deal and drawing the U.S. Officially the 37 industrial nations cuted their emissions to an average of 16 per cent below 1990 levels, compared with the 4.7 per cent promised in the agreement. Too many rich countries have met their targets by moving their carbon-intensive industries, such as steel and aluminium manufacturing, offshore to nations not covered by the protocol. This allowed the UK to easily meet its Kyoto target, cutting its domestic carbon dioxide emissions by 23 per cent from 1990 levels by 2011. But several assessments of its total carbon footprint - including emissions produced from the manufacture of imported goods - reveal an increase of around 10 per cent since 1990, even allowing for the recent economic downturn. Worse still, most of the new manufacturing nations are both highly inefficient users of energy and power their manufacturing largely with the dirtiest of the major fuels, coal. The result is higher emissions. Energy economist D. Helm from the University of Oxford asked recently: "What exactly is the point of reducing emissions in Europe if it encourages energy-intensive industry to move to China, where the pollution will be even worse?" It seems likely that, in this way, the Kyoto protocol may actually have increased global emissions[44].

Russia exited the Kyoto Protocol in December 2012 saying the treaty fails to prevent climate change and doesn't bring benefits to the country's economy. Prime Minister D.Medvedev said Russia hasn't received any advantages from participating in the treaty. "We failed to use it properly in an economic sense," he said. "But it doesn't mean we should hold on in defiance of common sense." Russia has objected to the new agreement as it restricts the sale of surplus "hot air" credits generated from under-shooting national targets. Meanwhile, New Zealand left the treaty as it puts a cap on buying the carbon credits. Nearly 200 countries took part in negotiations in Doha on the extension the Kyoto Protocol, among them only 37, including Australia, Belarus and members of the European Union, supported the agreement. Canada and Japan have also opted out of the Protocol, while China, USA and India – the world biggest producers of greenhouse emissions – have never participated in the treaty. It means that the second phase of the Kyoto Protocol will cover only about 15% of global emissions. The talks in Doha have also failed to oblige countries to further cut greenhouse gases, instead, the new deal "urges" developed countries to increase emission targets and to report back by April 2014 on whether the new cuts were made. The countries which agreed on the Kyoto Protocol have also pledged to pay developing nations $100

[43] *Twelfth Session of the Conference of the Parties to theUN Framework Convention on Climate Change and Second Meeting of the Parties to the Kyoto Protocol November 6-17, 2006 Nairobi, Kenya http://www.c2es.org/international/negotiations/cop-12/summary*

[44] *http://www.newscientist.com/article/dn23041-has-the-kyoto-protocol-done-more-harm-than-good.html.*

billion annually by 2020 for the damage caused by climate change[45]. Russia's exit from the Kyoto Protocol disappointed environmentalists, but analist said the Protocol isn't the only measure to avert climate change, there are several market mechanisms such as developing green technologies in the energy sector and implementing bilateral agreements between neighboring countries such as China and Russia to cut emissions or to compensate damage.

According to latest news two largest polluters China and the U.S. continue to accuse each other. The G.Bush Administration has refused to join the pact, saying that it is flawed because it fails to hold developing nations such as China and India to the same mandatory greenhouse gas emissions caps as the industrial nations. In an interview with the *Associated Press* a Chinese official urged the U.S. government to join the Kyoto Protocol and cut its emissions of carbon dioxide. China, which currently ranks second in the world's CO2 emissions, is projected to pass the U.S. sometime between 2025 and 2030 as the largest emitter of carbon dioxide. In an article titled "*The Great Leap*" in the December 2005 issue of Harper's, B. McKibben argues that it makes more sense to divide the atmosphere by people, not by nation. China's current annual production of carbon dioxide was 2.6 tons per 1,000 people, while the average was 19 tons in the U.S.. Even when China passes the U.S. as the largest carbon emitter, the average Chinese person will still be producing only a quarter as much carbon as the average American, according to B.McKibben. S.Guoshun, director of the Department of Treaty and Law at the Chinese Ministry of Foreign Affairs also said in the interview that China's GDP had risen fourfold from 1980 to 2000, while its energy consumption only doubled, showing the efforts by the Chinese government to mitigate greenhouse gas emissions. He also noted that China has pledged to raise its energy efficiency by 20 percent between 2006 and 2010[46].

In the meantime, waiting for the political arrangements and harmonization of corporate interests the levels of the carbon dioxide in the atmosphere has reached 400 parts per million for the first time in human history[47]. The Members and Associates of the Climate Change Task Force (CCTF)[48] appeal to leaders across the world in all walks of life to face their historic responsibilities by taking strong, urgent and concerted action to face the realities of climate change and to avert its potentially devastating consequences. In a spirit of international solidarity, they call on them toengage public support in defining and implementing a vision and strategy forhuman progress that issustainable, inclusive and just[49]. The current global situation can be summarized by three facts: (i) Far from declining, global

[45] *http://rt.com/business/russia-exit-kyoto-economy-729/*
[46] *http://www.worldwatch.org/node/144*
[47] *http://www.greenpeace.org/international/en/news/Blogs/makingwaves/carbon-dioxide-reaches-levels-never-seen-by-h/blog/45102/*
[48] *CCTF is an independent, non-governmental committee comprised of leading international climate change thinkers, scientists, Nobel Peace Laureates, as well as former and current Heads of State, calling upon civil society and the public at large to urgently engage in the climate debate*
[49] *http://www.gcint.org/sites/default/files/publication/document/CCTF%20APPEAL-June11-2012-Eng.pdf*

emissions continue to rise at an alarming rate by 5.9% in 2010 and cumulatively by 49% since 1990 (International Energy Agency); (ii) The risks of destabilizing the climate are increasing; we may be approaching a point of no return and an irreversible destabilization of the climate (iii) Multilateral efforts to preserve a stable climate and a safe future are proving to be slow and inadequate in relation to the scale and urgency of the challenges. They are failing to achieve action sufficient to avert the risks of catastrophic climate change.

ISO 14000 AND BUSINESSES

The impact of business on the environment has become an issue of increasing concern since the late 1980s, particularly in western economies (Gerrans, 2000, pp.75-81). This concern has been shared not only by environmental groups and legislators, but also by customers, local communities, public authorities, suppliers, financial institutions and employees (Petts et al.,1998, pp. 711-731). As a result, there has been increasing pressure for owner/managers of Small and Medium-sized Enterprises (SMEs) to improve their environmental management activities and practices (Gerrans, 2000, pp.75-81). SMEs individually have, by definition, very limited operations, and therefore would not have the potential to impact the environment, to the same degree, as very large businesses. In fact, many small business owners believe that they have little impact on the environment (Lee, 2000, pp. 271-278; Rowe et al., 1996, pp. 97-107). However, it is argued that their total impact is high. SMEs constitute over 97% of all private sector businesses in Australia, and provide employment for 49% of the private sector workforce (Gadenne et al., 2009, pp. 45-63). They occupy a similar important position in other developed economies. Hence, the ability and willingness of small business owners to manage the environmental impact of their business is an issue of concern. Legislation requires some SMEs to institute formal programmes to reduce their environmental impact.

Such voluntary programme is Environmental Management System (EMS). EMS is being driven by international market forces, regulatory shifts, demand for quality management and public awareness. The World Trade Organization (WTO) negotiations in 1986 to minimize non-tariff barriers to trade and the 1992 Rio Earth Summit which emphasized commitment to environmental quality have stimulated the development of the EMS (Yiridoe et al., 2004, pp. 37-62). The implementation of an EMS integrates the precautionary and polluter pays principles into a firm's operations and demonstrates commitment to sustainable development[50] (Massoud et al., 2010, pp. 200-209). An EMS: 1) Serves as a tool, or process, to improve environmental performance and information mainly "design, pollution control and waste minimization, training, reporting to top management, and the setting of goals"; 2) Provides a systematic way of managing an organization’s environmental

[50] *Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs. Seen as the guiding principle for long-term global development, sustainable development consists of three pillars: economic development, social development and environmental protection.*

affairs; 3) Is the aspect of the organization's overall management structure that addresses immediate and long-term impacts of its products, services and processes on the environment. EMS assists with planning, controlling and monitoring policies in an organization; 4) Gives order and consistency for organizations to address environmental concerns through the allocation of resources, assignment of responsibility and ongoing evaluation of practices, procedures and processes; 5) Creates environmental buy-in from management and employees and assigns accountability and responsibility; 6) Sets framework for training to achieve objectives and desired performance; 7) Helps understand legislative requirements to better determine a product or service's impact, significance, priorities and objectives; Focuses on continual improvement of the system and a way to implement policies and objectives to meet a desired result. This also helps with reviewing and auditing the EMS to find future opportunities; 8) Encourages contractors and suppliers to establish their own EMS (Melnyk et al., 2003, pp. 329-351). EMS is typically reported using International Organization of Standards (ISO) 14001 to help understand the EMS process.

ISO14000 certification is very important because of the above-mentioned pressure on business to introduce environmental perspective into their policies and practices which can also come from other businesses who demand that the SMEs, if they are to be a recognised supplier, go through the process for ISO14000 certification (Perry, 2001).

ISO 14001:2004 EMS standard ensures that all the negative impacts on the environment by companies are identified, monitored and compatible with the regulations. The standards of the ISO 14000 series are intended for all companies, regardless of their activities, and they provide the basic guidelines in the systematic improvement of companies' relationship towards the environment. If this relationship is in accordance with the principles and conditions of the standards, the certificate is granted. The number of ISO 14001 certificates in the world significantly increases every year. Still, the number of these certificates is only 15% of the overall number of ISO 9001 certificate. The certified system of the environmental protection management demands substantial financial investment and this is the main reason why companies are not more oriented towards this issue (Zivkovic et al., 2012, pp.1-25).

There are divided opinions on whether the ISO 14001 certification is merely "greenwash", i.e., the unjust acquisition of ecological characteristics by companies with the goal of creating the proecological image in order to sell a product with more profit or achieve a public status or whether it genuinely leads to better ecological performances. The main point is that the company that owns the ISO 14001 certificate is not necessarily expected to improve its ecological performances, but only to show the evidence of opting for the environmental protection improvement. Therefore, the assimilation which includes the ISO 14001 into the existing management system and the daily activities, taking into

consideration the existing company practice, represents the key solution for the improvement of ecological performances as well as the improvement of the system efficiency (Naveh et al., 2004, pp. 352-363).

Anyway it is important to ask the question: Is the real concern about biodiversity loss or is it about the loss of business opportunities? (Paul, 2012, pp. 4-5). Business wants access to resources, capital and markets, and a seat at the global policy development table in order ensure it has a licence to operate. At a time of growing concern about pressure on natural resources and the need for sustainability, business also has to talk about biodiversity and sustainable development as a means to secure its business targets. But its motives, influence and outcomes in terms of biodiversity conservation, sustainable use and equitable benefits need to be assessed. Certain steps should be taken to reduce the direct and indirect influence of business on biodiversity decisions in order to assert the primacy of biodiversity as part of our global commons, to be governed by the Convention on Biological Diversity (CBD)[51], not the corporate sector.

SURVEYS IN SERBIA

In order to study, among other things, the public attitude toward "Green" agriculture in Serbia, we have analized the perception and attitudes of consumers toward genetically modified (GM) food as well as the motivation and willingness to buy food not treated with pesticides (organic food).

GM food is food obtained from genetic engineering (GI). GI is one technology that has caused the most public debate. Although a large amount of food which is obtained from genetically modified (GM) plants is involved in a food chain market, there is a large disagreement in the lay and professional circles about healthy, ecology and socio-economic consequences of using new food (Papic Brankov, 2013). Proponents are enthusiastic about the ways in which GM can change biotechnology and about the potential of GM applications for increased process efficiencies and new products. Proponents believe that the GM food will save the world from a hunger. Opponents have been sceptical. Concern in matters of health, environmental disaster and economic dependence particularly in developing countries persists. Siegrist (2008, pp. 603-608) suggest that perceived benefits, perceived risks and perceived naturalness are important factors for the acceptance of new food technologies. Lay people may not only have difficulties in assessing risks associated with novel food technologies, but the benefits of such technologies may also not be obvious. Trust, therefore, is important for the acceptance of new food technologies. Several studies in EU and US pointed out that trust in

[51] *CBD is a global agreement addressing all aspects of biological diversity: genetic resources, species, and ecosystems. CBD was inspired by the world community's growing commitment to sustainable development. It represents a dramatic step forward in the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising from the use of genetic resources. http://www.cbd.int/*

government could play an important role in shaping public attitudes towards GM food, largely via its links to risk perception (Curtis et al., 2004, pp. 70-75; Hossain et al., 2004, pp. 255-267; Wolf et al., 2004, pp. 131-141).

The pesticides have been used in plant production since ancient times. Intentional pesticide use goes back thousand years when Sumerians, Greeks, and Romans killed pests,with frequently poor results using various compounds such as sulphur, mercury, arsenic, copper or plant extracts. After the World War II introduction of DDT (dichlorodiphenyltrichloroethane), BHC (benzene hexachloride), aldrin, dieldrin, endrin, and 2,4-D (2,4-dichlorophenoxyacetic acid) makes the use of pesticide widespread. Public concern has led the industry to create more selective pesticides, and the agricultural sector to the implementation of agricultural practices that reduce dependence on pesticides. It is estimated that on the world market today, there are about 1,500 active substances with pesticide effect. According to a Food and Agriculture Organization (FAO) estimate, in 2009 has been spent over 803,000 tons of active substances, of which over 75% in developed countries[52]. Ecological pesticides found their application in organic production. Customer requirements related to food safety and quality have increased due to the strengthening of the green movement, developing analytical methods, and the impact of external factors on the environment (Lazić et al., 2004, pp. 439-445). This has created a market for products derived from organic farming technology. Consumer demands for organic products, which are perceived as healthier and less harmful to the environment is constantly growing (Schifferstein et al., 1998, 119-133; Williams et al., 2001, 319-330). In numerous studies, health concerns are mentioned as the main motive for buying organic food (Carboni et al., 2000, pp. 12-21). This concern is part of a widespread anxiety among consumers about the quality of products we eat. The concern was prompted by a number of incidents in the food industry, and the decline of trust in government institutions responsible. Investigations of potential food risks have shown that the public is very concerned about the possible effects caused by the presence of pesticide residues in food. The use of pesticides is linked to the unknown long-term adverse health effects and the benefits, for example cheaper food (Miles et al., 2001, pp. 47-61).

[52] *FAOSTAT, URL: http://faostat.fao.org/site/424/default.aspx#Ancor*

RESEARCH METHODOLOGY

In order to obtain empirical data, survey about GM food was carried out in June-September 2011, on a sample of 500 Serbian citizens between 18 and 57 years old. The questionnaire used in the research was consisted of 20 questions. It was organised into four groups of questions: consumers' perceived benefits (in terms of food quality), consumers' perceived risks and ethical issues, trust in the actors relevant to the food production chain and decision-making processes in that chain ('trust in government', 'trust in science', 'trust in NGOs' and 'trust in foreign companies') and acceptance of GM food (in terms of willingness to consume and buy GM food). The contents of each question group in the questionnaire are shown in Table 1 (Papic Brankov et al., 2013). The data obtained from a survey on a random sample of 500 Serbian citizens were analysed with univariate and multivariate analysis, using the statistical software SPSS. The questionnaire model and data are validated as follows. As a first step, data were analysed for outliers and no apparent outliers were detected among collected data. Then, the skewness and kurtosis of all items (questions) in a questionnaire were analysed and it was concluded that all items data obey normal (Gaussian) distribution. Further, since the questionnaire was evaluated using multiple-item additive scale, the reliability of the questionnaire model was tested using Cronbach's alpha coefficient. The overall Cronbach's alpha value of the model presented in the questionnaire was 0.726, which is higher than a minimal required value of 0.7. The goodness of a fit of the model was evaluated using the ratio of the chi-square statistic (X^2) to the degrees of freedom (d.f.) that equals 2.76 and meets the required range (X^2/d.f. $\leq$ 3.00).

The other, an anonymous Internet survey was carried out in January-September 2012 in Serbia on a random sample of 420 Serbian citizens between 18 and 57 years old to assess acceptance of organic food. The questionnaire used in the research was consisted of 16 questions. It was organised into four groups of questions: trust in the actors relevant to the food production chain and decision-making processes in that chain ('trust in government', 'trust in science',) consumers' perceived benefits (in terms of food quality), consumers' perceived risks and motivations and willingness to buy food not treated with pesticides. The contents of each question group in the questionnaire are shown in Table 2. The analysis about organic food is performed using multivariate (multiple) linear regression. Key indicators of this study should demonstrate the relationship between the elements of the module I, II and III, and motivation and willingness to buy (*MS* output, Modules IV).

All items in both surveys were measured on a 5-level Likert scale, where the lowest point (1) means fully disagree or fully negative answer; the point (2) means tend to disagree or negative answer; the midpoint (3) means middle degree or neither positive nor negative answer; the point (4) means tend to agree or positive answer; and the highest point (5) means fully agree or fully positive answer.

Table 1. GM Questionnaire

Group	Items (Questions)
Perceived benefits (B)	B1. GM components enhance the taste of food B2. GM components positively affect the freshness of food. B3. GM components extend the shelf life of foods. B4. GM components enhance the nutritional value of food. B5. GM vegetables, fruits and cereals looks finer from the traditional.
Perceived risks and ethical issue (M)	M1. GM foods affect adversely the health of people. M2. GM foods affect negatively on the environment. M3. GM food is unnatural. M4. It is immoral and unethical to modify the genes of plants and animals. M5. Not enough information about GM food.
Trust (T)	T1. The state of Serbia is competent to make decisions regarding GM food. T2. I trust that the state authorities will take into account the interests of citizens in all future decisions regarding GM foods. T3. I trust the scientific analysis of risks and benefits of production and use of GM foods. T4. I trust the attitude of NGOs (e.g. the Green movement), in conjunction with GM food. T5. I trust foreign private companies, producers of GM foods.
Readiness to accept (R)	R1. How willing are you to consume foods with GM ingredients? R2. How willing are you to consume GM food if they reduce the amount of pesticides applied to crops? R3. How willing are you to consume GM food if they are more nutritive than traditional foods? R4. How willing are you to consume GM food if they would positively influence human health (for example, eliminated the cause of allergies)? R5. Would you buy GM food if it were the same taste as the traditional, but cheaper?

Table 2**.** Organic food- Questionnaire

Group	Items (Questions)
Trust (*P*)	*P1*. The chemical industry is interested in producing pesticides that are environmentally friendly. *P2*. Relevant state institutions in Serbia take care of the proper use of pesticides. *P3*. In general, pesticides are used in a reasonable manner at reasonable rates. *P4*. I have confidence in scientists and experts working in the chemical industry.
Perceived risks (*R*)	*R1*. Pesticides destroy the environment. *R2*. Fruit and vegetables produced without pesticides are healthier. *R3*. Pesticides are a big danger to human beings. *R4*. Risks associated with pesticide are still underrated.
Perceived benefits (*K*)	*K1*. Without the use of pesticides more human beings would suffer from hunger. *K2*. Although there are some problems, benefits of pesticides is greater than the risk. *K3*. A thorough consideration indicated that a general ban on pesticides would be irresponsible. *K4*. Food would be more expensive without pesticides.
Motivation and willingness to buy (*MS*)	*MS1*. By buying fruits and vegetables produced without pesticides I get personal contribution to reducing chemical pollution. *MS2*. By eating fruit and vegetables produced without pesticides I get a food that is more nutritious and healthier. *MS3*. By eating fruits and vegetables produced without pesticides I get a food that has a better taste. *MS4*. Would you pay more food produced without pesticides? *MS5*. How much more would you pay for food produced without pesticides? a) up to 15%; b) 15-30%; c) 30-50%; d) 50-70%; e) more than 70%.

RESULTS AND DISSCUSION

Multivariate analysis was conducted in order to estimate the statistical significance of questionnaire items that refer to the perceived benefits, risks and trust (as shown in Table 1) for the consumers' willingness to consume and buy GM food. The results are presented in Table 3, where the confidence level was 95% (α=0.05). As it could be seen from *p*-values presented in Table 3, the issues of the most importance for the readiness to consume and buy GM food are: M1, M4 and T5.

- M1 ('GM foods affect adversely the health of people');
- M4 ('It is immoral and unethical to modify the genes of plants and animals');
- T5 ('I trust foreign private companies, producers of GM foods').

The above three questions are statistically significant for all five items related to the readiness to accept GM food (R1 to R5), with the level of confidence 95% (α=0.05).

On the other hand, the issues of the least significant for the readiness to consume GM food are:

- T4 ('I trust the attitude of NGOs (e.g. the Green movement), in conjunction with GM food'), that is insignificant for all five items related to the readiness to accept GM food since its *p*-values for R1 to R5 are higher than 0.05;
- B3 ('GM components extend the shelf life of foods') that is significant only for the item R3, but at the very limit since the corresponding *p*-value equals 0.49;
- T1 ('The state of Serbia is competent to make decisions regarding GM food') that is significant only for the item R5, but at the limit of significance (the corresponding *p*-value equals 0.47).

These are followed by questions B4 ('GM components enhance the nutritional value of food') and M2 ('GM foods affect negatively on the environment') that are highly significant for the item R2 ('How willing are you to consume GM food if they reduce the amount of pesticides applied to crops?') but insignificant for R1, R3, R4 and R5.

Table 3. Willingness to consume and buy GM food in correlation with questionnaire items

	p-value				
Items	R1	R2	R3	R4	R5'
B1	0.041	>0.05*	0.040	>0.05*	>0.05*
B2	>0.05*	>0.05*	0.050	0.039	>0.05*
B3	>0.05*	>0.05*	0.049	>0.05*	>0.05*
B4	>0.05*	0.012	>0.05*	>0.05*	>0.05*
B5	>0.05*	0.043	0.001	0.046	>0.05*
M1	**0.009**	**0.048**	**0.000**	**0.000**	**0.000**
M2	>0.05*	0.011	>0.05*	>0.05*	>0.05*
M3	>0.05*	0.001	>0.05*	0.005	0.003
M4	**0.023**	**0.002**	**0.000**	**0.003**	**0.000**
M5	0.048	>0.05*	>0.05*	>0.05*	0.049
T1	>0.05*	>0.05*	>0.05*	>0.05*	0.047
T2	>0.05*	>0.05*	>0.05*	0.049	0.032
T3	0.046	0.009	0.007	>0.05*	>0.05*
T4	>0.05*	>0.05*	>0.05*	>0.05*	>0.05*
T5	**0.011**	**0.012**	**0.040**	**0.024**	**0.001**

* *not significant*

The majority of respondents demonstrated negative attitudes towards consuming and buying GM food (Table 4). In general, negative were 52.33% of all respondents, 32.62% was unsure, while only 15.06 % of respondents expressed the intention to consume food with GM ingredients (question R1). For a consumption of GM food produced with a lower amount of pesticides (question R2), a large group (44.52%) stated a negative attitude (fully disagree and disagree), while the number of supporters (fully agree and agree) increased by 10.76% compared to the general question. In relation to food produced with fewer pesticides, foods with higher nutrient content had a lower number of potential consumers (question R3). 24.38% of consumers indicated they would consume food modified by biotechnology to increase nutrition amount. The highest percentage of potential consumers was noted in the case of food modified to exhibit positive effects on human health. Almost half of all respondents (48.56 %) said they would consume this type of food (question R4). Lower price has not changed the number of respondents generally negatively oriented (52.12% vs. 52.33%) (question R5). Lower prices have caused an increase in the number of supporters and reduction of undecided (about 4%).

Table 4. Willingness to consume and buy GM food

	Percentage of respondents				
	Fully disagree	Tend to disagree	Unsure	Tend to agree	Fully agree
General (R1)	14.34	37.99	32.62	11.83	3.23
Less pesticide (R2)	10.95	33.57	29.68	20.85	4,95
More nutritive (R3)	9.19	37.10	29.33	21.55	2.83
Improve health (R4)	5.28	19.01	27.11	43.31	5.28
Cheaper (R5)	11.27	40.85	28.52	15.14	4.23

Multivariate regression analysis was performed to determine the effects of the elements of public trust (questions from group I: *P1* to *P4*), elements of perceived risks (questions from group II: *R1* to *R4*), and elements of perceived benefits (questions from group III: *K1* to *K4*) on the output elements of motivation and willingness to purchase food produced without the use of pesticides (questions from group IV: *MS1* to *MS4*). Multivariate analysis was conducted in order to estimate the statistical significance of questionnaire items that refer to the trust, perceived risks and perceived benefits for the consumers' motivation and willingness to buy organic food. The results are presented in Table 5, where the confidence level was 95% ($\alpha = 0.05$).

Table 5**.** Multivariate analysis of the influence of the elements of trust (*P1* to *P4*), risk perception (*R1* to *R4*) and benefit perception (*K1* to *K4*) on the motivation and willingness of consumers to buy organic food (*MS1* to *MS4*)

Items (questions)	***MS1***	***MS2***	***MS3***	***MS4***
	p-value			
P1	**0.005**	0.420 (>0.05) *	0.254 (>0.05) *	0.613 (>0.05) *
P2	0.192 (>0.05) *	**0.003**	0.254 (>0.05) *	0.487 (>0.05) *
P3	0.840 (>0.05) *	0.613 (>0.05) *	0.231 (>0.05) *	0.855 (>0.05) *
P4	0.285 (>0.05) *	0.881 (>0.05) *	0.126 (>0.05) *	**0.017**
R1	**0.000**	**0.044**	**0.003**	**0.013**
R2	**0.002**	**0.000**	0.738 (>0.05) *	0.834 (>0.05) *
R3	**0.044**	0.993 (>0.05) *	**0.000**	0.423 (>0.05) *
R4	0.778 (>0.05) *	0.384 (>0.05) *	0.484 (>0.05) *	**0.003**
K1	**0.049**	**0.003**	0.631 (>0.05) *	**0.001**
K2	**0.013**	0.118 (>0.05) *	0.642 (>0.05) *	**0.003**
K3	**0.000**	**0.001**	0.329 (>0.05) *	**0.020**
K4	0.328 (>0.05) *	0.669 (>0.05) *	0.215 (>0.05) *	0.199 (>0.05) *

* *not significant*

As it could be seen from *p*-values presented in Table 5, the issues of the most importance for the motivation and readiness to buy food not treated with pesticides are:

- *R1* („Pesticides destroy the environment“);
- *K3* (“A thorough consideration indicated that a general ban on pesticides would be irresponsible”);
- *K1* (“Without the use of pesticides more human beings would suffer from hunger”).

Question *R1* is statistically significant for all four outputs (*MS1*, *MS2*, *MS3* and *MS4*), while *K1* and *K3* issues are significant for the three outputs (*MS1*, *MS2* and *MS4*).

The following issues are significant for two outputs:

- *R2* („Fruit and vegetables produced without pesticides are healthier“);
- *R3* („Pesticides are a big danger to human beings“)
- *K2* („Although there are some problems, benefits of pesticides is greater than the risk,“), *MS1* and *MS2*; *MS1* and *MS3*; *MS1* and *MS4*, respectively.

Issue *P1* („The chemical industry is interested in producing pesticides that are environmentally friendly“), *P2* („Relevant state institutions in Serbia take care of the proper use of pesticides“), *P4* („I have confidence in scientists and experts working in the chemical industry“) i *R4* („Risks associated with pesticide are still underrated“) are statistically significant for the following outputs, *P1* for *MS1*, *P2* for *MS2*, *P4* for *MS4*, and *R4* for *MS4*. Issues that are not significant for the motivation and willingness to buy are: *P3* ("In general, pesticides are used in a reasonable manner at reasonable rates") and *K4* ("Food would be more expensive without pesticides"). Rejection of *P3* issues can be understood because the respondents were of different professional orientation, and the judgment of the *P3* is needed professionals agronomists. It can be assumed that the issue *K4* is not statistically significant because the price of food (despite the economic crisis in Serbia) is not critical in the choice of food.

In both survays Serbian consumers have expressed among other things greet concern about environment. There is great consumer interest in organic products, and one of the main motives for the purchase of food not treated with pesticides is desire to maintain the environment.

Regression equations for output *MS1* (question: "By buying fruits and vegetables produced without pesticides I get personal contribution to reducing chemical pollution") (Eq. 1):

$$MS1 = 2.66 + 0.0984\ P1 + 0.473\ R1 + 0.151\ R2 - 0.115\ R3 - 0.137\ K1 - 0.183\ K2 - 0.250\ K3 \quad (1)$$

From the above equation it is obvious that the greatest impact on the *MS1* has *R1* element (positive impact), followed by *K2* and *K3* (both with a negative impact), *R2* (positive impact), *K1* and *R3* (negative impacts) and *P1* (positive impact). Strong motive to purchase food produced without pesticides is giving a

personal contribution to the preservation of the environment. It is based on the belief that the pesticide has a devastating effect on the environment, and that fruits and vegetables produced without pesticides are healthier. In that sense, respondents support chemical companies interested in producing environmentally friendly pesticides. On the other hand, the respondents desire to preserve the environment discourage certain claims, especially the claim *K3* ("A thorough consideration indicated that a general ban on pesticides would be irresponsible"). Probable cause of this is a feeling of helplessness, because if pesticides are really needed, then why fight for the environment?

Also, rejection of GM food is partly cause by concern for the environment, 46.66% respondents believe that GMO affect it negatively (question M2) (Table 6).

Table 6. Consumers' fears regarding GM in food

	Percentage of respondents				
	Fully disagree	Tend to disagree	Unsure	Tend to agree	Fully agree
Affect adversely the health of people (M1)	2.81	9.47	30.18	42.11	15.09
Affect negatively on the environment (M2)	2.81	17.89	32.28	36.84	9.82
It is unnatural (M3)	2.46	9.47	11.23	58.95	18.25
It is immoral and unethical (M4)	5.96	14.74	21.75	43.16	12.28
Lack of information (M5)	2.46	7.37	14.74	56.49	16.84

CONCLUSION

Climate change is one of the key challenges not only in Serbia, but also in the whole world. In this connection, inclusion into contemporary frameworks for the development and European integrations imply the necessity to redirect the development and take into account climate change problem, as well as to build adequate capacities for its implementation. Therefore, it is necessary for environmental protection and management systems, to tend towards an appropriate political framework which advocates climate change problem (Crncevici et al., 2011).

On the territory of the Republic of Serbia 390 companies have the system ISO 9001, while only 124 companies, almost three times fewer, have the certified system of management compatible with ISO 14001 standard compared to 1,075 surveyed companies in 2011 (Zivkovic, 2011). Taking into account the above data, given that quality management standards are a priority to industries, particularly the food sector, promoting ISO 14001 will present a major challenge. Despite that ISO 14001 EMS could be implemented by any organization whether manufacturing, service provider or commercial, in addition to the existence of more environmentally polluting industries, the rational behind the selection of the food sector is based on the following: (i) It is one of the top economy sector in the country; (ii) Food products are one of the top industrial exports; (iii) Food companies are well known to be influenced by public perception associating food quality with environmental quality (Bremmers et al., 2006, pp. 214-231); Even though, the majority of food industries are SMEs, the cumulative impact as a result of the large number of food industries is expected to be high (Sakr, D. et al., 2010, pp. 210-218).

Results from this work suggested that Serbian citizens have developed environmental awareness, and therefore all activities that contribute to environmental protection will strike a chord with the public. Certain hopelessness that can be seen from the questions *K3* indicates the need for further strengthening of environmental awareness of Serbian citizens. There is a need to build awareness that each individual or group small or big, in a different ways, can contribute to preserving the environment.

These results are in accordance with previous research which has been shown that the protection of the environment becomes more important in Serbia every year. Citizens' awareness of the significance of the environmental protection is slowly increasing owing to, among others, a number of governmental and nongovernmental actions and campaigns (Nikolajevic, 2009, pp. 141-153).

REFERENCCES

[1] Bremmers H, Haverkamp D, Sabidussi A, Omta O. (2006), Do stakeholder groups influence environmental management system development in the Dutch Agri-food sector? Business Strategy and the Environment, 216(3): 214–231.

[2] Carboni R., Vassallo M., Conforti P., D'Amicis, A., (2000), Indagine sulle attitudini di consumo, la disponibilita` a pagare e la certificazione dei prodotti biologici: spunti di riflessione e commento dei risultati scaturiti. La Rivista di scienza dell'alimentazione, 29: 12–21.

[3] Crncevic, T., Maric, I., Joksimovic, B. (2011), Strategic environmental assessment and climate change in the republic of serbia – support to development and adjustment process. SPATIUM International Review, 26: 14-19.

[4] Curtis, K.R., Mccluskey, J.J., Wahl, T.I. (2004), Consumer acceptance of genetically modified food products in the developing world. AgBioForum, 7 (1&2): 70-75.

[5] ECLAC (Economic Commission for Latin America and the Caribbean) (2000), Role of environmental awareness in achieving sustainable development, Online Viewed 5 June 2013, http://www.eclac.cl/publicaciones/xml/4/8824/lcr1961i.pdf.

[6] Gadenne, D., Kennedy, J., McKeiver, C. (2009), An empirical study of environmental awareness and practices in SMEs. Journal of Business Ethics, 84 (1):45-63.

[7] Gerrans, P. A., Hutchinson, W. E. (2000), SustainableDevelopment and Small and Medium-Sized Enterprises: A Long Way to Go, in Hillary, R. (ed.), Small and Medium-Sized Enterprises and the Environment Business Imperatives. Sheffield, UK: Greenleaf Publishing, pp. 75–81.

[8] Hossain, F., Onyango, B. (2004), Product Attributes And Consumer Acceptance Of Nutritionally Enhanced Genetically Modified Foods. International Journal of Consumer Studies, 28 (3): 255-267.

[9] Kuckartz, U., Grunenberg, H. (2003), Environmental awareness and acceptability of pricing policies in Germany. in: acceptability of transport pricing strategies. MC-ICAM Conference, Acceptability of Transport Pricing Strategies. Dresden, Germany, pp. 125-136.

[10] Lazić B., Malešević M., (2004), Osnovni principi organske poljoprivrede. Zbornik radova Naučnog instituta za ratarstvo i povrtarstvo, 40: 439-445.

[11] Lee, K. (2000), Strategic Corporate Change Towards Sustainable Enterprise in the Environment Era. Proceedings of the Business Strategy and Environment Conference. Shipley: European Research Press, pp. 271–278.

[12] Massoud, M.A., Fayad, R., El-Fadel, M., Kamleh, R. (2010), Drivers, barriers and incentives to implementing environmental management systems in the food industry: A case of Lebanon. Journal of Cleaner Production, 18: 200–209.

[13] Miles S., Frewer L.J., (2001), Investigating specific concerns about different food hazards. Food Quality and Preference, 12, 47–61.

[14] Melnyk, S.A., Sroufe, R.P., Calantone, R. (2003), Assessing the impact of environmental management systems on corporate and environmental performance. Journal of Operations Management, 21: 329–351.

[15] Naveh, N., Marcus, A.A. (2004), When does the ISO 9000 quality assurance standard lead to performance improvement? Assimilation and going beyond. Engineering Management, IEEE Transactions on, 51(2004): 352-363.

[16] Nikolajević, V. (2009), Modernization of the oil refinery in Pančevo as a means of environmental protection. Industrija, 37(4): 141-153.

[17] Ofori, G. (1992), The environment: the fourth construction project objective? Construction Management and Economics, 10: 360–395.

[18] Papic Brankov, T. (2013), Hrana buducnosti ili bioterorizam. Beograd: Sluzbeni glasnik.

[19] Papic Brankov, T., Sibalija, T., Lovre, K., Cvijanovic, D., Subic, J. (2013), The impact of biotechnology knowledge on the acceptance of genetically modified food in Serbia. Romanian Biotechnological Letters, Accepted paper.

[20] Paul, H. (2012), Business and Biodiversity: A Licence to Operate, ECO 45: 4-6.

[21] 21) Perry, P. (2001), New Millennium may Usher in New Day for ISO 14001, Online Viewed 10 June 2013, http://www.businessstandards.com/content/16ftr3.asp.

[22] Petts, J., Herd, A., O'hEocha, M. (1998), Environmental Responsiveness, Individuals and Organizational Learning: SME Experience. Journal of Environmental Planning and Management 41(6): 711–731

[23] Rowe, J., Hollingsworth, D. (1996), Improving Environmental Performance of SMEs, Eco-Management and Auditing, 3: 97–107.

[24] Sakr, D. A., Sherif, A., El-Haggar, S.M. (2010), Environmental management systems' awareness: an investigation of top 50 contractors in Egypt. Journal of Cleaner Production, 18 (3): 210-218.

[25] Schifferstein H.N.J., Oude Ophuis, P.A.M., (1998), Health-related determinants of organic food consumption in the Netherlands. Food Quality and Preference, 9: 119–133.

[26] Siergist, M. (2008), Factors influencing public acceptance of inovative food technologies and products'. Trends in Food Science& Technology, 19 (11): 603-608.

[27] Williams P.R.D., Hammit J.K., (2001), Perceived risks of conventional and organic produce: pesticides, pathogens, and natural toxins. Risk Analysis, 21, 319–330.

[28] Wolf, M.M., Bertolini, P., Parker-Garcia, J. (2004), A Comparision of Consumer Attitudes towards GM Food in Italy and the USA. In: EVENSON, R.E., SANTANIELLO, V. (eds), Consumer Acceptance of Genetically Modified Foods, UK: CABI Publishing, pp. 131-141.

[29] Yiridoe, E.K., Marett, G.E. (2004), Mitigating the high cost of ISO 14001 EMS standard certification: lessons from agribusiness case research. International Food and Agribusiness Management Review, 7 (2): 37–62.

[30] Zivkovic, S. (2011), Uloga i znacaj lica za bezbednost i zdravlje na radu u privrednim drustvima u Republici Srbiji. Univerzitet u Nisu. Nis: Fakultet zastite na radu.

[31] Zivković, S, Takić, Lj., Živković; N. (2012), The improvement of environmental performances by applying ISO 14001 standard: A case study. Chemical Industry and Chemical Engineering Quarterly 00: 1-25.

INVESTMENT PROJECTS OF MUNICIPALITY OF BUJANOVAC SEEN THROUGH THE PRISM OF ECOLOGICAL DEMANDS

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Abstract: This paper is based upon the researches that are conducted during the making of the development strategy of municipality Bujanovac.1 This paper presents the research results and offers investment projects of municipality of Bujanovac which have the function of keeping and protecting of the environment of the Municipality. We present the explanation of the profile of making the ecological landfills as a middle-term project of development of municipality of Bujanovac.

Key words: Investment Projects, Strategy, Ecological Landfills, Municipality of Bujanovac, Environment Protection, Project Manager

JEL classification: Q10, Q13, Q15

UDC 005.8:352(497.11); 352:502(497.11)

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INTRODUCTION

In the Republic of Serbia, just like in other developing countries there is an enhanced awareness of the need for formulating and implementation of strategies for economic and sustainable development on the local and regional level. The interest for education, innovation and cooperation (business and interethnic) and their bringing of advance, stable and ecologically healthy society, of local people in the municipality of Bujanovac is very strong. The municipality of Bujanovac is one of the most underdeveloped areas of the republic of Serbia. Just like the other underdeveloped municipalities, it has problems with employment and economic standards. According to all the indicators of the level of economic activity, this municipality is far behind the average of the Republic.

Offered investment projects are in accordance with the norms for environment protection. The development of trade is the key element of the strategy of economic development of all countries. Economic development of all the countries lies in the industry. Because of the exploitation of the natural resources, usage of the amount of energy and creation of waste materials, the industrial sector is at the same time one of the most important causes of pollution and the fall of the life quality of the environment. Industry appears as the source of ecological problems on all levels: local, national, regional and global. (Vuković, M., Štrbac, N., 2011:7).

THEORETICAL BACKGROUND

The overview of the key parts of the strategy gives the diagnose of the current situation and identification of strategic values and strategic developmental goals, especially from the aspect of conservation and environmental protection of the municipality.

After getting acquainted with the issues and the potentials, a diagnosis of the current state, developmental possibilities, needs and competitive advantages was done. Based upon the obtained information the priority interventions in the area of infrastructure and environmental protection were offered, as well as the investment projects in this area.

The Municipality of Bujanovac is located on the South of Serbia, at the 360th kilometer of the road from Belgrade towards Macedonia and Greece. The city of Bujanovac represents the administrative, economic, cultural, health and educational center of the municipality with very characteristic landmarks.

Seen from the territory point of view it belongs to the Pčinjski region. The municipality of Bujanovac is located between 42^o 15` 35`` and $42^o$ 23` 30`` North latitude and 21o 36` 30`` and $21^o$ 57` 00`` East longitude on the surface of 461 km^2

and it is one of the larger towns in Serbia. The municipality of Bujanovac is located between the municipalities of Preševo, Trgovište, Vranje, Kosovska Kamenica and Gnjilane, and in one part at the South (13km) it is bordered with Republic of Macedonia. Border crossing with Macedonia is at the distance of 32km (Prohor Pčinjski) and at the distance of 30km there is the crossing Čukarka.

Corridor 10 runs through Bujanovac, which in the near future, will enable Bujanovac much better conditions for economic development and employment. The specificity of geological structure of Bujanovac is granite pluton. There is also very intensive soil erosion.

Bujanovac as an administrative center of the Municipality it is located at the altitude of 400m. It lies in the pit surrounded by hills. Around 30% is plain area and 70% of hills and mountains in the area. River flows of Bujanovac are Moravica, Južna Morava, Pčinja, Trnovačka reka, Krševačka and Breznička. It is planned to regulate the Južna Morava, in the area of 2,300m, Trnovačka river in the area of 1,700 m and to regulate Krajmirovska river in the area of 500 m. Municipality of Bujanovac is rich in sources of minerals and thermal waters, which belong to the bicarbonate, natrium type and they are of very good quality as healing spa water. Besides chemistry traits the geothermic ones are also very significant (temperature around 43^{o}C). Of the specific significance is thermo-mineral water of Bujanovačka spa – Rakovački spring. By its characteristic, thermal waters of Bujanovac gain the character of a significant tourist motive for development of Spa tourism. Bujanovac and the other towns that are in the water system use the drinking water from the underground streams. The quality of the water from these wells is regularly controlled by the Hygienic Institute from Vranje according to the determined standards.

The municipality of Bujanovac, from the renewable sources, has solar energy, biomass energy, wind energy, geothermal energy and hydro energy. The possibilities of using the solar energy have not been considered in detail, nor are the possibilities of using the winds, especially in the part towards preševsko-kumanovska area where there is a lot of wind called “firke“. They do not have any type of renewable energy sources like liquid or firm fossil fuels (oil, gas, coal). Mineral resources are quartz, feldspar and mica around Samoljica and Borovac. In the river bed of Južna Morava, Ljiljanska River, Krševička River and Pčinja there is an uncontrolled exploitation of the sand and gravel, which jeopardizes the ecosystem of the rivers, as well as the degradation of the surrounding agricultural land.

The existing road network enables its connection to the surroundings. Road network of the Municipality of Bujanovac consists of 365 km categorized roads. From the economic significance point of view there are 32 km (8.8%) of highway, 67 km (18.4%) regional and 266 km (72.9%) local roads.

ANALYSIS

A detailed SWOT analysis has been done for all the social segments of the Bujanovac municipality, and in this paper we will present the analysis of the environment and a unique SWOT analysis of the municipality. In this way we enabled an easier comparison and a better understanding of the context of the significance of the environment in all the potential investments. SWOT analysis represents a usual instrument of strategic planning, for the identification of comparative advantage, but also the basic weaknesses of the municipality, which represent the main inputs, i.e. the inhibitors of development. By using the SWOT analysis we gave the review of the internal strengths and weaknesses, as well as the opportunities and the threats which are under the influence of external factors and together with the detailed analysis of current situation, give the basic elements for defining of strategic goals and priorities, as well as the parameters of their justification.

Table 1: SWOT analysis of the environment

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
Environment			
▪ There are LEAP and GUP ▪ Regulation plan for evacuation and the treatment of the waste waters ▪ Corridor 10 ▪ Bujanovačka spa ▪ Geographical position ▪ Exceptional professionalism of the people ▪ Positive political will ▪ Good communication between JP and professional services ▪ Investment documentation exists	▪ GUP has not found the location of the landfill (substation) ▪ Political and ecological/infrastructural priorities are not the same ▪ Lack of funds for realization ▪ Weak cooperation with the neighboring municipalities especially Vranje and Preševo ▪ Insufficient number of staff, poor infrastructure, especially in the rural parts of the municipality ▪ In accordance with planning documentation (general and detailed) ▪ Poor technical equipment in JP	▪ 400,000 Euros for the substation ▪ Complete equipment given to communal staff of containers for separation of waste ▪ Mini (mounting) facilities for clearing the waste waters (a few villages are already interested) ▪ Bujanovačka spa as a foundation of sustainable development ▪ Infrastructural corridor (Niš-Makedonija) gas pipeline, optical	▪ The directors do not understand this need ▪ Ecological catastrophe because of the waste from "Svetlost" ▪ Black points: depleted uranium and the sponge factory ▪ Channel Dunav-Vardar as an obstacle in planning

When we talk about the environment and the possibilities of its protection, the municipality of Bujanovac is not in the good position. Great pollution from the sponge factory and the depleted uranium as a consequence of the 1999 bombings, are just the

largest from all the other problems which exist in this area. The strategic documents are brought for the protection of the environment (LEAP and GUP), but as the largest problem we have the finance for the realization of the existing projects. All local communities should have a developed local ecological action plan in order to coordinate their activities by planned directing and the organizational principles. Ecological action plan enables the quality valorization of the activities and by that the control as well. The making of LEAP, represents the complex process which depends on many factors. Ministry responsible for dealing with the business of environment protection recommends a specific methodology as a direction for formulating of LEAP of all municipalities in the Republic of Serbia through the following creation process phases:

- Preparation activities,
- Identification of the participants,
- Forming of coordinated body,
- Forming of work group and hiring technical bodies,
- Determining of the current state of the environment (participants' assessment),
- Creation of the vision of the community,
- Determining the priority areas of work within the LEAP,
- Expert assessment of the state of environment within the priority areas,
- Creation of the action plan for the priority areas and
- Determining the priorities in realization of the action plan.(Milanović, M.et al. 2012:8).

All the activities of the local governments in the direction of an adequate management of environment protection must be in tune with the activities of the governing state organs. The role of the republic's ministry for environment protection consists of organization of following and control of the state of the quality of environment in the republic, organization of the management, informing and advertising activities. The application of the system laws and the certain activities about the environment protection, followed by standards and all application business on the protection and regulation of the environment, are trusted with to the national agencies for environment. (Milanović, M.et al. 2012:8).

The key role in solving this problem should have the Republic of Serbia and governing ministry which should provide all the conditions for realization of the needed projects which have a purpose of creating the condition for the development of the healthier environment and the quality sustainable development process.

Unique SWOT analysis of the municipality of Bujanovac gives a detailed picture of social and political and economic position in which the municipality is for a number of years. The analysis summarizes the current state in the municipality based upon all the relevant factors that can serve to a more quality creation of the unique development strategy with the goal of faster economic and social prosperity of this neglected part of Serbia.

Table 2: Unique SWOT analysis

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
Unique SWOT analysis of Bujanovac municipality			
▪ Geographical position ▪ Corridor 10 ▪ Vicinity of two border crossings ▪ Tourist potential of Bujanovačka Spa ▪ Rural tourism ▪ Natural resources ▪ Mentality of people ▪ Multicultural environment ▪ Multi languages ▪ Tradition ▪ Entrepreneurial spirit ▪ Work habits ▪ Historical cultural heritage ▪ Non-government organizations	▪Infrastructure (traffic, outdated technology, non-existent limited industry zone) ▪Dilapidated facilities ▪Lack of cultural manifestations ▪Unused tourist potential ▪Lack of financial resources ▪Slow privatization ▪Brain drain ▪Unorganized market presentation ▪Confusions about the quality ▪Lack of unique marketing presentation ▪Lack of education for new programs	▪ Integrated strategy of economic development ▪ Building the new and modernization of the existing facilities of infrastructure ▪ Improvement of cooperation in the region ▪ Investments by diaspora ▪ Reviving the rural households ▪ Production of the new and more profitable cultures ▪ Creation of the Bujanovac brand ▪ Introducing QMS and HACCP ▪ Building the multifunctional facilities in community center ▪ Development of other forms of tourism ▪ New programs of trainings ▪ Promotional activities of the municipality ▪ Euro integrations	▪ Low standard of the citizens ▪ Unemployment ▪ Migrations ▪ External competition ▪ Instable economic and political environment ▪ Intolerance ▪ Legal insecurity ▪ Lack of state strategy for development of this region ▪ Lack of legal regulations and incentives for self-employment and start-up business

The analysis shows that there are conditions for the faster development of the municipality, and that the existing potentials (human, natural) enough for quality solutions of the burning issues which municipality of Bujanovac is facing, and these are: unemployment, lack of quality education, development and modernization of agricultural production, development of entrepreneurship and micro, small and medium enterprises.

However, in order to realize the mentioned plans, it is necessary to take many steps needed for defining and realization of the program of economic development of the municipality. The first and the most important precondition for any kind of development is strengthening and lifting the infrastructure (traffic, water supplies, electricity, telephone, ecology) in order to even think about and work on the implementation of developmental projects.

When the infrastructure comes to a certain level, there will be motivating conditions for domestic and foreign investments and they will enable the municipality of Bujanovac to participate with its capacities in the market match on the regional level, and national as well, and wider. So, the analysis defined the problems and gave the possible solutions for them, now the most important factor is the speed of conducting the necessary programs and solving the piled problems, and after that the realization of developmental programs and full usage of the existing economic capacities with the goal of generating high profit and greater employment (especially of the young and women).

The following should take part in the solving of the current situation: stakeholders or interested parties, the governing ministries of Republic of Serbia, local government, NGOs, foreign financial and non-financial organizations and institutions. The subordination of all stakeholders is very important as well as the awareness that the speed of implementation of developmental plans is the crucial factor that will determine the lives and the economic standard of the citizens of Bujanovac in the following period. One of the essential factors that has a goal of development of the municipality is the encouraging the process of self-employment and the public and private partnership and bringing a special legal regulation in order for these processes to speed up, and especially the opening of the possibilities for the operation of start-up and microcredit funds. Providing the conditions for functioning of these funds can be done by implementation of good practice of developed countries as a strategic move in solving the issue of unemployment and the more dynamic development of family business.

DEFINING OF DEVELOPMENTAL POLICY

After the shown diagnosis of the condition, problems, developmental possibilities, needs and competitive advantages, the activities are directed towards defining the developmental policy of the municipality of Bujanovac, and especially from the strategic priority of infrastructural development in the function of preserving and protecting the environment. According to dr Djuric, coordinator of the project, the essence of the process of implementation is to turn the strategy into practice**.** (Đurić, Z., 2004:1)Good implementation is of the same importance as good formulating of the strategy**.** (Maši**ć**, B.,2007:3)

Developmental policy represents the group of principles, attitudes and criteria on which the process of making decisions about directions, methods and the speed of growth and development of municipality are based. Defining the developmental policy of the municipality of Bujanovac comprises the creation of the vision and the mission of municipality, as well as determining the strategic goals of the municipality; it is the result of diagnosis of the condition, developmental possibilities, needs and competitive advantage of the municipality of Bujanovac.

Developmental policy is the long-term policy of municipality of Bujanovac and it relates to longer period of time in which very significant changes can be

done in developmental orientation of the municipality, its position in the region and its influence on the overall social development. The precondition is the strong partnership between public and private sector, society, as well as including all important groups in the process of deciding and setting the strategic goals and priorities. In order for the municipality to realize the developmental policy long-term, it has to determine the strategy of realization i.e. developmental strategy. Developmental strategy has an orientation character and it shows the way to the municipality in which to accomplish the developmental goals.

Developmental strategy of the Bujanovac municipality means the increase in its dimensions, i.e. the scope of activities in all areas and it has a goal of defining the economic future of the municipality through sustainable and equally balanced development. It is necessary to adjust the economic growth (production and consumption) with the goal of rational usage of natural resources for production of the products which have many purposes and duration, with the minimum of waste and harmful emissions. (Petrović N., 2012:9)

Developmental policy of Bujanovac municipality must be adjusted to the principles of sustainable development. The concept of sustainable development is based upon the assessment and recognition of natural limitations which are imposed by the possibility of ecosphere to absorb the effects of human activity. Sustainability has to fulfill two basic demands:

- Ecological systems have to be protected and kept for the future generations not to be deprived of the existing and assumed investment
- Ecological systems should not be valued in the way that would impose risks to the future generations.

Sustainable development comprises the combination of scientific principles and social value, where after those values are changed, the question of the sustainable development comes down to interpretation by the groups or social interests.

Vision of the Bujanovac Municipality: Bujanovac Municipality is economically sustainable, ecologically clean, economically and touristicaly developed, equipped infrastructurally and connected by traffic – one of the leading municipalities in the south of Serbia. Vision and the mission are base elements of every planning. (Kastratović E.,2008:2)

Strategic goals are the foundations of the development process of Bujanovac municipality and they are formulated as the real possibilities during the expected time period of ten years. These goals should have a broad acceptability, to be obvious and not too far from the current reality in Bujanovac Municipality.

The values of the municipality that represent the real foundation for a successful realization of the vision, mission and strategic goals are among the others, current activities and the efforts to protect the environment and to remove

the potential and the existing polluters of the waters, soil, air and animal and plant world.

STRATEGIC GOALS

Strategic goals are the foundation of the development process of Bujanovac municipality and they are formulated as the real possibilities during expected time period of ten years. These goals should be widely accepted, obvious and not too far from the current reality in Bujanovac municipality. Strategic goals of Bujanovac municipality are presented in the form of profiles in the following tables.

Table 3. Profile 1. Creation of the study of the zones and areas of sanitary protection

Name of the project	Determining the zones and areas of sanitary protection
Short description of the project	Regulation of the space in to zone of the spring for the water supplies because of spring's protection
Basic assumptions and goals	Enabling the basic conditions for living and working of the citizens of Bujanovac and fulfilling of the basic ecological standards
Institutions for implementation, owner of the project	Bujanovac Municipality
Assessed time period of implementation	1 year
Assessed financial arrangement for the investments	According to the commercial conditions of the market
Expected users (target groups)	Citizens of Bujanovac , economic entities
Expected benefits (expected gains or savings, new work places, type and level of improvement of life quality etc.)	Increase of life quality and health of citizens, creating the preconditions for development of economy
The condition of the project's preparation (e.g.: study of realization, preliminary and final realization, invoice of amounts, and assessment of costs by the engineers).	Examination of the soil, determining the zones of realization of the plan with the determined zones of protection

Table 4. Profile 2. Study for determining of location of city landfill

Name of the project	Determining the location of the city landfill
Short description of the project	Relocating the existing non-hygienic landfill and determining the new location
Basic assumptions and goals	Advancement and reaching the necessary ecological standards with the goal of increasing the quality of lifestyle of the citizens, improvement of attractiveness of Bujanovac as a tourist destination and the destination for investments.
Institutions for implementation, owner of the project	Bujanovac Municipality
Assessed time period of implementation	1 year
Assessed financial arrangement for the investments	According to the commercial conditions of the market
Expected users (target groups)	Citizens of Bujanovac
Expected benefits (expected gains or savings, new work places, type and level of improvement of life quality etc.)	Improvement of hygiene in the city, determining the location outside the city without the influence on the life of citizens. Cleaner city, ecologically healthy area.
The condition of the project's preparation (e.g.: study of realization, preliminary and final realization, invoice of amounts, and assessment of costs by the engineers).	Examination of the locations that can satisfy the sanitary conditions for determining the new location for a landfill

Table5. Profile 3. Study for reconstruction of the sewerage network and the treatment of waste waters

Name of the project	Reconstruction of the sewerage network in the city of Bujanovac and construction of new sewer networks and the treatment of waste waters.
Short description of the project	Reconstruction of the outdated sewerage network and construction of new sewerage network and enabling to citizens, economic entities better life conditions
Basic assumptions and goals	Enabling basic conditions for living and working to the citizens of Bujanovac and fulfilling of basic ecological standards.
Institutions for implementation, Assessed time period of implementation, owner of the project, Assessed financial arrangement for the investments	1. Reconstruction and widening of the sewerage network in Bujanovac; 2. Sanitation, closing and remediation of the city landfill in Bujanovac (investment value 1,716,400 rsd.); 3. Equipping JP „Komunalac" – supply of the vehicles for gathering and taking away the waste, tanks for sewerage treatment and funeral vehicles; 4. Correction of the sewerage network in the «4 jul» street in Bujanovac 300,000 (Program 2007, Direction, II.1 / 12) 5. Continue the construction of sewerage network in Veliki Trnovac, north basin «Vodotehnika» 18,500,000 (Program of infrastructural development , ordinal number 3) 6. Evacuation of waste waters in Veliki Trnovac. Sewerage collection Veliki Trnovac, Bujanovačka spa «Vodotehnika» 24,500,000 (Program of infrastructural development for 2007 , ordinal number 5) 7. Pumping station for waste waters «Bujanovac» with relocating the existing one and the collector to Trnovačka river «Vodotehnika» 35,000,000 (Program of infrastructural development , ordinal number 7) 8. Construction of the factory for cleansing the waste waters 90,000,000 9. Construction of the sewerage network in the village Rakovac «Vodotehnika» 20,336,000 (Program of infrastructural development , ordinal number 9) 10. Construction of the sewerage network in the new settlement «Vodotehnika» 5,000,000(Program of infrastructural development , ordinal number 10) 11. Plant for cleansing of the waste waters, Lučane «Vodotehnika» 6,700,000 (Program of infrastructural development , ordinal number 11) 12. Evacuating of waste waters in the village Turija with the cleansing system «Vodotehnika» 13,823,190 (Program of infrastructural development , ordinal number 31) 13. Evacuating of waste waters in the village Lučane, sewer network «Vodotehnika» 15,674,000 (Program of infrastructural development , ordinal number 32)

	14. Evacuating the atmosphere waters in the village Veliki Trnovac, North basin, «Vodotehnika» 7,000,000 (Program of infrastructural development , ordinal number 35) 15. Building the sewerage network in the village Letovice (18,000,000 rsd). 16. Building the sewerage network in the village Končulj. (19,000,000 rsd). 17. Building the sewerage network in the village Somoljice (15,000,000 rsd). 18. Building the sewerage network in the village Dobrosin (18,000,000 rsd). 19. Building the sewerage network in Bujanovac, Novo Naselje, streets: Nikola Tesla, Banjska and M.N. Cale (5,000,000 rsd) 20. Building the sewerage network in the streets according to the regulation plan (5,000,000 rsd) 21. Building the sewerage network in Vranjska street in Bujanovac (2,000,000 rsd).
Expected users (target groups)	Citizens of Bujanovac
Expected benefits (expected gains or savings, new work places, type and level of improvement of life quality etc.)	Enabling the basic conditions for a quality life of the citizens of Bujanovac, increasing the level of ecological conditions, as well as the improvement of conditions for functioning of households and citizens of Bujanovac.
The condition of the project's preparation (e.g.: study of realization, preliminary and final realization, invoice of amounts, and assessment of costs by the engineers).	Realized feasibility study, projects and formed the prices of realization

Table 6. Profile 4. Establishing the EMS

Name of the project	Establishing the EMS
Short description of the project	Establishing the environmental management system (EMS) according to the ISO 14001:2000 in enterprises in Bujanovac municipality
Basic assumptions and goals	Environment protection and providing the health and protection to citizens and employees. Raising awareness of the employees about the measures for environment protection and measures for their life and health.
Institutions for implementation, Assessed time period of implementation	Consulting organizations
Assessed time period of implementation	Ten years
Assessed financial arrangement for the investments	According to the commercial market conditions
Expected users (target groups)	Citizens and economic entities of Bujanovac municipality
Expected benefits (expected gains or savings, new work places, type and level of improvement of life quality etc.)	Quality life environment, air, drinking water, reduction of waste and air pollution, rising awareness of environment, increase in pleasure of citizens, increase in life quality.

Certification of the established EMS according to 14001:2000

- Certification of the established EMS is done by an approved certification body;
- Certification lasts up to 3 months;
- Certification comprises the checking and examination of EMS during its application.

Monitoring the certified EMS

- Internal monitoring is the supervision over the established EMS by the trained evaluators.
- External monitoring is the supervision over the established EMS by the certification body. External supervision is done once a year.
- Within the process of ecological management, mangers have to set the current goals, plans and strategies which they will apply. The base of a successful planning is the result of predicting of the characteristics of the environment, i.e. the assessment of relevant future events or conditions. (Nešković, S. 2011:4).

The goals of ecological management include the following:

- Prevention and solving of the ecological problem;

- Establishing the limits,
- Establishing and keeping of the institutions, which will effectively help the ecological research, monitoring and management;
- Warning about the danger and identifying the possibilities for its overcoming;
- Keeping and eventual improvement of the existing resources;
- Improvement in the "quality of life";
- Identifying of useful new technologies or policies.(Petrović, N., 2007:5).

The following is significant for the success of the ecological management:

- Set the clear goals and priorities in the area of environment protection;
- Relevance of management and the choice of an appropriate ecological strategy;
- Adequate position of the ecological manager in the organization;
- Objective division of ecological business and responsibility;
- The ability of the manager to solve ecological issues;
- Active relationship in realizing ecological goals;
- Planning and communication;
- Dedication to ecological activities;
- Flexibility in doing business;
- The control of realizing the projected ecological tasks and comparative advantages of an organization. (Nešković, S. 2011:4)

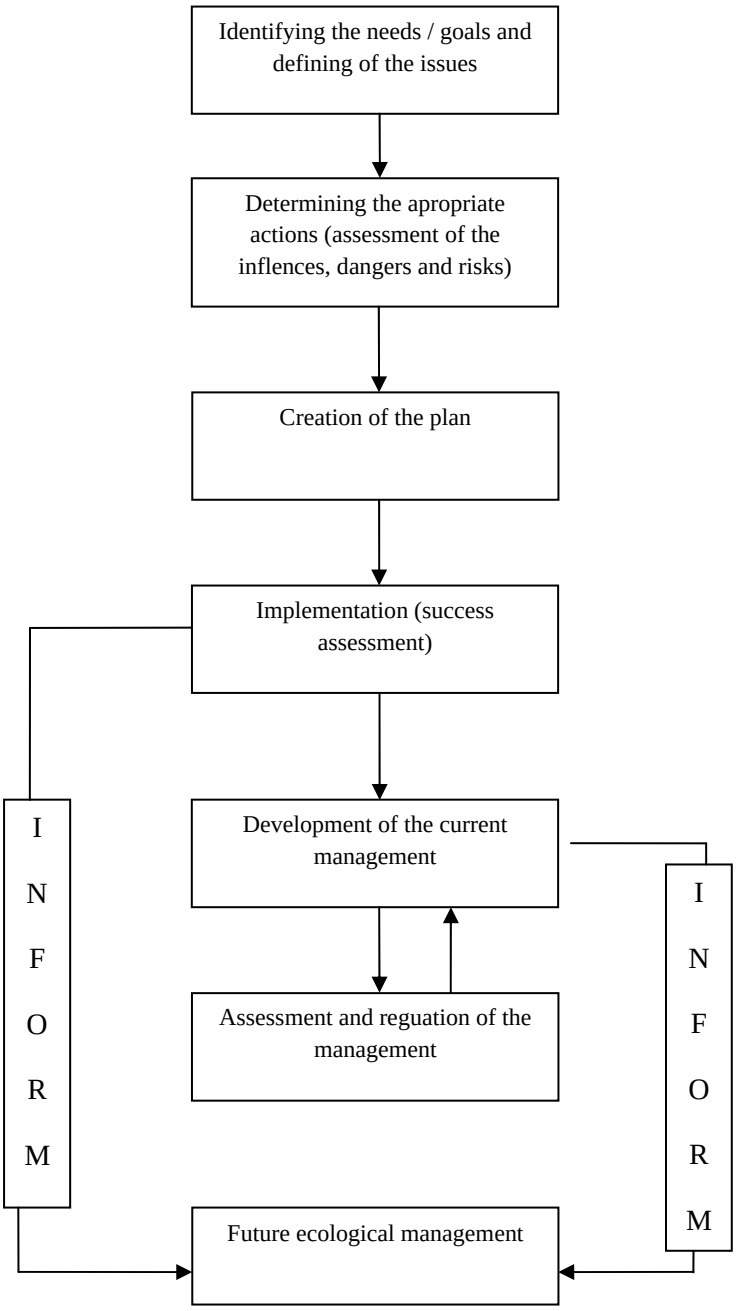

Figure 1. The scheme of the ecological management practice

Multidisciplinary approach of the ecological management is seen by the application of the various disciplines in obtaining the information by using antique

skills and consideration without the tendency toward an integrated unification of the results obtained.

Interdisciplinary approach of the ecological management implies close cooperation of various specialists with the goal of integrating the obtained concepts. The essence of the both approaches is the fact that the topic they are researching can be a part of complex transnational and global ecological, economic and social interactive relations which are influenced by politics and ethics.

(Nešković, S. 2011:4).

The issue of environment protection highly depends upon the local residents, their habits, attitudes and other socio-cultural aspects. Having in mind that the problematic of the environment protection can be seen through local dimension, the municipal parliament and the government is held responsible for solving the existing problems.

A certain number of municipalities in the organizational structure of the local government have a Secretariat for protection and development of the environment. The responsibilities of such secretariats are very wide within the concept of the protection. Activities they conduct are the following:

- Programing and the planning of measures and activities of sanitation, protection and development of environment;
- Planning of the measures for protection of residents and material goods;
- Control of conducting the planned measures;
- Preparation and organization of the necessary supervision and measuring the elements of environment (water, air, soil, groceries, noise and communal waste);
- Conducting the obligatory and other documentation about the state of the environment;
- Participation in realization and innovation of the land registry of the sources of pollution of air, water and soil, sources of noise and radiation, dangerous materials as potential sources of ecological accidents. (Milanović, M. and sar. 2012:8).
- On the state level, the Agency for protection of environment of Serbia is formed, and it realizes the professional business which monitors the state of the factors of the environment through the indicators of the environment, registry of polluting substances etc. It conducts the state monitoring of quality of air and waters, including the conducting of regulated programs for quality control of air, surface waters and underground waters; collects and unifies the data on environment, it processes them and it gives the report about the environment's current state and conducting of the realization of the environment protection. In our country, the first normative, law regulations about the environment protection appeared in the seventies of the last

century, and from 1991 there is a Law on environment protection as a state regulation, and later the Law on the basis of environment was brought as a federal regulation. It was terminated by the Law on environment protection from 21.12.2004, which was changed on 12.05.2009.(Heleta,M. 2010:10).

Agency cooperates with the European agency for environment protection, EEA and the European network for information and monitoring – EIONET. In the chart 2. we showed the organizational scheme of the Agency.

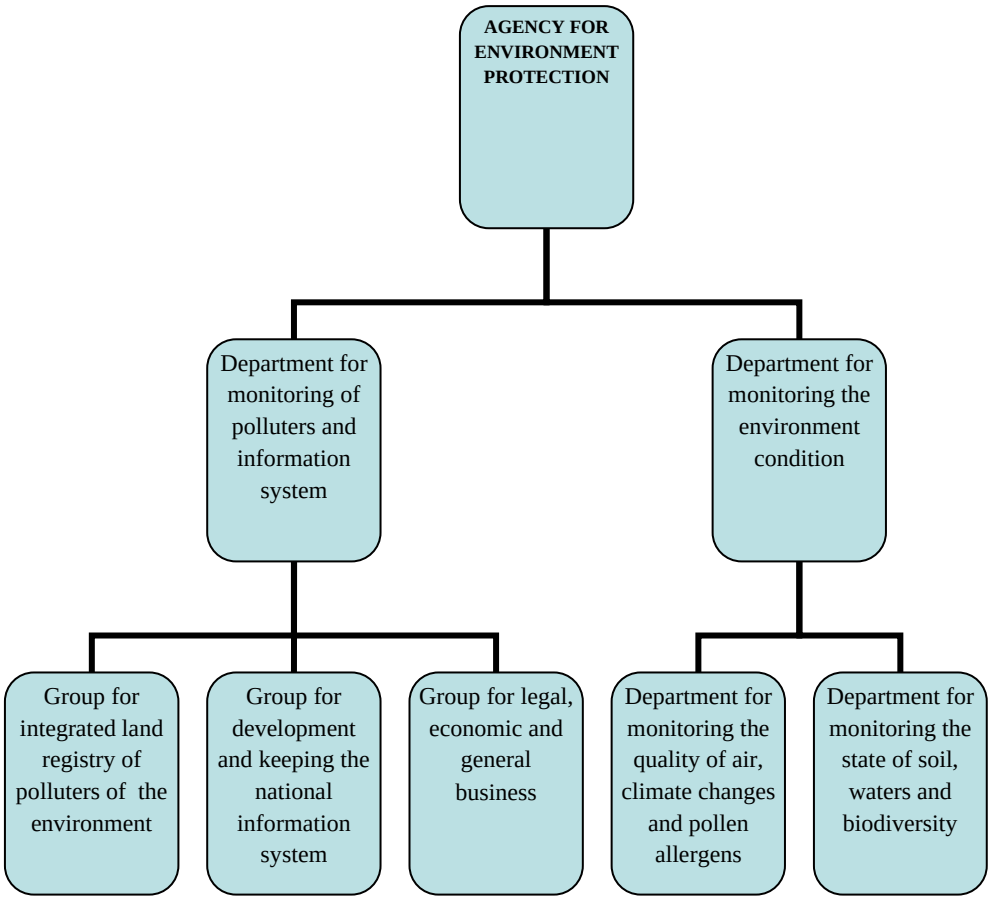

Figure 2. Organizational scheme of the Agency for environment protection of Serbia

CONCLUSION

In our country, just like in the other developing countries there is an increased awareness of the need for formulating and implementing the strategies for economic and sustainable development on the local and regional level.

On the example of municipality of Bujanovac, we can see a strong interest of the people to through education, innovation and cooperation contribute to creating the advanced, stable and ecologically healthy society. Large investments are necessary for modernization of all elements of infrastructure.

Special attention has to be directed towards the action of changing the mentality of the people, with the goal of raising social awareness about the importance of the environment. Basic economic indicators confirm that this municipality is far behind the average standard of the Republic. The existing infrastructure is in a very poor condition. In the recent years the local government cooperates with the state and the donors and it has done a lot on the improvement of the state.

The absence of a controlled and ecological landfill also represents a great problem for the city of Bujanovac. The illegal leaving the solid waste can be seen all over the place and especially by the side of the roads. This condition and the absence of an adequate landfill influence the municipality of Bujanovac, which then cannot fully activate its potentials for the development of eco-tourism and the production of healthy food. Poor condition of water supply and sewerage networks is just one of the weaknesses. The thing that represents the positive side of this issue is the existence of a certain number of plans for development with the complete project documentation.

The researches have shown that the following activities should be organized in Bujanovac with the goal of environment protection:

- improve solid waste management,
- relocating the existing non-hygienic waste land and determining the new location,
- continue the construction of sewerage network (sewerage and storm water sewerage),
- begin with the cleansing of the waste waters,
- continue arranging the river beds and streams through certain villages,
- regulate the space in the zone of the springs for the water supply in order to protect the springs,
- in perspective the gasification should be done with the goal of developing the heating system of the municipality,
- obtain the necessary equipment and the means for the road maintenance and the purity in the settlements,
- establish the system of management of environment protection (EMS) according to the ISO 14001:2000 in the companies in Bujanovac municipality.

REFERENCES

[1] Đurić, Z., (2004): Menadzment malih i srednjih preduzeca, EF Pristina, p.37;

[2] Heleta,M. (2010)Projektovanje menadzment sistema zivotne i radne sredine, Singidunum University, Belgrade, p.4-5;

[3] Kastratović, E., (2008): «Uvod u menadžment», FMS Belgrade , p.97;

[4] Mašić, B., (2007): Strategijski menadžment, University Synergy, Bijeljina, p.118;

[5] Milanović, Met al. (2012) Ekomenadžment, Belgrade: Faculty of Geography,p.41-42;

[6] Nešković, S. (2011) Ekologija i menadžment životne sredine, Belgrade: Faculty of business Čačak,p. 158,160-161;

[7] Petrović, N. (2012) Ekološki menadžment, Belgrade: Faculty of Organizational Sciences, p.61-62;

[8] Petrović, N., (2007) Ekološki menadžment, Belgrade: Faculty of Organizational Sciences, p.89-90;

[9] Vuković, M., Štrbac, N. (2010) Ekološki menadžment, Bor: Technical faculty;

[10] Vuković, M., Štrbac, N. (2011) Zaštita životne sredine i održivi razvoj, Bor: Technical faculty p.106;

ENERGY EFFICIENCY AND RENEWABLE ENERGY AWARENESS AND IMPACT ON MONTENEGRIN ECONOMY

***Milica Dakovic*[56]**

Abstract: The main goal for choosing the topic is to addressed the actual Montenegrin strategic orientation towards energy efficiency and renewable energy as well as the fact that energy paradigm has been changed recently. However, sudy is going to tackle lack of in-depth analysis on energy efficiency and renewable energy issues. Key question is to analyze two aspects related to energy: public awareness and its importance on overal economic prosperity.

For the purposes of the study it will be used a methodologythat will address two issues/analysis. The first one is quantitative analysis based on the survey on public awareness among Montenegrin population that author has conducted in 2011. The primary research and questionnaire was prepared and realized on the basis of previously defined methodology that was harmonized with key EU public surveys (Eurobarometer surveys in area of energy).

Key research contributions will be in line with the previosly defined assumptions:Sustainable development is a key long-term strategic orientation of Montenegro;Public opinion survey on sustainable development can help policy makers in their futuredecisions related to the energy efficiency and renewable energy questions in Montenegro;Study will fulfill existing lack of data on issues related to public awareness on energy as well as in-depth analysis of its impact on overal economic activities.

Key words: Renewable Energy, Energy Efficiency, Sustainable Development

JEL classification: Q01, Q20

UDC 502.171:620.9(497.16); 620.9:33(497.16)

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INTRODUCTION

Sustainable development based on optimal valorization of energy resources taking care of environmental protection represents one of the key strategic goals of Montenegro and are tracing its future economic development. Following text is presenting key principles of sustainable development and energy efficiency from theoretical and empirical perspective as well.

In the first parts of the document key definitions and theories on sustainable development and energy efficiency are presented and followed by main discussions on key research evaulation approaches and global indicators in area of sustainable development. Second part of the document is focused on a case study on sustainable development in Montenegro. After qualitative research on key policies in area of sustainable development it is presented key results on quantitative research on main indicators in area of sustainable development that are covering questions such as those related to energy efficiency, renewable energy as well as those addressed to environmental protection.

Recommendations that derived from the quantitative research can serve national policy makers to track the process of sustainable development from the citizens' perspective and to make improvements on future policies towards their more efficient and better harmonization with citizens' needs.

SUSTAINABLE DEVELOPMENT AND ENERGY EFFICIENCY

THEORETIC PERSPECTIVE ON SUSTAINABLE DEVELOPMENT

There are numerous definitions of sustainable development but it can be stated that there's still no unique definition and clear strategy on sustainable development as a part of national policies. On the other hand, the most important reason why there's such variety in sustainable development definitions can be explained with variety of different perspectives that sustainable development provides and the nature of sustainable development which is deep and complex. Definitions and concepts of sustainable development changed in opposite ways, over time. According to 'zero growth strategy' from 1970s sustainable development is not compatible with economic growth which can result in 'limits to growth' (commissioned by the Club of Rome whose authors were Donella F. Meadows, Dennis L. Meadows, Jorgen Randers and William W. Behrens). Clear concept of sustainable development was defined in 1980s. Sustainable development, as defined by the Brundtland Commission (1987) is 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'. Additionally, the main goal of sustainable development, by definitions from 1980s was to 'achieve conservation of living resources' (IUCN, 1980). It can be noted that at that time sustainable development had just one

dimension - ecological dimension based on environmental protection and ecological sustainability.

Definition on sustainable development as a concept that is only addressed to ecological sustainability was present in 1990s, as well. According to academic works of Lele in 1990s 'sustainable development is a model of societal change that, in addition to traditional developmental objectives, has the objective of maintaining ecological sustainability' (Baker, 2002). But, there was also significant change in sustainable development definition at that time. In 1990s, Brundtland definition on sustainable development was criticized by other scholars who define sustainable development on a deeper and broader sense.

According to them, there are four different aspects on sustainable development. The first definition of sustainable development is related to its first characteristic which is addressed to 'reproduction'. Campbell stated that 'Sustainable development is a long-term ability of system to reproduce' Campbell (1996). The second characteristic of sustainable development that derived over time is related to Kaiser's definition on the 'balance among environmental, economic and social values'. A third role that was found in works of Mega in 1009s defines sustainable development as 'a link from global to local concerns'.

In nineties another scholar (Maclaren) emphasized characteristic of sustainable development that emerged and was defined as *'a dynamic process that extends from the formulation of a plan'* (Berke, 2002).As a consequence of new definitions and processes in late 1990s, two schools of thinking emerged. These can be defined as 'strong' and 'weak' schools of sustainable development, providing at the same time two different aspects in Welford's academic works (Welford, 1997).

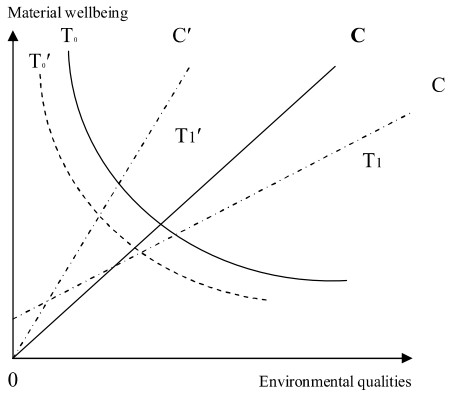

Figure 1. Difference between 'strong' and 'weak' definition on sustainable development

Source: Welford, 1997.

Chart 1 is presenting a theoretical framework that is explaining the model which makes a difference between two schools of thinking – 'strong' and 'weak' school of sustainability. According to strong school of sustainability the key task is to preserve predefined value of environmental capital. n the basis of Welford's academic works sustainable development was harmed by economic forces and is relying on the principles of the 'strong' school of sustainability. Function T0-T is showing that better quality of environment is predetermined with higher costs of living standard. On the other hand, 'weak' theory on sustainability shows that there's possibility to equally develop environment and economic wellbeing (C).However, taking into account environmental and social dimensions of economic growth any mistake in that sense can move trade-off curve (T0-T). Moreover, choosing right sustainable development strategy can create vector 0-C which will address improvements in environmental and economic wellbeing.

At the beginning of 21st century and in addition to the broader scope on the role of sustainable development some authors such as Berke were addressing importance of sustainable development as 'a dynamic process in which communities anticipate and accommodate the needs of current and future generations in ways that reproduce and balance local social, economic and ecological systems, and link local actions to global concerns' (Berke, 2002).New broader scope on sustainable development was strengthened with academic works of Rao who pointed link between sustainable development and capital stocks.

According to Rao, 'Sustainable development is the process of socioeconomic development which is built on the sustainability approach with an additional requirement that the worth of the capital stocks vector (valued at applicable shadow prices) is maintained constant, or undiminished, at each time interval, forever' (Rao, 2000).

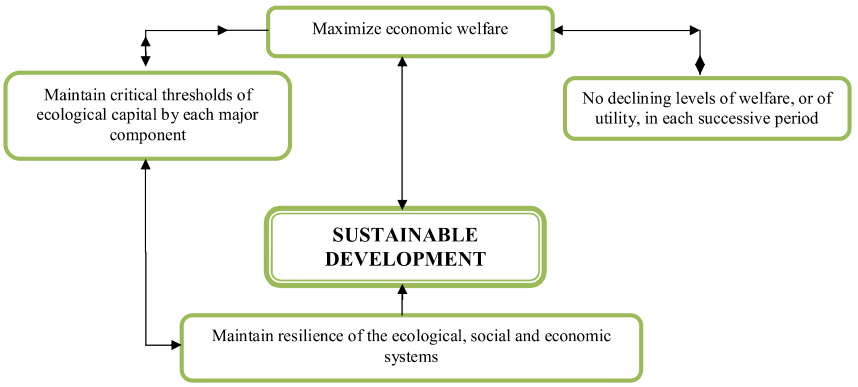

Figure 2. Schematic representation of sustainable development

Source: Rao, 2000.

Constant changes in sustainable development definitions during time and broadened picture on its importance influenced a new paradigm that directly confronted 'zero growth theory' from 1970s. Namely, academic works of Paehlke shows that environmental protection and economic development are becoming mutually compatible and dependent (Paehlke, 2001). It can be noted that over time two additional aspects emerged under sustainable development, such as social and economical and it derived from the social science doctrine (Schubert, 2007). New definitions broadened role of sustainable development and were focused not just on environmental issues, but on economic development and social aspect, as well.

THEORETIC PERSPECTIVE ON ENERGY EFFICIENCY

Energy efficiency represents a crucial factor that can help countries to achieve their projected goals of sustainable development. Early definitions in 1990s addressed important aspects such as need for measurements and techniques that will increase level of saved energy. As MacRac stated in his academic works: 'The relation between sustainable development and the use of resources, particularly energy resources, is of great significance for society' (MacRac, 1992). It means that if countries want to maintain their sustainable development in the long-run they need to utilize their energy resources on the most economically accepted way as well as to pay attention to reduce negative impacts on environment.

Importance and role of energy efficiency in sustainable development emerged over time especially considering global climate issues and high level of energy dependence. It broadened definition at the beginning of 21st century and, according to the World Energy Council in 2006, addressed it to all changes that result in energy reductions used for a given energy service or level of activity (UNEP, 2006). In 2007, Dincer pointed that energy cannot be defined through perspective of sustainable development, but also through its usage (Dincer, 2007).

On the other hand, McLean opposed another key characteristic of energy that can be incorporated in improved definition of energy efficiency. Namely, McLean in his academic works is emphasizing energy consumption as a key issue among different socio-economic groups, population, policy makers and energy suppliers. Regarding that, another aspect of energy efficiency emerged where energy consumption should be taken into consideration. As a consequence of that definition on energy efficiency got another dimension whereas represents 'a cost-effective approaches to meet our increasing energy needs that can be balanced with supply options' (McLeen, 2009).

Latest academic interpretations on energy efficiency presented by WEC agree on the fact that energy efficiency has different aspects. It can be defined on two ways, through consumer and economic perspective. Energy efficiency defined through consumer's perspective represents decreasing of energy consumption due

to high energy prices and financial constraints. Moreover, from economic perspective, energy efficiency is defined in a broader scope: 'it encompasses all changes that result in decreasing the amount of energy used to produce one unit of economic activity' (WEC, 2011).

One important segment of energy efficiency is addressed to renewable energy. Additionally, it is in line with a long-term sustainable development. It is based on all natural resources that are not just unlimited, but also don't have negative impact on environment. It can be stated that one and unique definition on renewable energy still does not exist. Early definitions from 1980s stated that renewable energy is 'energy obtained from the continuous or repetitive currents of energy recurring in the natural environment' (Twidel and Weir, 1986).

Over time, key aspects of defining the renewable energy changed. At the beginning of the 21st century different definitions emerged. In 2002, IEA pointed natural processes as integral part of renewable energy (IEA, 2002). On the other hand, EREC criticized existing definitions on the way that addressed new different modes of use, such as hydropower, biomass, wind, solar and geothermal energy (Boaz, 2010). Level of awareness about renewable energy increased together with its contribution to produce 'cleaner energy' in era of global warming and climate change. Knowing that fact, Boaz in latest academic works from 2010 emphasized 'clear technologies' that are producing energy on the way that can be useful from the sustainability point of view (Boaz, 2010).

SUSTAINABLE DEVELOPMENT EVALUATION

Sustainable development evaluation is predetermined with deep understanding of the meaning of sustainable development itself and its clear interpretation. According to Hajer, sustainable development can also imply on the term 'ecological modernization' which represents a key precondition for long-term sustainable development, based on environmental standards (Murphy, 2000).

This analysis on sustainable development is confronting sustainable development plans given in the EU 5th Environmental Action Plan. According to EU Plan, sustainable development should address mutual dependence between environmental and economic issues and, as a consequence of that should derive from bottom-up strategies and policies adopted on EU level (Baker, 2002).These theoretical confrontations means that there's an overlap between three issues which are integral part of sustainable development and which can have negative influence on the clear picture about sustainable development and its function.

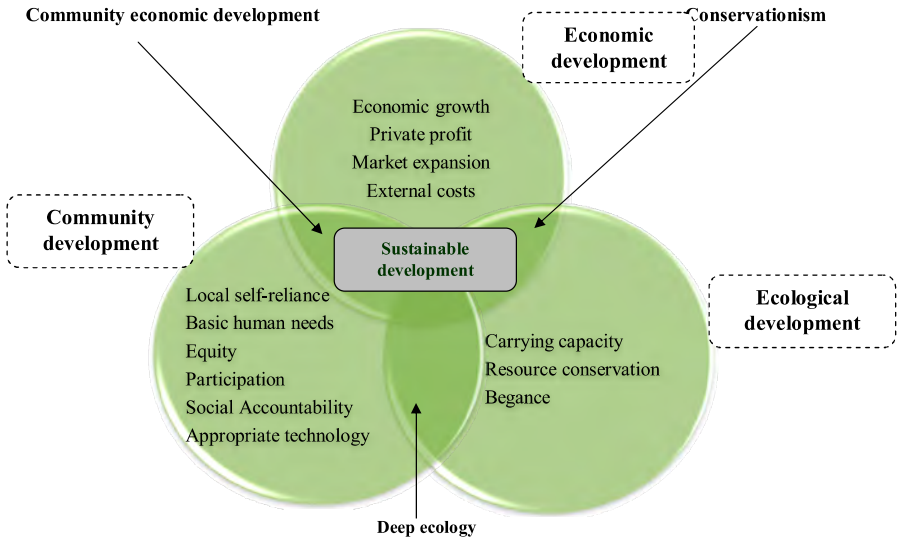

Figure 3. Overlaps in three elements of sustainable development

Source: Baker, 2002.

Sustainable development with its three pillars (social, economic and environmental) represents a process that is tightly connected with different theories and methodologies which cannot be analyzed separately.It can be noted that there's still present difference between theoretical (academic approach) and applied methods and research in area of sustainable development evaluation. According to OECD definition sustainable development evaluation is 'a systematic and objective assessment of an on-going project, program or policy'(OECD, 2002).

Additionally, some Medhurst's definitions on measuring the sustainable development are focused on its complexity, specially focusing on its uncertainty and difficulty to measure. However, according to George, sustainable development evaluation is very important because it is leading sustainable development to become practical in reality (IUCN, 2006.)Additional analysis on importance of sustainable development evaluation are addressing works of Thierstein and Walser who are pointing that evaluation process is very important from the aspect of understanding the processes and criteria for its evaluation (Schubert, 2007).

Sustainable development evaluation process requires integration of its three pillars with not just quantitative, but also qualitative methods in order to measure its value and changes in the main indicators, over time. One of the key aspects of measuring sustainable development is addressed to defining a methodology that will be a basis for research and which will provide basis for future monitoring of changes in key indicators of sustainable development. Such method is important from the perspective

of different countries on the way that it will provide valuable data and insights into public opinion on sustainable development which will help policy makers and represent 'a key factor for institutional innovations' (Schubert, 2007).

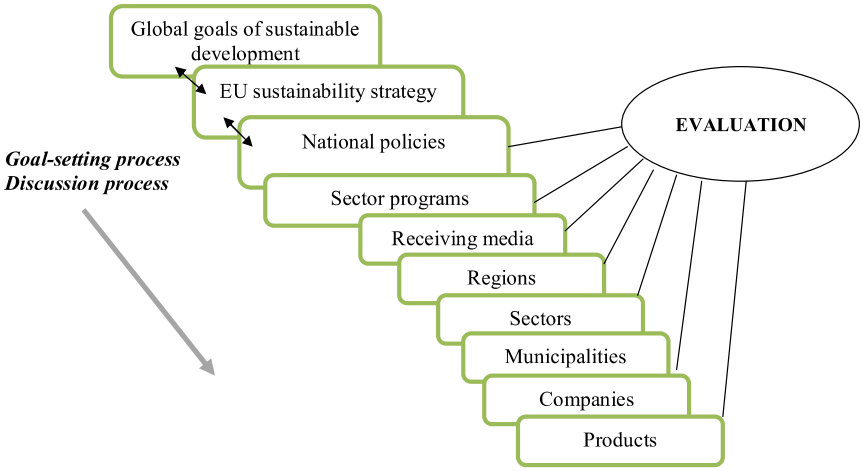

Figure 4. Role and level of sustainable development evaluation in the policy-making process

Source: Schubert, 2007.

Discussions over two approaches brings a new paradigm on sustainable development which represents the most realistic approach which was adopted by EU, OECD and World Bank (WB). New paradigm on sustainable development is primarily based on importance of indicators as a way how to track and follow main trends in sustainable development. Finally, it is expected that indicators will solve the problem of overlaps between three elements of sustainable development. This puts a new light on importance of indicators as key methods in measuring sustainable development.

Sustainable development, focusing on energy efficiency and environmental protecion is measured by setting a list of indicators that will help policy makers in order to get the insight into current situation and future perspectives on related issue. Lack of indicators can result in lack of the basis for further analysis and monitoring on key processes related to sustainable development. According to that statement, Agenda 21 which represents Rio Declaration on Environment and Development in 1992 initiated definition on key sustainable development indicators that 'would contribute to as self-regulating sustainability of integrated environment and development systems' (UN, 2008).

Indicators are developed in order to present a clear picture on current situation from the public perspective and to link public expectations to policy makers on the basis of three previously defined pillars. Additionally, sustainable development indicators are also developed in order to monitor current situation, progress and

changes during time.According to Robert's statement from 1995, 'If you cannot measure it, you cannot manage it' (Sperka, 2000).

There are different concepts and foundations for list of indicators that are developed on local, national, European and global level. Following academic observations are addressed to the key approaches in sustainable development valuation that are accepted and used as methodologies for measuring of sustainable development.

There are three main approaches regarding setting the sustainable development indicators:

Approach I – National sustainable development indicators

According to Stevens some countries (i.e. Sweden) developed their own national sustainable development indicators, based and harmonized with the Brundtland Report definition on sustainable development (OECD, 2002). Moreover, while majority of countries on a global and European level have adopted and implemented their NSSD some of them developed their own sustainable development indicators. For example, Austrian NSSD is based on twenty goals for future sustainable development from which 48 sustainable development indicators derived.

Approach II – Capital approach

Capital approach has its foundations in development theories and definitions on natural capital from Adam Smith and David Ricardo. Definition on human capital is developed in 1960's in works of Shultze and Becker and further developed in Romers models of endogenous growth in 1980's where human capital represents a key component of development (Moe, 2007).Some countries like Canada are using 'capital approach' in measuring their level of sustainable development. Indicators based on a capital approach are oriented towards stock capital in a long turn (UN, 2008).Key characteristic of the 'capital' approach is that is based on changes in stocks and flows of their national assets such as: human capital, financial capital or natural capital (indicators of ecosystem and renewable resources).If sustainability means leaving future generations with at least as many opportunities as we have today, then the way to achieve this by passing on to future generations a level of capital that is at least as high as ours today' (Atkinson, 2007).Measuring sustainable development by using national capital has a national wealth as a basis. Therefore, national wealth can be measured on the basis of five types of capital: financial, real, human, natural and environmental capital. Key disadvantage of such approach is related to the countries resource base and lack of information and ability to maintain their resource bases.

Approach III (Policy based approach)

The predominant or policy based approach represents the approach in which there's strong connection between national policies (strategies in area of sustainable development) and list of chosen sustainable development indicators.

The main goal of such approach is to achieve better communication between policy makers and external stakeholders involved in sustainable development.Policy based approach in sustainable development evaluation is presented on the basis of two main reasons:

1. Even though new EU member states have developed their own sustainable development indicators they are influenced by indicators adopted on EU level. As a consequence of that, new member states are influenced by frameworks and sustainable development indicators that are already defined on EU level. On that way, EU is able to develop and implement unique set of sustainable development indicators on regional level.
2. Sustainable development indicators that are already adopted in EU are result of work with older member states which, consequently, have greater influence on sustainable development policies and strategies in EU, in the future.
3. Analysis on the EU countries that are tracking and measure sustainable development indicators shows their unique approach and relationship. Academic works from Kulig, Kolfort and Hoekstra shows that there are commonalities between existing sustainable development indicators in EU (UN, 2008).

Table 1. Most common sustainable development indicators, according to policy-based approach

RANK	THEMES	NUMBER OF INDICATORS SETS WHERE FOUND
1	Management of natural resources	24
2	Climate change and energy	21
3	Sustainable consumption and production	20
4	Public health	19
5	Social inclusion	19
6	Education	19
7	Socio-economic development	18
8	Transport	16
9	Good governance	16
10	Global dimension of sustainable development	16
11	Research and Development, Innovation	15

Source: UN, 2007

Moreover, European Commission (EC) developed so-called pyramidal structure of indicators, according to their themes and sub-themes of the European Union Sustainable Development Strategy (EUSDS). Starting from 2001, EC has defined set of 155 indicators related to sustainable development. Those indicators are divided into sub-themes whereas energy efficiency (renewable energy) and climate change represent one of the listed sub-indicators that are important for sustainable development.

Table 2: Strengths and weaknesses of capital and policy based approach

STRENTGHS	
Capital-based approach	**Policy-based approach**
• Well defined conceptual framework for defining and analyzing key indicators on sustainable development • Broad sets of indicators that are covering the most important sustainable development issues • Consistency of key sustainable development indicators – no significant changes over time • Closely related to main national financial indicators	• Directly addressed to national strategies, polices and frameworks in sustainable development • Based on close interaction with the key stakeholders in sustainable development • Indicators simple to understand • Well-prepared for new themes/issues in area of sustainable development
WEAKNESSES	
• Closely tightened to theoretical concepts which as a consequence have lack of shift between theory and practice • Lack of short-term dimension on sustainable development • Limitations in long-term dimensions on sustainable development • Complexity of usage • Economic character of framework itself	• Not completely relying on predefined frameworks • Difficulties to rationalize correlations with sustainable development • Single indicator is covering wide range of sub-indicators • Can change together with changes in sustainable development policies

Source: UN, 2007

It seems that there are difficulties in setting right set of measures related to social sustainability because some of them cannot be quantified so social sustainability indicators are facing lack of appropriate measures that will provide quantifiable results.

According to analysis there's still no unique methodology and approach that will provide set of indicators in area of sustainable development. However, there are different methods used in order to define key indicators. Considering existence of three different approaches: NSSD, capital and policy based approach and their key specifics author took into consideration the latest, policy-based approach which was recognized as the most appropriate knowing key national specifics in sustainable development.

SUSTAINABLE DEVELOPMENT IN MONTENEGRO (Case study)

ABOUT MONTENEGRO

Montenegro represents a young South East European country that was part of Ex-Yugoslavia in 1980s and which became independent in 2006. From that time onwards Montenegro represents politically and economically stable country with great investment potential. Continuing economic reforms put Montenegro as a leader in the region, with 25% FDI share in GDP (MIPA, 2010). Starting from the period of its independence in 2006 Montenegro has faced structural and institutional changes which provided a new level of economic development. Montenegro became a destination that is attractive for FDI and became a platform for business and economic development in the future. With population of 625,266 inhabitants situated in three regions (south, central and north), with more than 80% of privatized former state companies and euro as official currency Montenegro became 'the business platform of the Western Balkans' (MIPA, 2010). Strategically devoted to economic development on the principles of sustainable development Montenegro improved its position on a global scene. Namely, according to the World Economic Forum Montenegro became a leading country in the region. Because of its position as one of Mediterranean countries in South-Eastern Europe Montenegro is currently experiencing process of EU integration. This fact is very important for process of further sustainable development and harmonization with key EU strategies and goals in that field.

MONTENEGRO TOWARDS SUSTAINABLE DEVELOPMENT

In the last two decades Montenegro adopted set of strategies; declarations and policies of sustainable development, energy efficiency and environmental protection. In 1990s Parliament of Montenegro signed a Declaration on Ecological State of Montenegro which represented a foundation and dedication to long-term vision of Montenegro as an ecological state based on the principles of sustainability. Institutions that are supporting the idea of sustainable development are established from 2002. Implementation of current legislation and strategies started from 2005 and after Montenegro became independent.After 2006 Montenegro revised its strategic priorities and in 2007 Government of Montenegro adopted National Strategy on Sustainable Development (NSSD) which is a key strategic document addressed to the concept of sustainable development. It contains specific Action plans (2007-2012) and methodologies that are planned to be a basis for monitoring of sustainable development in the future.

Considering the fact that European integrations represent a key strategic goal, all documents and strategies are harmonized with EU criteria. Moreover, a key goal for the future is to develop country on the basis of three pillars of sustainable development: economic, social and environmental.Nevertheless key strategic

documents in area of sustainable development are adopted there's still lack of quantitative methods and indicators that are going to bring objective overview on key issues related to sustainable development.

Key goals for the future development of Montenegro based on the concept of sustainable development can be defined as short-term, mid-term and long-term (Zivkovic, 2010).They can be summarized through:

- Full implementation of the goals given in NSSD as well as revision of the current Action plan. Considering that, it is important to add sub-categories such as: sustainable consumption, stimulation of investments in renewable energy resources and equality between the regions.
- Improvements of exsiting principles as well as implementation of existing goals given in the NSSD.
- Better financial support for the projects in area of sustainable development.
- Better involvement of government authorities, municipalities, civil society in the wholeprocess.

It can be noted that even though Montenegrin NSSD has defined key areas and indicators that need to be monitored in the future, country is still facing with lack of insight into public awareness on key principles and indicators related to sustainable development.

Table 3. SWOT analysis on current state of sustainable development in Montenegro

STRENGTHS	WEAKNESSES
• Ratification of the key international conventions and agreements • Harmonization of the key national strategies according to EU rules • Long-term strategic orientation towards principles of sustainable development	• Lack of administrative and technical capacities on national level • Lack of predefined responsibilities in sustainable development monitoring • Lack of implementation of the key documents • Lack of waste management and infrastructure on national level
OPPORTUNITIES	**THREATS**
• Participation in EU funds for sustainable development (FP7) • Increased activities in promotion of the brand 'Made in Montenegro'	• Efficient implementation of the key strategies • Regional differences regarding level of sustainable development • Global economic and financial crisis and increased poverty as a result • Lack of financial support for projects in area of sustainable development (0.15% GDP in 2010)

ENERGY SECTOR IN MONTENEGRO

The energy sector represents one of the key important sectors recognized as a part of sustainable development. It is important for sustainable development on the basis of two aspects: production and consumption. Moreover, energy use and energy efficiency are important from the aspect of their impact on environment (NSSD, 2007). Current situation on the field of energy shows that energy market is still closed, with one energy supplier. Additionally, Montenegro is faced with the constant energy deficit and is importing 35% of energy. On the other hand, Montenegro has waste resources for renewable energy, such as wind and solar energy as well as small hydro-power plants. ccording to presented, key strategic goals according to NSSD are addressed to:

- Rationality in energy use and improving energy efficiency;
- Reductions in energy imports.

Energy sector is defined in Energy Efficiency Strategy (EES) which contains Action plans in energy sector by the end of 2025. Even all important documents and strategies are adopted; they need to be fully-implemented in the future. This is very important in case of: better usage of renewable energy, better energy efficiency programs, implementation of combined transport and overall change of paradigm related to the future vision of development (Zivkovic, 2010).

QUANTITATIVE RESEARCH ON SUSTAINABLE DEVELOPMENT IN MONTENEGRO

RESEARCH ASSUMPTIONS

According to previously presented theoretical background and according to the policy based approach, research assumption will follow the results obtained from public survey research.Additionally, three additional assumpions are added:

- Sustainable development is a key long-term strategic orientation of Montenegro;
- Public opinion survey on sustainable development can help policy makers in their futuredecisions related to the sustainable development in Montenegro;
- Lack of data about perception on sustainable development represents is a barrier for itsfurther implementation and development.

A SURVEY METHODOLOGY

Primary research and research questionnaire was following Eurobarometer survey methodology. According to Pharr, ‘Eurobarometer surveys are the products of a unique program of cross- national and cross-temporal social science research’

(Pharr, 2000).There are different reasons why Eurobarometer public survey methodology is used for the purposes of the primary research:

1. Eurobarometer surveys represent the greatest cross-national data collection in EU;
2. Eurobarometer surveys are providing the best comparative data on EU level and betweenthe accession countries;
3. Eurobarometer is closely related to European Commission sets of standards;
4. Eurobarometer surveys are methodologically unified and approved in the academiccommunity;
5. Eurobarometer surveys have long history of data in different areas of economy;
6. Questionnaire for energy and ecology contains internationally accepted indicators ofsustainable development.

On the other hand, it was taken into consideration key Montenegrin country specifics related to such survey:

1. Montenegrin position as EU candidate;
2. Long-term strategic orientation towards sustainable development based on energyefficiency and ecology;
3. Lack of historical data on sustainable development indicators related to energy andecology;
4. Lack of public opinion surveys in area of sustainable development.
5. Opportunity to conduct comparative analysis with other countries from the region and EUcountries (EU27);

Taking into consideration capacity challenges to conduct survey based on stratified random sample, author decided to conduct the survey based on quota sampling. According to de Vaus, quota sampling is based on sample selection of predefined criteria and is, among all other non- random sampling methods, the most appropriate for general surveys (Petrick, 2006).

There are two predefined criterias:

Criteria 1: Specific target group is based in the central part of Montenegro-municipality of Podgorica (the most significant and economically developed region)

Criteria 2: Respondents need to be more than 15 years old (in line with Eurobarometer methodology)

For the purposes of the survey author used an online (e-mail survey). The main purpose of the online survey, according to Tull's academic works is 'systematic gathering of information from respondents for the purpose of understanding and/or predicting some aspect of the behaviour of the population of interest'. Author took into consideration Petrick's main advantages and disadvantages of online surveys. Main advantages are defined with: speed, low costs, wide sample and high level of reliability that was important for the survey knowing the fact that it was conducted in the middle of the summer season where there was a risk of high level of non-responses. One of recognized disadvantages was that in all cases Internet connection was the first precondition to distribute the questionnaire (Petrick, 2006). An online survey was conducted in August 2011.

KEY FINDINGS

The main goal of the survey was to focus on population and get insight into citizens' perception on sustainable development. Based on the structure previously presented, the questionnaire was divided into two sections: energy and ecology. The key question was to find out to what extent Montenegrin citizens are informed about these issues. According to analysis it can be noted that citizens of Montenegro are not completely aware on two pillars of sustainable development, such as energy and environmental protection. However there are slight differences in their level of knowledge and information regarding two issues. Even if they are more informed about environmental issues, they are less concerned about it then to energy issues such as energy savings. On the other hand, they have perception that Government of Montenegro should be fully in charge for renewable energy development, whilst in case of environmental protection they believe that Government and EU institutions should equally participate in environmental protection of Montenegro.

Summary on Energy

On the basis of the key findings gathered from the survey 52.7% of respondents think that they don't have enough information and knowledge about renewable energy development in Montenegro. Montenegrin citizens have limited information about energy savings and possibilities to develop alternative ways of energy in Montenegro. On the other hand, they consider that public authorities should provide more information about these issues in order to introduce citizens with alternative energy production as well as their benefits from renewable sources of energy.Considering the fact that Montenegrin energy market is still closed with just one electricity supplier it was interesting to find out which opinion citizens have. The majority of respondents (80.9%) replied that citizens should have a range of different energy suppliers.

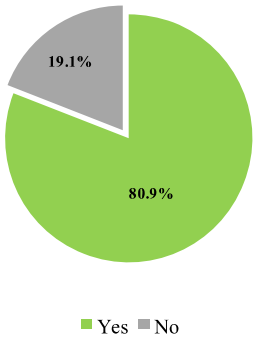

Figure 5. Do you think that is important to have a choice of electricity suppliers

The main reason behind such statement is the fact that they want energy supplier that will provide 'cleaner' energy (66.1%), while second reason is the price. It is interesting to note that quite high percentage of respondents are willing to pay more for energy produced from renewable sources (42.7%) which can be a positive signal to the Government in relation to future policies related to renewable energy.

In order to help citizens to reduce their energy consumption 40.9% respondents think that public authorities should provide more information on efficient use of energy; 33.6% has opinion that Government should develop tax incentives in order to promote efficient use of energy; 20% has opinion that higher efficiency standards in energy consumption should be introduced.

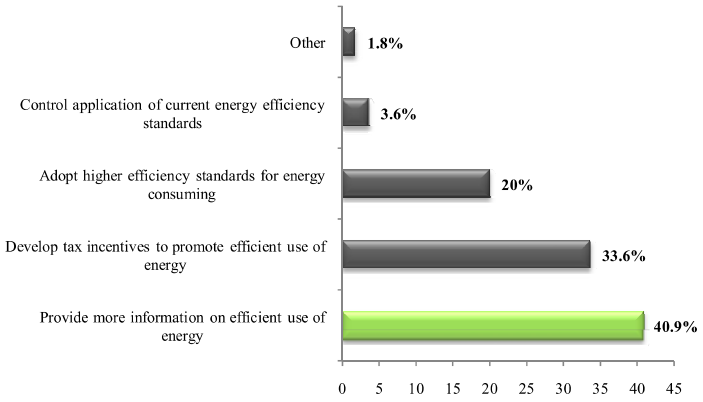

Figure 6. What should be the public authorities' priority to help people to reduce their consumption of energy?

From the total number of respondents in the sample, majority has opinion that they will need to change their habits in energy consumption within next ten years, as a consequence of global warming.Namely, 47.2% is planning to install equipment that will save their energy, 27.8% is going to change their habits in energy consumption, while 25% has opinion that they will pay more for energy they use in the future.

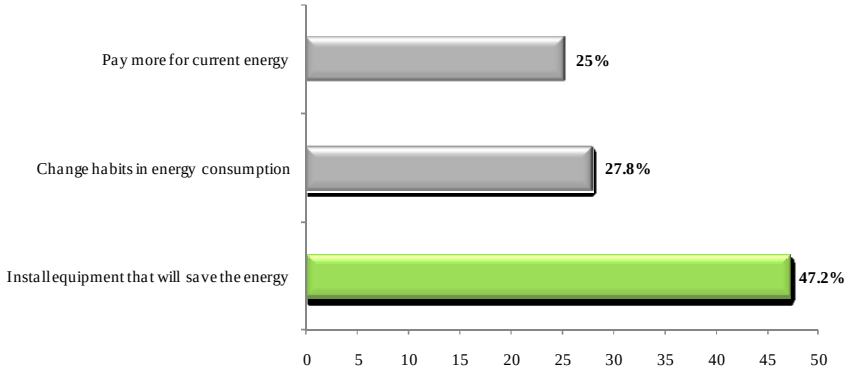

Figure 7. Which effect will global warming have on your energy consumption within next ten years?

Government of Montenegro is recognized as responsible for future development and promotion of renewable energy.

Table 5. Future role of the Government regarding energy issues

STATEMENT	PERCENTAGE OF RESPONDENTS
Government of Montenegro needs to be in charge for **promotion** of renewable energy in Montenegro	44.2%
Decisions related to the new energy challenges need to be taken on the national level	50%
Government need to provide **more information for citizens** which will introduce ways of using more efficient energy	38.5%
In order to support development of new and clear energy technologies and products Government should introduce **tax incentives** in that field	51.9%
Government should focus on development of **small hydropower plants and solar power** in the future	77.1% and 59.6%, respectively

SUMMARY ON ENVIRONMENTAL ISSUES

Economic development and environmental protection are equally important for overall development of Montenegro which is in line with future strategic vision of general development in Montenegro. Water and air pollution are recognized as the most important environmental issues that are worrying Montenegrin citizens.

According to the survey, citizens are fairly well informed about environmental issues, but level of knowledge and information needs to be improved over time. They still range environmental issues at the last place, after economic and social issues that are influencing their quality of life. Majority of respondents (65.1%) is fairly well informed about environmental issues, while 21.1% states that they are fairly badly informed on these issues.

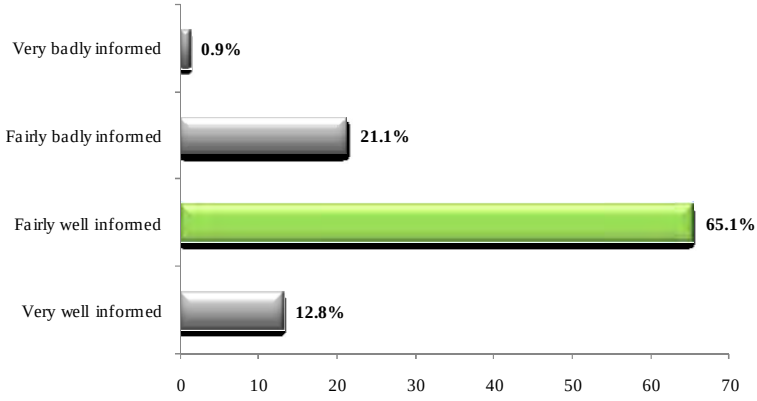

Figure 8. In general, how informed do you feel about environmental issues?

Nevertheless citizens of Montenegro are at some point aware of key environmental issues, they are still not involved in processes such as waste recycling and they have a need for better waste management services in the future.

In a contrary to energy issues citizens of Montenegro believe that Government and EU institutions should be equally in charge for environmental protection in the future. On the other hand they mostly trust to environmental protection associations, international organizations and European Union regarding environmental issues. This can be explained with the fact that even though Montenegro introduced important documents and strategies in area of sustainable development, they are relying on EU standards and practices.

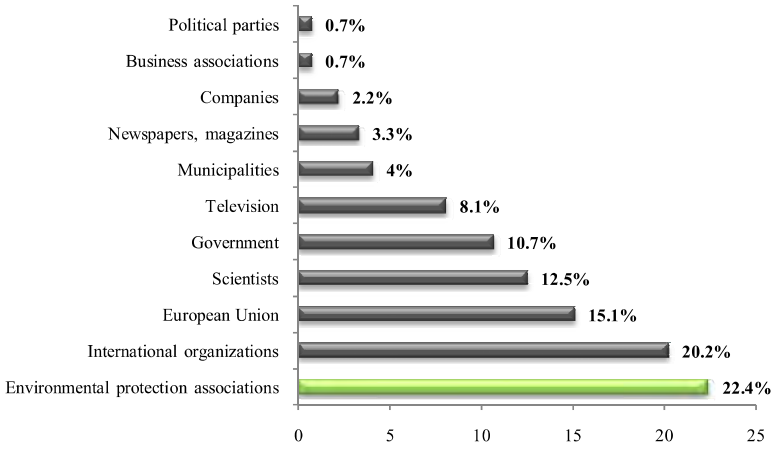

Figure 9. Who do you trust most when it comes to environmental issues?

Majority of respondents (69.1%) stated that both sides (Government of Montenegro and European Union) should be in charge for environmental protection in the future. However, there are 27.3% respondents who have opinion that Government of Montenegro should be fully responsible for environmental protection.

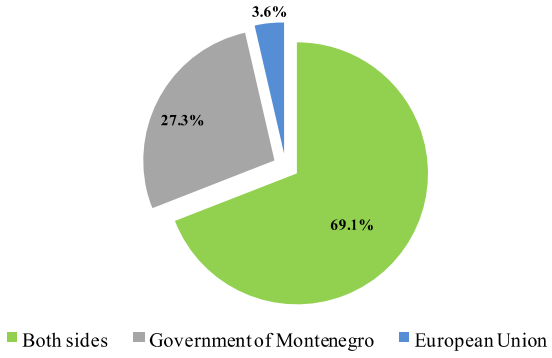

Figure 10. When it comes to protecting the environment who do you think should be in charge for that?

Among the suggestions in order to find better and more efficient ways to improve environment in the future, 46.2% of respondents think that public authorities should implement higher penalties for those who are not protecting the environment, while 26.7% think that improved legislation in that area will bring results.

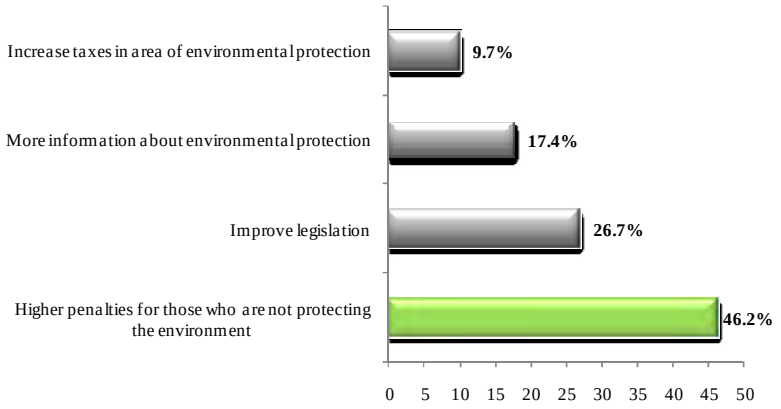

Figure 11. What will be the most efficient way to improve environment in the future?

CONCLUSIONS

According to main results it can be noted that citizens are more informed about environmental than energy issues. However, perception about key responsibilities in area of energy and environment are different. While the Government of Montenegro is recognized as a key responsible institution for further development of energy sector, in the case of environmental protection EU and the Government should be equally responsible.

On the basis of key conclusions and national strategic orientation towards sustainable development it can be noted that business project can justify its basic presumptions addressed to the importance of information for policy makers in order to set up and improve strategies in area of sustainable development in Montenegro.

Key recommendations on the basis of quantitative reasearch and public attitude are addressed to:

- More information on energy efficiency and sustainability;
- Opening the energy market and providing more energy suppliers to the final users;
- Focusing on development of renewables-solar power solutions in the future;
- Develop preconditions for recycling;
- Better waste management on national level.

REFERENCES

[1] Atkinson, G. & Dietz, S., 2007. Handbook on sustainable development. Edward Elgar Publishing Limited

[2] Babbie, E. 2010. The practice of social research. 2nd ed. Wadsworth Cengage Learning

[3] Baker, S., 2002. The politics of sustainable development. 2nd ed. Routledge

[4] Bell, J., 2005. Doing your research project. 4th ed. Open University Press

[5] Berke, P. 2002. Does sustainable development offer a new direction for planning? Challenges for the twenty first century. [Online Accessed 20 May 2013].

[6] Campbel, S. 1996. Green cities, growing cities just cities? [Online] Available at:

[7] Dincer, I. & Rosen, M., 2007. Exergy: Energy, environment and sustainable development. 1st ed. Elsevier Ltd.

[8] Pickard, R. & Cousin A. & Coussy, B., 2008. Sustainable development strategies in Europe.Council of Europe

[9] Rao, P., 2000. Sustainable development: economics and policy. 1st ed. Blackwell Publishers Ltd.

[10] Twider, J. and Weir, A. (1986). Renewable energy resources. [Online] Available at:http://heb.renewable-energy-eilat.org/wp-content/uploads/2011/01/youth-competition-2.pdf

[11] Zivkovic, Lj. & Vukovic, B., 2010. Montenegro in XXI century. Montenegrin Academy of Science and Arts

[12] Eurobarometer 365, 2011. Attitudes of European citizens towards the environment. [Online] Available at: ec.europa.eu/environment/pdf/EB_summary_EB752.pdf

[13] Eurobarometer 75.2, 2011. Attitudes of European citizens towards the environment. [Online] Available at: http://ec.europa.eu/public_opinion/archives/ebs/ebs_365_fact_eu27_en.pdf

[14] European Commission, 2003. European common indicators: towards a local sustainability profile. [Online] Available at: ec.europa.eu/environment/urban/pdf/local_sustainability_en.pdf

[15] European Commission, 2005. Measuring progress towards a more sustainable Europe. [Online] Available at: http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-68-05- 551/EN/KS-68-05-551-EN.PDF

[16] European Commission, 2011. Renewable energy, [Online] Available at: http://ec.europa.eu/energy/renewables/index_en.htm

[17] European Commission, 2007. Progress report on the sustainable development strategy. [Online] Available at: ec.europa.eu/sustainable/docs/com_2007_642_en.pdf

[18] Eurostat, 2009. Sustainable development in the European Union. [Online] Available at: http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-78-09-865/EN/KS-78-09-865- EN.PDF

[19] Flash Eurobarometer 316, 2011. Attitudes of Europeans towards resource efficiency. [Online] Available at: http://ec.europa.eu/public_opinion/flash/fl_316_en.pdf

[20] Flash Eurobarometer 206a, 2007. Attitudes on issues related to EU Energy Policy. [Online] Available at: http://ec.europa.eu/public_opinion/flash/fl206a_en.pdf

[21] Government of Montenegro, 2011. Waste Management Plan 2008-2012. [Online] Available at:http://www.procon.me/pfiles/file/Plan%20upravljanja%20otpadom%20u%20CG%20od% 202008-2012.pdf

[22] IUCN, 1980. World conservation strategy. [Online] Available at: http://data.iucn.org/dbtw- wpd/edocs/WCS-004.pdf

[23] IUCN, 2006. The future of sustainability. [Online] Available at: http://cmsdata.iucn.org/downloads/iucn_future_of_sustanability.pdf

[24] Ministry of Economy, 2011. Enegy Efficiency Strategy, [Online] Available at: http://www.energetska-efikasnost.me/dokumenti.php?id=1&l=en

[25] Ministry of Economy, 2011. Energy development strategy of Montenegro by 2025. [Online] Available at: www.gov.me/files/1184765960.pdf

[26] Ministry of Economy, 2011. Energy development strategy of Montenegro by 2025. [Online] Available at: www.gov.me/files/1184765960.pdf

[27] Ministry of sustainable development and tourism, 2011. National strategy of sustainable development in Montenegro. [Online] Available at: http://www.uncsd2012.org/rio20/content/documents/Montenegro_National%20Strategy%20 of%20Sustainable%20Development%20of%20Montenegro.pdf

[28] MIPA, 2011. 111 reasons to invest in Montenegro. [Online] Available at: http://www.mipa.co.me/userfiles/file/MIPA%2011%20reasons.pdf

[29] Murphy, J. 2000. Ecological modernization. [Online] Available at: http://www.uio.no/studier/emner/annet/sum/SUM1000/h08/Murphy.pdf

[30] OECD, 2002. Towards sustainable development: Indicators to measure progress. OECD

[31] OECD, 2005. Measuring sustainable development. [Online] Available at:

[32] UNEP, 2006. Global trends in sustainable energy investments. United Nations Environment Program and New Energy Finance Ltd.

[33] UN, 2007. Indicators of sustainable development. 3rd ed. United Nations Publication

[34] UN, 2008. Measuring sustainable development. [Online] Available at:

[35] WEC, 2011. Energy efficiency policies around the world: review and evaluation. [Online Available at: http://www.worldenergy.org/publications/energy_efficiency_policies_around_the_world_rev iew_and_evaluation/1_introduction/1175.asp

[36] http://www.cnr.uidaho.edu/css385/Readings/Campbell%20Green%20Cities.pdf

[37] http://www.oecd.org/dataoecd/60/41/35407580.pdf

[38] http://www.oecd.org/dataoecd/30/20/41414440.pdf

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PART TWO

RURAL TOURISM AND ECOTOURISM

STRATEGIC DEVELOPMENT AND PROMOTION GUIDELINES OF HEALTH AND ECOTOURISM IN SERBIA

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Abstract: The territory of the Republic of Serbia represents one of the most exquisite world's areas rich in thermo-mineral waters, mountain ranges and rare vegetation. All of these elements establish the basis for the development of health and ecotourism, deserving our full attention, considering the fact that the potential resources are not being utilized adequately.

The goal of the paper is to depict the perspective of Serbia's strategic health and ecotourism development and promotion, as well as strive to define the possible advantages in comparison with other relevant touristic destinations.

Furthermore, the paper aims to demonstrate the popularity of health and ecotourism products through a well-defined vision, strategy objectives, measures, projects, and priority goals, including the identification of the most efficient promotion methods applicable to both domestic and global markets.

Key words: Health Tourism, Ecotourism, Development, Promotion, Strategic Guidelines

JEL classification: Q00, Q56, Q57

UDC 338.48-6:502/504(497.11); 338.48-6:615.8(497.11)

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INTRODUCTION

Along with the development of tourism and its structure, tourism enterprises have been increasingly emphasizing the strategic approach towards relevant market segments and particular types of the offer. The development was modeled in the direction of the creation of attractive tourist destinations with growth and promotion potential.

The tasks of the strategic approach and management include much broader field of action than finding or creating new markets. Therefore, it is necessary to ensure continuous resources supply and constant services output in order to emphasize numerous attractive destinations. The expected results of the strategic approach are achieving increased competitiveness of Serbian tourism, increase in foreign exchange earnings, domestic tourist traffic, as well as employment rates growth through tourism, with the goal to transform the Republic of Serbia into a competitive tourist destination (Strategy of the Republic of Serbia).

In line with the stated strategy, the paper focuses on health and ecotourism, which together represent a specific market product and are also a part of the wider concept of sustainable tourism.

Health and ecotourism can be defined as a responsible journey to natural areas which preserves the environment, cultural values and supports the health and well-being of tourists. In fact, health tourism implies a type of tourism activities where professional and controlled use of natural healing elements, physical medicine procedures and planned physical activity for maintaining and improving physical, psychological and / or spiritual health of visitors and overall life quality, plays an important role (Kunst & Tomljenovic, 2011, pp. 5-7).

On the other hand, ecotourism is a type of tourism industry which offers tourists education and entertainment in the nature, but at the same time motivates them to a deeper understanding of the importance of preserving natural and cultural resources. According to the research *"Flash Eurobarometer"*[60] (research on the attitudes of European tourists towards tourism) in 2009, the nature has become the most important factor in choosing a vacation destination to European population (Zivkovic, 2010). The very purpose of the research was focused on the collection of detailed information regarding travel and vacation plans in 2009, while according to the latest research from 2012, ecotourism is growing three times faster than conventional mass tourism and is expected to have more than 20% European tourism market share over the next 20 years (Zivkovic, 2010).

Thus, these selective types of tourism represent a development opportunity for the promotion of tourism in the Republic of Serbia. Well-preserved nature is one of the fundamental and competitive advantages of Serbian tourism development, while a variety of natural and health tourism resources become an additional

[60] *"Flash Eurobarometer" was presented by the European Commission in 1990 as an instrument for data collection and analysis. European international research regarding the attitudes, values and beliefs related to socio-cultural and socio-political issues.*

argument for holding the development of health and ecotourism as an important tool for sustainable tourism development and consistent and long-term approach to sustainability.

From the viewpoint of health and ecotourism, particularly interesting resources are biosphere resources (water, air, flora, fauna, etc.), then sunlight and solar heat (Rikalovic, 1999, pp. 31-32). Protected areas, sources of mineral, thermo-mineral and thermal waters represent the basis for the development of health and ecotourism as a niche market of Serbian tourism (so far 418 natural areas have been protected - 5 national parks, 19 nature parks, 9 outstanding landscapes, 71 nature reservations; 322 natural monuments and 45 natural areas with historical and cultural characteristics. Moreover, on various grounds, 215 plant species and 427 animal species have been out under protection). Physical characteristics of these sources indicate that the waters are mostly clear, colorless, odor-free and tasteless, with temperatures ranging from 26-60 ° C, and can be classified as hypo-, homeo- and hyper-thermal waters (Protic, 1995).

In quality management of eco-services special attention should be given to health and ecotourism strategy, which includes shaping, management and development of potential enterprises and organizations dedicated to a healthy environment. The strategy should focus on the activities of interaction with the environment, which should be treated responsibly in decision-making processes in all business activities (Muller, 2000, pp. 147-148). In this context, in order to protect preserved and healthy natural environment, it is necessary to provide a range of useful activities which are already being implemented in modern societies, minimizing conflicts that may arise from economic outlooks and ecological requirements of businesses (Cosic, 2007, pp. 223 -224).

It is a known fact that the world is increasingly turning to healthy lifestyle and spending holidays in clean, unpolluted environment with healthy food and fresh air. Many areas in Serbia have already gained an enviable health and ecotourism reputation. Indeed, by adopting the concept of sustainable development and management of ecotourism, and therefore health tourism, and using the experience of other countries, it can be contributed to proper positioning of Serbia as a desirable tourist destination on the international market, which should add to the development of tourism and at the same time provide greater inflow of foreign tourists and foreign currencies.

Due to the large number of attractive natural and anthropogenic tourist resources, the Republic of Serbia has a good basis for faster health and ecotourism development, and thus for a more versatile economic development as a whole, bearing in mind that tourism is complementary to many other industries (agriculture, trade, transport, etc.).

Strategic perspective of health and ecotourism development and promotion in Serbia defines the validation of those potentials with the competitive advantages in compared to other destinations, which may generate the most popular tourism product and thus identify the most effective way of creation and promotion such health and ecotourism product that should initiate market expansion.

For strategic planning of health and ecotourism, it is first necessary to coordinate with the theoretical part of the project concerning the usage of the methodological approaches in the development process. It should be emphasized that the phases of strategic planning process (e.g. collection and analyses of socio-economic data) that affected the level of detailed approach to the strategic plan creation, especially in the operational area, were omitted. However, this situation was overcame by research and input information collection from available official sources.

OPERATIONAL DEFINITION OF THE RESEARCH PROBLEM

In contrast to high contamination areas, there are spaces ideal place for practicing people's recreational needs, including health and eco-tourist areas which have significant health and recreational features that attract attention and generate great interest in tourism demand (Jovicic, 2008, pp. 3-5).

Attractiveness is often the determining factor when deciding on travel options. Existence of natural and anthropogenic elements has influenced the fact that particular destinations begin to attract tourists (Ceron, 2002, pp. 142-143).

Health and ecotourism in Serbia develop and improves procedures of marketing presentation and advertising, which should present the Republic of Serbia as a typical ecological, wellness, conference, sport industry source, as well as create a modern tourism offer with regard to the preservation of the natural attractiveness. Thereby, the first step should be directed to centralize the decision-making process on all issues related to health and ecotourism (Group of authors, 2005).

The concept of eco and health tourism destination is relatively new, and there are no specific guidelines for their development and promotion, where planning and management of the destination itself need to point out the benefits of health and ecotourism in a particular area and the local community.

Planning the creation of health and ecotourism destination depends on social and environmental factors, space planning, regulations preventing disruption of sensitive ecosystems, community participation in the process of developing a set of standards and long-term monitoring.

The promotional slogan "unity of diversity and diversity in unity" should be the starting point of the promotional strategy of health and ecotourism, as its mission is being achieved through the strategy of action, values and standards of good work, including an integrated system of quality management, as well as their partners – carriers of the tourism offer (Bakic, 2003, pp. 268-273).

Health and ecotourism should represent a set of specific long-term objectives in terms of rapid work program development and with the goal to satisfy services' users and guests. To be the first, the best in terms of quality of work constantly

over time – it is the basic definition of the development of health and ecotourism in Serbia (Stankovic, 2002).

The promotion of health and ecotourism destinations, quality of service, friendliness of tourism accommodation staff, etc. are the efforts that should be made in the coming years in order to make health and ecotourism an element tourists lack and enable them richer and better life. With their professional engagement, employees should strive to ensure the realization of synergy between public and private sectors, ensuring sustainable tourism to present and future generations (Group of authors, 2002).

Operational research of health and ecotourism should be based primarily on a marketing presentation of the tourism offer in the country and abroad. Promotion and advertising offer of health and ecotourism destination in the country and abroad is based on the following elements:

- Improvement of conditions for tourists' arrival and stay;
- Training and education of staff in health and ecotourism;
- Business professionalism.

Only by improving material conditions, educating employees, professional attitude and recognizing the needs of guests, it is possible to provide satisfaction to their demands and requirements.

The motive of operational research on health and ecotourism is based solely on work process' quality. In order to set this very quality and enable continuous improvement of its efficiency, it is necessary to establish process identification, its documentation, implementation and constant maintenance.

Aiming at identifying the processes necessary for system's functioning, it is essential to train employees on workflow, procedures' and work instructions' development. Within each documented process it is crucial to clearly define measurable criteria that will enable effective documents usage.

To ensure smooth functioning of the operational research system, top management needs to have defined responsibilities, measures for continuous effectiveness improvement, as well as user requirements coming from to all tourism organizations.

Besides implementation, maintenance and continuous improvement of work processes, it is also necessary to define the obligations and tasks related to providing human resources, infrastructure and work environment. With the aim of health and ecotourism well-functioning, along with the operational research, responsibilities of each person responsible for the implementation of every process involved are clearly defined. Persons in charge are obligated to provide the necessary resources to ensure the smooth flow of business improvement (Group of authors, 2002).

Continuous education is provided for employees who perform activities that have an impact on the improvement of the business, especially in the part of health and ecotourism presentation and promotion.

In order to provide continuous high level of services and customer satisfaction, it is crucial that health and ecotourism organizations have defined procedures for services planning, implementation and requests review.

Work procedures, verification, validation, monitoring, controlling and testing procedures need to be defined by strategic planning of Serbian health and ecotourism development through operational research. What is also important to the process of planning and presentation of health and ecotourism and ecological production is:

- Multimedia presentations, which represent advertising and sharing interviews for the overall tourism destination;
- Applications and preparations for fair presentations;
- Education – round tables. (Popovic-Bajcetic, 2012, pp. 12-14)

For defining the problem of operational research, it is obligatory to ensure consistent implementation of defined procedures, results analysis and continuous improvement of business processes with the approval of authorized personnel.

All activities necessary for the establishment, maintenance and improving the system are regulated by defined process. Based on the information from external and internal environment, it is necessary to process data in order to have clear business indicators of health and ecotourism organizations.

Based on the report submitted by the representatives of the management of health and ecotourism organizations, the factor that is being evaluated is efficiency of the system, based on which the rest of the indicators are calculated, such as: preparation of the annual business plan, business performance data analysis for the previous, as well as plans for the future periods.

Within data analysis, quality plan and performance plan have a significant role. Quality plan contains all of the control points within identified and prescribed operating procedures. Performance plan includes types of reports, frequency reporting, based on which system's efficiency is being analyzed.

In accordance with established objectives from obtained data, periodical reviews of system's efficiency are being conducted. The elements of the system achieve the main goals when operating on the principle of synergy (Dulcic, 2001, pp. 111-113). To ensure taking measures for inconsistency causes handling, preventing their recurrence and remove the causes of potential non-compliance, it is necessary to implement preventive and corrective measures in line with internal goals of health and ecotourism organizations.

OBJECTIVES AND TASKS OF HEALTH AND ECOTOURISM DEVELOPMENT AND PROMOTION

This concept's objectives are in fact based on providing reference for health and ecotourism development and promotion, but it is impossible without the unique presence of thermal waters in certain areas of Serbia and also without preserved environment. Due to this fact, the Republic of Serbia can become the first (the most significant) European destination for health and ecotourism. Moreover, different types of services, as well as research and development should be included. Within the supplementary activities, it is necessary to produce such special agricultural, cosmetic and other products, which can be rightfully included in the thermal program.

In accordance with the main objectives of the European Union, that is to improve life-standard, guests and visitors should be offered such services, devices and technologies which enable life extension and improvement in a healthy environment. All this should be done in a hospitable manner with professional staff, because Serbian technology is not among the best in the world, there is a small number of innovations in this field, and for that reason, the development of tourism in our country should be directed towards health and ecotourism, primarily due to natural resources for their development.

The essential question is how and in which manner to develop a tourism area, and what kind of strategies should be used, keeping the development away from colliding with other industries, and if there already are some dissonant objectives (either at micro or macro level), to mitigate or reconcile the opposites (Foster, 1985, pp. 172-173).

Finding the uniqueness of a region, establishment of a special appearance, linking businesses involved in this very industry into the industrial health and ecological cluster is the ultimate goal of health and ecotourism, while strengthening, improving and building cooperation and communication (existing and yet non-existent) among mentioned elements is the main task of the study.

The essence of health and ecotourism development is levels approximation (layered approach), i.e. horizontal and vertical integration of industry levels in order to achieve a clearly defined goal.

Challenges of health and ecotourism development in the Republic of Serbia are:

- Diversification and enhancement of health and ecotourism offer by stronger development and promotion;
- defining of health and ecotourism brands in key areas;
- usage of a municipality's geographical position for efficient operations;
- improvement of the cooperation with neighboring municipal / regional health and ecotourism markets;
- finalization of privatization processes of tourist facilities

- to ensure balanced development of health sector and ecotourism throughout Serbia;
- increase of the sales of health and ecotourism products and services in the conditions of strong of competition;
- Connections with various key sectors of tourism in Serbia, for e.g. hunting and fishing, winter, summer, adventure sports, hiking, etc.;
- improvement and intensification of Serbian health and ecotourism promotion at regional and national level and international markets;
- advancement of tourism entrepreneurship;
- access to donor support for health and ecotourism and regular usage of the resources;
- education of the population about the importance of health and ecotourism development;
- creation of health and ecotourism offer based on multi-ethnic and multi-cultural content as a way to strengthen the integration processes;
- development of health and ecotourism projects with partners outside of Serbia. (Popovic-Bajcetic, 2012, pp. 17-18)

It is known that a large number of natural resources, favorable climate, geological and hydro resources and a rich cultural and historical legacy make a good base for sustainable development of health and ecotourism activities. The analysis of their development and promotion capacities in Serbia points out to several priority areas. Focusing on the strategic plan is necessary for acquiring human, financial and other inputs of the main factors whose timely and adequate guidance in the right direction can show results.

Since health and ecotourism was not significantly represented in the overall economic structure of Serbia in the past, the most intense activities should be directed to strengthening of human resources and institutional capacities, which will enable the diversification of health and ecotourism offer in Serbia, its strong promotion and total transformation of the economic structure by increasing the share of tourism in total GDP of Serbia.

By doing so, the Republic of Serbia must, besides continual involvement in developments in the field of health and ecotourism, follow the latest trends in Western Balkans and South-Eastern Europe, because Serbia represents a small tourism market. The country must first attract domestic tourists, then focus on the Diaspora and finally on foreign tourists. This includes the use of existing resources and favorable geographical position in the development and marketing aspect of health and ecotourism products and services in the same domain. Awareness of environmental protection and the need to prevent uncontrolled exploitation of natural resources must also be improved.

Development of health and ecotourism will contribute to the overall economic growth, while the strategic development plan should focus on numerous visible and less visible possibilities of creating new jobs in all sectors.

In addition, it should add up to the fact that, thanks to the development of health and ecotourism, the infrastructure is being renewed, reconstruction and protection of cultural and historical values and industrial heritage is an ongoing process, there are significant improvements in the area of environmental protection and conservation of natural resources and the improvement of life-standard of citizens as a whole.

STRATEGIC LEVEL GUIDELINES AND HEALTH AND ECOTOURISM PROMOTION

The emphasis should be put on the fact that the Republic has a vital role in development and promotion of health and ecotourism, although their role is complex and must be defined through mutual efforts of different actors. The World Tourism Organization (WTO) and the United Nations Environment Program (UNEP) have recommended governments, within the International Year of Eco-tourism in 2002, to establish, strengthen and spread national strategy and specific programs for sustainable development and management of health and ecotourism. It was also recommended that the countries themselves should provide technical, financial and promotional support and properly facilitate establishment and cooperation between small and medium-sized enterprises in the field of health and ecotourism.

Several countries have adopted specific health and ecotourism development and promotional strategies. These plans strongly focus on the development of the appropriate tourism infrastructure and the ability to foster tourism in natural areas with a high level of commitment to rural population, making them the classic examples of ecotourism planning.

Some common strategies related to product manipulation can be the following:

1. products promotion among tourists, offer enhancement, extension of the average length of stay, improving the positive experience that can be enjoyed by tourists from a health and ecotourism destination;
2. development of various product usages among existing tourists. This certainly depends on the attractiveness, accessibility and conditions of facilities and treatments available, but it is a logical assumption that all health and ecological tourism destination have a numerous possibilities to combine these factors. In essence, it is about different experiences of tourists in physical, cultural, social, psychological and other aspects;
3. creation of a completely new possibility product usage;
4. finding entirely new market segments that could be the consumers of the existing products (Weaver, 2002).

Looking at total health and ecotourism development resources in Serbia, current state of development, expected trends on the international market and our

growth ambitions, it would be essential for the Government of the Republic of Serbia to adopt a national strategy for the development of health and ecotourism and establish the basis for its implementation, looking up to the most successful neighboring countries.

It is of crucial importance that health and ecotourism development and promotion in Serbia become not only a means of achievement an overall sustainable tourism development, but also adequate access for repositioning Serbia as a tourist destination on the international market, creating a desirable country image with the abundance of natural and cultural resources.

In this respect, as the most important guidelines for the development of the national health and ecotourism strategy, between vision - strategic objectives - priority objectives - measures - projects, the following are stated:

VISION
The Republic of Serbia: the place of health, recreation, culture and well-preserved nature - unique tourist attraction in Europe, focused on sustainable tourism concept
STRATEGIC OBJECTIVES
1. Developed and promoted tourism potentials and a unique image with the focus on health and ecotourism
2. Strong human resources engaged in the sectors of health and ecotourism
3. Developed institutional capacities in the sectors of health and ecotourism
PRIORITY OBJECTIVES
1.1. Tourism band of the Republic of Serbia well-developed and internationally recognizable **1.2.** Increased health and ecotourism profit due to improved tourism offer **1.3.** Transport and related infrastructure in the Republic of Serbia follows the expansion of utilization of tourism potentials **1.4.** Completely developed health and ecotourism offer
1.1. Professional staff linked and engaged in health and ecotourism development in Serbia
1.2. The population of the Republic of Serbia committed to active participation in health and ecotourism development
1.3. Strong and functional cooperation established between scientific and educational institutions and stakeholders in the sectors of health and ecotourism
3.1. Enhanced promotion of health tourism and environmental capacities and services, as well as increased level of overall awareness
3.2. Increased investments in the sector of health and ecotourism activities by stimulus measures
3.3. Constituted and linked adequate institutions for health and ecotourism development in the Republic of Serbia

MEASURES

1.1.1. Strengthening of the marketing sector of health and ecotourism
1.1.2. Development of a tourism brand based on health and ecotourism
1.2.1. Progression of a diversified health and ecotourism offer, as well as tourist season extension
1.2.2. Coordinated and continuous preservation of cultural, historical and traditional heritage
1.2.3. Health and ecotourism services quality improvement
1.2.4. Strengthening of the capacity of health and ecotourism with regard to accommodation and facilities
1.2.5. Providing strong support to the development of health and ecotourism
1.3.1. Uninterrupted access to health and ecotourism destinations
1.3.2. Paving of access roads to health and ecotourism destinations
1.3.3. Improving reach-ability of health and ecotourism destinations
1.3.4. Development of urban horticulture setup of health and ecological destination
1.4.1. Quality completion of existing accommodation facilities process of privatization
1.4.2. Creating favorable urban conditions for the development of health and ecotourism
1.4.3. Improvement of the existing and setting up new accommodation facilities (with focus on health and ecotourism)
1.4.4. Establishment of health and recreation centers with a focus on a healthy environment
2.1.1. Education for professionals in the sectors of health and ecotourism
2.1.2. Engagement of experts in the design and implementation of health and environmental development activities
2.1.2. Appointing professionals and employees in the sectors of health and ecotourism and supporting activities
2.2.1. Population education on health tourism and ecology
2.2.2. Affirmation of social engineering
2.3.1. Systematic approach to improving the labor market in the sectors of health and ecotourism, and supporting activities
2.3.2. Development and implementation of innovative health tourism and eco-friendly products
2.3.3. Setting up the environment for easier for the access and usage of the EU funds and funds from other donors
3.1.1. Networking of all participants in the sectors of health and ecotourism
3.1.2. Building capacities to promote health and ecotourism
3.2.1. Development of financial and other incentive packages, which focus solely on health and ecotourism
3.2.2. Incitement of domestic and foreign investments in the sectors of health and ecotourism

3.3.1.Creating the conditions for the establishment of institutions responsible for health and ecotourism in Serbia
3.3.2. Private sector engagement through health and ecotourism support institutions
3.3.3. Affirmation of existing institutions involved in the development of health and ecotourism

PROJECTS
1.1.1.1. Education of key actors in health and ecotourism marketing
1.1.1.2. A study on the state of health and ecotourism resources in the Republic of Serbia
1.1.1.3. Creating a database of environmental resources of Serbia
1.1.1.4. Creating a marketing plan for the development of health and ecotourism of the Republic of Serbia
1.1.1.5. Development of promotional materials (brochures, guides, calendars, souvenirs) with the goal to promote health and ecotourism
1.1.1.6. Engagement and education of existing tourist agency on health and ecotourism development
1.1.2.1. Education of key actors in branding health and ecotourism product
1.1.2.2. Development of key brands of Serbian health and ecotourism offer
1.1.2.3. Preparation and publication of the study on continuity of life through various historical periods in the Republic of Serbia with an emphasis on the concept of sustainable tourism
1.1.2.4. Creation of a tourism promotional logo and a slogan of health and ecotourism offer of the Republic of Serbia
1.2.1.1. Construction and development of sports as well as recreational complexes
1.2.1.2. Creating health and ecotourism packages, along with cultural and historical content
1.2.1.3. Introduction of health and ecotourism activities with an emphasis on sustainable tourism
1.2.1.4. Improvement of the cultural and historical content
1.2.1.5. Medical staff work enhancement
1.2.1.6. Initiating the development of new programs and networking with all spas and eco-destinations
1.2.1.7. Development and marketing of the overall health and ecotourism offer
1.2.1.8. Sports and recreation affirmation
1.2.1.9. Launching of new and promotion of the existing festivals in spa complexes
1.2.1.10. Organizing summer sports schools, camps, art galleries
1.2.1.11. Congress tourism content development
1.2.1.12. Creation of the additional activities with regard the well-preserved and healthy nature

1.2.2.1. Protection and renovation of the buildings and monuments of cultural and historical heritage

1.2.2.2. Purchase and conversion of traditional houses in ethnological museums, as an inevitable part of sustainable tourism

1.2.2.3. Placing various cultural monuments and national parks under protection of the UNESCO

1.2.2.4. Restoration of old monasteries

1.2.2.5. Building new cultural monuments authentic for certain spas

1.2.2.6. Renewal and establishment of traditional cultural events (music, painting, literature, theater, cinema, etc.).

1.2.2.7. Creation and promotion of authentic Serbian legends and stories as part of the tourism product

1.2.3.1. On-line information offer for tourists (the principle of "one stop shop")

1.2.3.2. Education of eco-management staff and existing tourism operators in these areas

1.2.3.3. Improving the gastronomy offer with a focus on healthy and organic food

1.2.3.4. Standardization of existing accommodation facilities

1.2.3.5. Creation of maps of significant tourist sites

1.2.3.6. Mobilization of stakeholders to improve the quality of existing accommodation capacities (by organizing round tables and conferences, the use of promotional activities)

1.2.3.7. Reorganization and improvement of health tourism infrastructure

1.2.4.1. Development of recreational and entertainment activities and events

1.2.4.2. Construction of transport corridors, trail system, small-scale non-commercial river traffic system, access to small planes and other infrastructure necessary for the development of health and ecotourism

1.2.4.3. Construction of new facilities and development of private accommodation facilities

1.2.5.1. Analysis and development of the capacity of health tourism in spas and creation of a feasibility study for health and ecotourism development

1.2.5.2. Education of consumers for participation in health and ecotourism development (standards, hospitality, etc.).

1.2.5.3. Creation of a list of health and ecotourism products

1.2.5.4. Spa areas offer promotion (by preparing offer program, organizing various manifestations, cultural and entertaining events, along with the offer presentation)

1.2.5.5. Initiating development of health and ecotourism accommodation facilities

1.2.5.6. Selection, reconstruction and activation of spas in ecological areas

1.2.5.7. Building trim and mountain biking trails in the eco-mountainous areas

1.3.1.1. Reconstruction of access roads to spas

1.3.1.2. Continuation of the construction of Belgrade – Subotica highway

1.3.1.3. Construction of new bypass roads

1.3.2.1. Reconstruction of the road to Zlatar spa

1.3.2.2. Reconstruction of the road to Sijarinska spa

1.3.2.3. Reconstruction of the road to Ivanjica spa

1.3.3.1. Building signage and labeling of key structures
1.3.3.2. Construction of info-points at the busiest sites (bus and train stations, shopping centers, counties, ...)
1.3.3.3. Construction of new walkways at spas
1.3.3.4. Organization of panoramic tours and sightseeing of tourist destinations
1.3.4.1. Construction and renovation of garages and parking lots at key locations
1.3.4.2. Reconstruction of lakeshores
1.3.4.3. Reconstruction of river banks
1.3.4.4. Building and development of sports fields and playgrounds for children and youth is spas
1.3.4.5. Renovation of pedestrian and bicycle paths along the rivers
1.3.4.6. Lighting setup along the key tourist sites
1.3.4.7. Enhancement of spa parks
1.3.4.8. Squares reconstruction
1.4.1.1. The initiative for the finalization of the existing accommodation facilities privatization process, in order to be operative for the development of health tourism with emphasis on ecology
1.4.2.1. Regulatory changes, urban and spatial planning for the tourism potential utilization
1.4.2.2. Coordination of urban and spatial plan with aim to preserve the environment
1.4.3.1. Development of standardized private accommodation in households
1.4.3.2. Construction of new facilities in the vicinity of spa and recreational centers
1.4.4.1. Mineral and thermal waters utilization feasibility study
1.4.4.2. Revitalization of the existing spas with an emphasis on well-preserved and healthy environment
1.4.4.3. Building of new spa capacities
1.4.4.4. Construction of new medicinal resources
1.4.4.5. Setting up the Center for health, recreational and ecotourism
1.4.4.6. Capacities building for wellness tourism
2.1.1.1. Organization of educational activities for professionals engaged in health and ecotourism
2.1.1.2. Promotion of the achieved results and the popularization of the need to educate health and ecotourism professionals through specialized media activities, public events and campaigns
2.1.2.1. Engagement of the experts for the development of specialized training programs for
professionals in the field of health and ecotourism
2.1.2.2. Involving the experts in the development of project proposals and their implementation
2.1.3.1. Strengthening the public-private partnership in the sectors of health and ecotourism

2.1.3.2. Identification and engagement of the stakeholders for partnership in the implementation of regional health tourism connection with the ecological destination
2.1.3.3. Engagement of the representatives of the health and ecotourism sectors in the Republic of Serbia
2.2.1.1. Setting up an expert-team for the development of specialized training programs for the population of the Republic of Serbia\
2.2.1.2. Organization of various educational and promotional activities for alluring the population (introduction to the development potential of health tourism, ecotourism, environment preservation, etc.).
2.2.1.3. Promotion of the achieved results and the popularization of the need to educate health and ecotourism professionals through specialized media activities, public events and campaigns
2.2.2.1. Education of the preschool and school-age children - health and ecotourism awareness development
2.2.2.2. Creation and publication of audio and video materials, print ads, etc.
2.2.2.3. Organizing competitions on health and ecotourism for school children and youth
2.2.2.4. Organizing competitions for business planning in the area of health and ecotourism
2.3.1.1. Networking all the relevant health and ecotourism participants with the Employment Bureau and educational institutions
2.3.2.1. Support and promotion of creative industries for improving the quality of health and ecotourism
2.3.2.2. Health and ecotourism packages content development for youth
2.3.2.3. Setting up a Bank for the support of health and ecotourism in the Republic of Serbia
2.3.3.1. Establishing a center for education of participants in the development of health and ecotourism in the Republic of Serbia
2.3.3.2. Involvement of stakeholders of health ecotourism development in European and other international professional organizations and associations – the adoption of international standards and best practices
3.1.1.1. Print newsletters and materials for all those who have the authority in the sectors of health and ecotourism (counties, relevant ministries, tourism associations, hotels, etc.).
3.1.1.2. Creation of brochures for compatible and complementary cultural attractions
3.1.1.3. Organization of exhibitions and fairs for the promotion of health and ecotourism products
3.1.2.1. Creation of the primary health and ecotourism profile, including promotional materials and websites (online promotion)
3.1.2.2. Creating the registry and catalog of monuments of cultural and historical heritage

3.1.2.3. Inclusion of the printed and electronic media in the promotion of health and ecotourism facilities, through educational documentaries and promotional campaigns
3.1.2.4. The establishment and strengthening of tourism facilities and expansion of their activities
3.1.2.5. Fair promotion of tourism potentials and products of the Republic of Serbia
3.2.1.1. Incentives for setting up accommodation in households based on the "bed & breakfast" model
3.2.1.2. Enticement for young people and beginners in the sectors of health and ecotourism
3.2.2.1. Incentive measures for investments in the sectors of services and products which are complementary to the sectors of health and ecotourism sector
3.2.2.2. Preparation f a guide for potential investors in the sectors of health and ecotourism
3.2.2.3. Creation of investment studies and feasibility studies for key facilities with the focus on the environmental preservation
3.2.2.4. Organization of conferences and presentations for local and foreign investors
3.3.1.1. Initiating and lobbying for return of the authority for health and ecotourism
3.3.1.2. Establishment and strengthening of the institutions for protection, such as the Institute for protection and use of cultural - historical heritage
3.3.1.3. Establishment of the tourist offices in the Republic of Serbia with the necessary human and material resources
3.3.2.1. Founding of the ecotourism cluster on a country level (based on the results of the study on the state of ecological resources and potential) and the establishment of health tourism cluster as a part of spa tourism
3.3.3.1. Establishing a group of tourist guides with a clear and organized plan
3.3.3.2. Development of specialized programs for visitors with an emphasis on geological and archeological heritage, industrial heritage, cultural traditions and multicultural aspects of life

Source: (Popovic-Bajcetic, 2012, pp. 105-112).

CONCLUSION

In the process of strategic planning creation, the attention was concentrated on the definition of the development vision, defining strategic objectives, as well as development measures and projects.

Among the following, the key steps for successful completion of this process would be:

- Consultations with counties and key stakeholders;
- Creation of the final version of the document necessary for health and ecotourism development;
- Publication of the paper, its promotion and distribution to interested parties.

As the next steps, the following are suggested:

1. Action plan development for implementation of the strategic plan;
2. Strategic plan implementation;
3. Implementation progress control/overview;
4. Strategic plan update.

However, the analysis of the represented state indicates that the Republic of Serbia has very good preconditions, which are neither fully exploited nor promoted, for the development of profitable health and ecotourism activities: natural resources (thermal and mineral waters close to rivers and lakes), rich historical, cultural and industrial heritage, favorable geographical position (especially in terms of transport infrastructure), traditional hospitality of the population, existing travel agencies and tourism infrastructure, multi-ethnic and multi-cultural character of the Serbian tradition and growing awareness of the major stakeholders of the benefits that health and ecotourism sector development can bring to the overall economy.

Health and ecotourism in Serbia lack partnership and promotion on the market, traffic connections between tourism destinations, highly skilled staff and there is a low level of supporting services. The awareness of health tourism and environmental protection is inadequately developed among the population, as well as the level of promotion of the same. There is an evident deficiency of enforcement of professional standards implementation, while the infrastructure is sadly outdated and obsolete in some areas.

- Accordingly, further courses of action should focus on the facts that the needs of health and ecotourism sector in Serbia are as follows:
- Preparation of the strategy for health and ecotourism development and promotion, completing tourism offer by defining tourism products that will be unique for Serbia;
- Improvement of tourism marketing activities (especially promotion components);

- Tourism services quality improvement;
- Planning preparation and training of tourist guides;
- Advanced organization of counties' tourist agencies;
- Setting up tourist signalization;
- Participation in more cultural events, conferences, competitions of tourist organizations in the country and region;
- Continuous investment in raising awareness among the population about the importance of health tourism;
- Taking care of travel needs of children and youth, and their involvement in the development of health tourism and protection of the environment (cleaning garbage dumps and building a regional garbage dump);
- Protection of natural and cultural heritage;
- Support to self-employment in the sectors of health and ecotourism;
- Regulation and improvement of the existing and development of new infrastructure and tourist destinations;
- Enhancement of hotel capacities and facilities;
- Construction of the infrastructure necessary for the maintenance of thermal and mineral waters;
- Recovery of river banks and lakes, etc.

REFERENCES

[1] Bakic, O. (2003), Marketing in Tourism. Belgrade: The Faculty of Economics.

[2] Cerovic, S. (2002), Strategic Management of Tourism Economy in Serbia. Belgrade: Zelnid.

[3] Cerovic, S. (2009), Strategic Management in Tourism. Belgrade: Singidunum University.

[4] Dulcic, A. (2001), Tourism Development Management. Zagreb: Mate.

[5] Foster, D. (1985), Travel and Tourism Management. London: MacMillan.

[6] Group of authors. (2002), Sustainable Tourism. Belgrade: Ministry of Environmental Protection of the Republic of Serbia.

[7] Group of authors. (2005), Tourism Development Strategy of the Republic of Serbia, Belgrade and Zagreb: The Faculty of Economics and Horwat consulting.

[8] Kunst, I, Tomljenovic, R. (2011), The role of health tourism in strengthening rural areas competitiveness in Croatia. Zagreb: The Institute for Tourism.

[9] Popovic-Bajcetic, J. (2012), Marketing approach to health tourism development in the Republic of Serbia, Doctoral Dissertation, The University St. Kliment Ohridski, Bitola, The Faculty of Tourism and Hospitality – Ohrid, the Republic of Macedonia.

[10] Rikalovic, G. (1999), Natural Resources Economics. Indjija: „Dr Djordje Natosevic“.

[11] Weaver, D. (2002), Tourism Management. Melbourne: „John Wiley“

[12] Cosic, M. (2007), Tourism Services Quality Management. Belgrade: The College for Tourism, according to: Meffert, H., Wagner, H. (1987), Ökologie und Marketing, Arbeitspapier der wissenschaftlichen Gesellschaft für Marketing und Unternehmensführung Nr. 38, Münster.

[13] Jovicic, D. (2008), Status and Development Perspectives of Spa Tourism Development in Serbia, Bulletin of the Serbian Geographical Society, Tome LXXXVIII - No 4.

[14] Muller, H. (2000), Qualitätsorientiertes Tourismus – Management. Bern: Verlag Paul Haupt.

[15] Protic, D. (1995), Mineral and Thermal Waters of the Republic of Serbia. Belgrade: Geo-Institute.

[16] Stankovic, S. (2002), Rehabilitation Centers and Spa Tourism in Central Serbia. Belgrade: Tourism of Serbia, SGD

[17] Tourism Development Strategy of the Republic of Serbia, Strategy of the Government of the Republic of Serbia, available at http://www.kg-cci.co.rs/pdf/strategije.pdf

[18] Zivkovic, R. (2010), Consumer Behavior and Protection in Tourism, Singidunum University, Belgrade, available at predmet.singidunum.ac.rs/pluginfile.php/…/PZP%20I%20nedelja.pdf

[19] http://www.ekogea.org/biodiverzitet.html

DEVELOPMENT PROSPECTS FOR ECOTOURISM IN THE SOUTHWESTERN REGION OF THE REPUBLIC OF MACEDONIA

Katerina Angelevska – Najdeska[61]

Abstract: In the creation of the tourist offer, emphasis should be laid on the extraordinary and natural motives never touched by a human hand, the magnificent compositions of anthropological and nature quality values that impress with their endemic rare and unusual species of flora and fauna that should represent a part of the wide range of "offers" but the even greater number of "suppliers".

Ecotourism in Macedonia is underdeveloped, but growing. Demographic, natural, technological, economic and other factors positively or negatively affect the sustainable development of ecotourism and rural areas. Perceiving the impact direction of these factors, based on data for specific biodiversity, landscapes, water and climate of certain areas is a starting point for undertaking rural activities. This results in a positive cumulative effect of activities in rural development, including sustainable tourism development. Rural development will be done by involving households in tourist activities and preserve the balance of the ecosystem. Sustainability means rural development by providing resources renewability and economic and environmental efficiency. Achieving sustainability affect the redistribution in the structure of the number of tourists in rural areas.

Rural areas as a destination and the goal for potential tourists visiting became attraction that should be utilized. Real hope encourages potential of so-called rural tourism, especially because the quality of the natural environment and the essential values of the visual landscape almost on the entire space of Macedonia are continuing to be values that are or may be very attractive in tourist sense.

Key words: Ecotourism, Rural Tourism, Development, Resources, Valorization

JEL classification: Q00, Q56, Q57

UDC 338.48-6:502/504(497.7)

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INTRODUCTION

In the endeavor to build a good image or brand of the destination, with one and only objective of attracting a great number of tourists, the stereotype manner of setting out the already well-know attractive components of the destination should be avoided. In fact, that would mean an investment in stimulation creativity and searching for ideals in order to enrich the tourist offer with elements that either have not been valued or have been consciously avoided or not included in the offer.

The abundance and harmony that nature bestowed upon Southwestern Region and the surrounding region is a true rarity. Therefore, the magnificence of the lake, its endless power to attract, and the attractiveness of Southwest Region as a tourist destination must not be questioned.

Compared to the urban tourism, the eco and rural tourism is developed in the rural areas which possess natural and anthropogenic pre-conditions for satisfaction of tourist needs. Most often this tourism is being developed upon the ambient values of the rural areas and the recreational features that come up from the manner of doing rural activities, taking in consideration that this is specific tourist offer, for relatively longer holidays, for small radius of movement and for seasonal type of tourism. Out of this context there are excursions to the villages that possess other characteristics.

The development of this type of tourism has not only economical but also strong social-psychological influence over the rural population. The importance of the development of the rural tourism is seen in the fact that modern tourism involves tourist utilization on relatively greater surface and wide spaces. In the tourist offer are introduced elements and qualities which, when the rural expanse is in question, can not only be expressed through traditional connecting with the term recreation in the mountainous areas and winter sports centers, regardless of how much further they would be attractive.

The eco tourism, when speaking about Macedonia, can become a reality in all its rural regions. Like any modern form of tourism, also the eco and rural tourism must take place continuously throughout the year. It should also have its seasonal and infrastructure features, to be based on the rich and very interesting tradition, but also to offer the visitors landscapes and anthropogenic attractions that are worth seeing and that are worth staying in. Only in exceptional specific circumstances such realized rural tourism can retain to the classic foundations of the summer or winter tourist seasons. Since in Macedonia there are few such sites, it is obvious that in economic terms very important are the potentials that contain the rural area as a whole, and that their tourist organization has wider economic meaning. Without it, many of the villages in the region of Macedonia, according its possibilities will continue gradually to disappear.

With organizing the landscapes that traditionally belong to the rural population in Macedonia it must achieve its real, visual, ecological and tourist promotion. Interventions, in particular, must be the consequence of the well studied natural potentials of certain areas – evaluation and promotion of the available micro relief, vegetation, water flows and inherited infrastructure. The attractive properties of

tourism resources to gain market value through a form of tourist offer, it is necessary to proceed to the tourist valorization. (Jovičić, Ž., Jovičić, D., Ivanović, V., 2005, pp 178) The valorization can do much in the transformation of these significant tourists' potentials in Macedonia.

Eventually, we should say that in any environment governed by the principles of the landscape approach, it is easier to organize the tourist activities in a typical rural spirit and features as following: organized walk in the surrounding with a tour of the nearby attractions, participation in performing seasonal activities, very attractive for the tourists, systematic and tourists intended revitalization of old crafts (pottery, tapestry); improvement of the traditional amateur painting, literary work, rural theater amateurism; organized participation in discovering and collecting rare and endangered species of plants, as herbs, samples of minerals, minor and attractive fauna (butterflies, snails, crabs), etc..

ECOTOURISM AS SIGNIFICANT DEVELOPMENT COMPONENT

Because of the fact that Macedonia has parts of the state with beautiful natural resources that are not sufficiently developed i.e. not developed by any form of industry that would possibly invest in the development of eco-tourist centers across the country. Where permitted, tourism development usually prefers alternative options such as eco-tourism. (Hunter, 1997, pp. 67)

In order to achieve good eco-tourism foremost it is needed to work on the elevation of the ecological awareness of the hosts and parallel with that on the potential guests. Both sides are mostly responsible for the pollution that happens in particular maximum ecologic municipalities in terms of natural resources and underdevelopment of industry in the region. Since the 70s of last century, when ecology became an integral action plan in the world socio-economic framework, started the thinking that many areas with preserved environment can be carriers of developing eco-tourism. (Dekić, Vučić, 2003, pp.172)

In Republic of Macedonian eco-tourism should be an integral part of the strategy targets for development of the rural tourism relating to:

- intensifying the overall development through full utilization of the existing capacities;
- fast and important way out of Macedonia, as a tourist destination on the international market;
- creating conditions for further development of the domestic tourism;
- improving the overall organization in function of more effective governance with tourism development, and
- building ambience of eco-tourism which simply would attract additional investments and will carry continuous progress.

In order to conduct eco-tourism, which more than obvious is essential for attracting foreign visitors in long terms and making Republic of Macedonia a respectable tourist destination, first it is needed to develop a healthy development plan of this type of tourism i.e. this type of tourist destinations. Macedonia can offer a lot due to the fact that owns lots of space which is ecologically unpolluted, but also economically maximum underdeveloped.

It should use the basic rules of management i.e. creating rules of the game, seeking for decisions, accepting some decisions, implementation and eventually starting with works.

However, the fact that ecotourism is solution for the modern displeasure of the people who want through the economic development and the wish to return the negative consequences of the society through the ethic effects of development and utilization and saving the unprotected spaces.

FACTORS OF SUSTAINABLE DEVELOPMENT OF RURAL TOURISM

Sustainable development is a process that allows the development to be achieved without degradation or depletion of the resources on which is based. That, generally speaking, can be accomplished by resource management, so that the resources can be replenished to the extent and used, or with greater representation when the period of regeneration of the resources is short. With this approach, resources can be used in future to the same extent as the current generation. (WTO and UNEP, 1983)

The influence of the demographic factors on the development of rural tourism depends on the density of the local population, age structure, birth rate, professional orientation of young people, the motivation of unemployed tourism experts to work in rural economy, etc. Positive factor for the development of rural tourism is the vitality of the people in that field. Orientation towards rural tourism causes a need for agreement on the agriculture and tourism activities. Negative effect on the development of rural tourism can be when more than half of the total number of households in our country have members older than 60 years.

More important are the technologies that allow conservation of the natural resources. This means that the following elements should be taken into consideration: the environmental consequences of the projects that are realized by introducing new activities, responsibilities for environmental protection, safety of the used products, minimizing the negative effects from the use of resources through application of environmentally safe technology, strategy of behavior in case of alarming deterioration of the quality of the surrounding.

The effect of encouraging the development can be replaced with so-called effect of co modification as local residents adapt products and services on demand of the tourism market but not on the needs of their community. (Cohen, 1988, pp. 86)

The activity of tree planting positively impacts the improvement of the microclimate and increases the sustainability of the rural development. Protection against erosion is achieved by forestation, rotation of crops that are planted and so on. Forest fires are a factor that negatively affects the rural tourism. The control of technological and natural factors positively affects the sustainable development of tourism. Lack of favorable climate and unpolluted water is a factor affecting the increase in consumption of tourist services in the rural areas. The quality of the environment is largely a result of agricultural activities, and reveals data on area under forest, pasture, crops, forage plants. The presence of pasture has a positive effect on the volume of rural tourism services, and the stockbreeding reduces their volume and price.

THE PROPPER MARKETING MANAGEMENT FOR DIVELOPMENT OF RURAL TOURISM IN THE REGION

In modern economic conditions, when the conditions of economy are rapidly changing, the marketing-management strategy enables the tourist destination to react on time on the market and to gain certain advantage over the remaining (competitive) destination.

Making efforts to attract actively the demand, to choose the real market, investing in the creation of particular advantage with regard to the quality and prices of the tourist product and the aspiration toward concentration and cooperation of the subjects in the rural area actually represent a great challenge to Southwest Region in choosing the suitable experts and optimal sum of means in order to achieve those goals in the best possible way.

The propaganda's task is to provide the potential tourists information concerning the tourist destination, which has to be true and accurate. The main objective is to attract the potential tourist to the tourist destination so that they can consume the tourist product.

The organization of the propaganda implies undertaking of all activities within the tourist destination that are necessary for a successful accomplishment of the tasks and achievement of the goal.

As this region’s main objective is to become once again an attractive and popular tourist destination, it is necessary to undertake a great number of tasks and measures for adequate propaganda. That means paying much more attention to the way in which it will inform the potential tourists about all its attributes.

THE NECESSITY OF DEVELOPMENT OF THE RURAL TOURISM

The development of the rural comes from its multi-functionality. It is characteristically that this type of tourism offers many possibilities. Development of rural tourism enables intensification of activities with traditional character that by themselves are not of economical importance. Development of the rural areas is being accelerating. The products are being sold on the sport of the place, and so they are not transported which leads to the decrease of the cost of their distribution. At the same time, the extra living space can be lent at good price. New human resources are being engaged to offer catering services. The problems of migration are being decreased as well as the pressure over the urban zones. The environment is being protected as well as the human heritage. The principle of interfacing of different cultures and their mutual exchange is being established. Within this context, the multicultural concept is of special importance.

Certain educational processes can be noticed as well (the contact with processes that cannot be found in urban areas). Many new activities can be learned exactly in this kind of environment.

DEVELOPMENT PHASES OF THE RURAL TOURISM

Every local community would decide to develop tourism if it is a profitable option. Because this market is highly competitive, the local communities must have a plan of development as well as a good marketing plan. The following phases are crucial:

1. First step is defining of clear goals of tourism development and visits that will be fully supported by the local community. The common goals are: initiating longer stay of visitors in that area, maximization of their spending, keeping the season as much longer and maintenance of certain level of tourist fluctuation.
2. Well organized community forces should be formed in several working groups. Their activities include promotion of their own tourist attraction to the target group, special events as festivals, fairs, trade exhibitions and sales, domestic activities etc; creating of awareness for hospitality and importance of offering good services to the spenders, creation of visitors information center with the aim of easier getting along during the visit and of course spending more money.

3. It is important for the quality of the attraction to correspond to the tourist program. The possible options of attractions include festival, natural resources, and historical attractions, facilities for recreation and for scientific-conferential activities." This is a highly competitive job and therefore do not pretend to be what you are not. The force of the successful tourism of the local community is being built upon the existing opportunities. Also, the adequacy of the restaurants, hotels, rooms, clean local environment. (Woods, 2000)
4. The term "CARE" includes:

- **C**reating new jobs
- **A**ttracting new businesses
- **R**etaining of existing firms
- **E**xpanding of existing firms

The increase of the number of micro, small and medium size firms (with financial, technological and managerial support) will result with new job positions and additional income. Maintaining of existing small businesses also leads towards greater stability of the local economy. Since the local communities possess limited resources (human and material), it is of crucial importance for the strategic planning to enable usage of resources of the most adequate way.

MEASURES FOR REALIZATION OF THE SUSTAINABLE DEVELOPMENT OF RURAL TOURISM

The development of rural tourism should be based on adequate legal provisions, and in our country the development of rural tourism should have a positive effect on employment of youth, women and handicapped.

The financial resources are an important precondition for protection of the natural environment. Incentive measures of the economic policy of engaging with sustainable rural tourism in first plan will be the measures of credit policy. Loans may be intended to build or improve the quality of the accommodation facilities for tourists.

The development of tourist zones in rural areas should be in line with the spatial planning. These zones should be differentiated into those that can develop sustainable tourism and those that are difficult to implement it. In order to be sustainable in the rural area, tourism cannot be massive, because the enormous number of tourists is a risk to the quality of the natural resources. Suitable are small accommodation facilities that are architecturally consistent with the rural area. Safe removal of the waste in the rural areas should be resolved in an adequate manner.

An important precondition for the sustainability is the use of appropriate energy and saving the non-renewable sources of energy. Positive examples are Sweden and Finland which use 15% of energy from biomass. Organic waste of

plant production is used for the synthesis of biomass that replaces the liquid fuels. Biodiesel should be used more as an ecologically suitable fuel in agriculture.

Even one-day workshops can help farmers to organize their activities in the rural tourism. Tourist experts should organize the content of the seminars and suit them to the needs of farmers and others who are oriented towards rural tourism. Involvement of different profiles (architects, ecologists, ethnologists, caterers and nutritionist) is required for presentation to tourists the forgotten treasures from certain rural area. Establishing management of the environment in rural tourist areas is increasingly important.

Taking into consideration the previous features and conditions it can be concluded that the majority of rural areas in Macedonia, especially in the hilly and mountainous area, at this point have no determined potentials for organizing relevant production activities, nor recognized conditions for broader development of the so called rural tourism. The need to change that is a chance for Macedonia in the future. It is of such nature that could be used without major and complex interventions in space, which in material terms would not represent excessive burden.

THE PRE-CONDITIONS AND POSSIBILITIES OF RURAL TOURISM DEVELOPMENT IN SOUTHWEST REGION

The treatment of pre-conditions and opportunities for development of this type of tourism is of crucial importance. The basic pre-conditions can be found in its ecological-anthropogenic- valorization base. It is necessary during the process of tourist valorization to determine and differentiate the land areas where the ecological systems function without special disturbances.

The valorization depends of the aims which have to be rich. The tourist valorization of the attractive-motivational phenomenon and relations is very important. That should permit the tourist development, different kinds of tourist activities and different ways of their including into this activity.

When we talk about the "attractiveness of the destination" as a factor, we should point out that this region might be considered as a rarely attractive region. That means the environment is not jeopardized which can be taken as basic attractive-motivational value.

Within that context the level of complementing of anthropogenic and natural element should be taken into consideration. The relative communication and interference is varying important as well as the infrastructural and communal arrangements. In the field of "the destination accessibility" a lot has been done in regard to modernization of the traffic communication in this region, as well as modernization of the traffic accessibility of the tourist localities in the surrounding.

For the living space it is necessary to be equipped according to the needs of the tourist clients (meaning the hygienic and sanitary aspect).

On the other hand, when we talk about the conditions of accommodation, we must mention the fact that for the last few years the offer has been enriched with private accommodation capacities where the level of service is relatively high. However, during this period the already existing capacities have been reconstructed and renovated, thus producing conditions for offering much higher quality of service. Also the important factor is categorization of receptive capacities due to providing contracts for their usage.

When one of the aims is revitalization of rural area and their transformation into interesting tourist zones, to ascertaining the actual and potential elements of the local environment must be given serious attention. Conclusions should be made based on analysis of the results obtained with the help of accurate, ascertained effects and assess of the overall use of organizing such specific economic activities, from which at the same time it is possible to live from. The tourism market requirements in terms of products and services quality is growing and changing at an accelerated pace. Planning services is entirely dependent on the quality to be achieved in respect of those services. In this framework include the services offered by tourism industry. (Angelevska-Najdeska, 2009, pp. 133)

REGIONAL SWOT ANALYSIS

During the preparation of SWOT analysis of the situation in the Southwest Region, particular attention is paid to the following areas: demographic development, economic development, labor market, social development, infrastructure, agriculture and rural development, tourism, cultural development, environmental protection and renewable energy sources.

The final synthesis of the elements resulting from this process enable to confirm some of the previous ones, but also to gain new knowledge about regional challenges, opportunities and potential, as well as risks relating to sustainable development strategy. (Program for development of Southwest Region, 2010, pp.55)

Strengths

- Available natural resources and a relatively clean environment, good infrastructure base, an international airport, border zones and crossings
- High rate of activity among people with higher education, young working population and active labor expert
- The highest share of successful SMEs in employment especially in construction, the textile industry, wood industry, tourism and agriculture
- The existence of a large number of manufacturing resources and facilities in the crafts tradition

- Positive population growth and equilibrium in gender balance, with above-average representation of pre-school and school-education contingent in the total population, as well as below average internal migration
- Large agricultural land and favorable climate for growing crops, aromatic and Mediterranean plants, industrial and forage crops, vegetables, fruits and vines.
- Large pastures for cattle rearing versatile, developed work with fisheries and stocking
- Development of basic types of tourism, rich attractive fund development potentials, existing facilities for hotel accommodation, seats in the hospitality and tourism consumption increased
- Existence of archaeological sites and artifacts, churches, monasteries, mosques, towers and fortresses, monuments that is provided solid protection, active cultural institutions, regular cultural events throughout the whole year
- National and international environmental protection in terms of food production, and energy production from renewable sources such as water potential, biomass, wind, solar, and geothermal waters

Weaknesses

- Uneven population density in municipalities are eligible, towns and rural areas, with uneven birth and high external migrations from rural areas resulting in depopulation in some areas and increase in age contingent
- Being behind the GDP at the national level with the lowest gross salary per employee due to low productivity, poor competitiveness and export performance, resulting in high cost of labor per unit of output
- Due to the collapse and closure of large and medium-sized enterprises were active in the region in the state registered the largest loss of jobs and massive drain of professional staff
- Insufficient use of modern technologies, underdeveloped infrastructure and logistics industry, uneven development of municipalities and areas within the region
- Lack of application studies and development programs, poor marketing planning and nonexistence sufficient associations in the business community at all levels, and inadequate educational structure of the population according to the needs of the economy
- Lack of investment by constraining conditions for development of business particular for difficult to solve property issues, inadequate infrastructure, urban planning and promotions, as well as weak legal and application performance
- High rate of unemployment particularly low employment of young
- Poor quality of roads and lack of maintenance, insufficient built road and rail network and the lack of resources and signaling

- Local dilapidated water infrastructure and the existence of asbestos piping, poor quality of drinking water and no drains and treatment plants in rural areas
- Lack of oil and gas, small coal reserves and has built systems using geothermal waters
- Poor organization of farmers and fragmentation of agricultural land, a small number of businesses and low employment for mostly seasonal jobs
- Poor connection of tourism, unfavorable foreign attendance and residency which means poor utilization of accommodation, as well very low offer of alternative types of tourism
- Insufficient signalization for the cultural monuments, poor communication and lack of institutional care for theater
- Increasing the quantity of waste and its uncontrolled disposal, air pollution

Opportunities

- Openness to foreign investment activities
- Undertaking promotional activities to attract investment
- Opportunities to use a relatively young and dynamic population natural growth
- The relatively small economy and the national and regional level that allows quick adaptation to market conditions
- High unemployment rate, particularly large number of people etc. redundancy in regions with favorable qualifications and experience is excellent opportunity for proper targeting and utilization of human resources, pooling of businesses related activities of the joint
- Promotion of the region to attract foreign direct investments and investments by expatriates to restart the closed production facilities and rapid development of the industry
- Provide locations - areas for construction of industrial zones and technology parks that will increase the number of providers of business services to improve the business environment, the circulation of new business ideas and opportunities
- Stimulating the development of entrepreneurship and increase the competitive ability, revitalization of craftsmanship and encourage family businesses
- Sustainable use of natural and cultural heritage through the use of instruments to support the development of micro regions
- Increasing administrative capacity of municipalities for increased responsibilities with decentralization
- Considerable application of the balanced regional development and the law of public-private partnership, and better communication and collaboration between the entities in the region

Threats

- Outflow of young staff abroad and decline of financial power of the population
- Lack of application of the legislation, slow implementation of existing national strategies by sectors
- Discrepancy between central and local authorities in terms of resource management
- Lack of cooperation between the public and private sector, entry of foreign products with surreal low prices, smuggling of excise goods and other products, gray economy
- Poor accessibility to services for financial institutions and strict criteria for adverse credit and high interest rates, which discouraged business development
- Weak activity of production capacity
- Poor performance of the judiciary in the resolution of bankruptcy proceedings
- Extensive and poorly functioning public administration
- High internal indebtedness
- Inadequate attention to environmental protection, or not taking into account all aspects, and it can be a threat to the traditional advantages that exist with the natural and cultural heritage

Strategy, aims and priorities

The vision for the development of the Southwest Region is multifaceted. According to it, "Southwest Region is a place that is characterized by rapid, dynamic and sustainable development, with particular contribution to overall social progress of the Republic of Macedonia, which is based on economic and social development of the region, which makes it competitive in the national and international level." Regional Development in the Southwest Region is based on the functioning of the institutions from national to local level. Vision for development requires continuous and strong policy to all stakeholders in order to address disparities between urban centers and rural areas. Balanced regional development requires the full commitment of all stakeholders in meeting strategic objectives, priorities and measures outlined in the program to be implemented in defined medium term.

Strategic aims

The identification of strategic aims to promote regional development in the Southwest Region is made based on an analysis of available statistical data and knowledge of working meetings with stakeholders from local government, private and NGO sector in the region. Also in formulating strategic aims for regional development, are being scrutinized objectives and priorities of the Strategy for

Regional Development of the Republic of Macedonia 2009-2019, as a basic document for development planning.

The main strategic objectives of the development program of the Southwest Region for the period 2010-2015 are:

1. Competitive region in the national and international level, which is characterized by rapid, dynamic and sustainable development
2. Social, economic and spatial cohesion between urban and rural areas within the region, the optimal use of its specific characteristics

The priorities are:

1. Economic growth reached a quality level of knowledge and skills of human capital, developed small and medium enterprises and recognizable products related to geographical region of origin.
2. Place a developed and modern road network, the sustainable management of water potential, developed educational and information and communication infrastructure
3. Agro-business concept in modern concept of producing agricultural products recognized for the region and sustainable rural development based on modern knowledge and technologies
4. Attractive tourist destination with a rich and integrated tourism offer, based on sustainable exploitation and protection of cultural and natural heritage
5. Ecologically clean area, protected water, air and soil, an integrated system of waste management and sustainable exploitation of renewable energy
6. Developed social infrastructure, with a network of efficient services, decent life and a decent standard of living

CONCLUSION

The rural areas have really big importance for this region. Their specific surrounding, activities, even the specific nature have a positive influence for tourism development into the region. The magnificent nature and the high quality of the air in villages fascinate the tourists. Some of the villages are attractive with their beautiful beaches. This region is rich with cultural values, and the nature surrounding is delightful as well. The meaning of development of rural tourism is very important, because the tourist have chance to take a part rural life, which means they can do the things and activities which rural people do every day.

Insofar as the local community have no enough finances to prepare the rural areas for long stay holiday for tourists, than the cooperation with the travel agencies and the accommodation is necessary to make that possible even for short stay.

However, the rural areas in Southwest Region have relatively well traffic communication and relatively well accommodation possibilities, and the local community has to thing very seriously about the development of rural tourism as a way of higher attraction of tourists into this region.

The tourist meaning of the rural area in Macedonia because of the geographical and ecological factors is significantly great. Not only that in many areas it possible to revitalize the traditional landscape of this Balkan zone, interesting for the domestic and foreign guests, but also in a broader sense the organization of vegetation or agricultural production can be considered as a realistic, economy affordable and social-necessary measure that the state must undertake in order to end the ruining of the rural communities in Macedonia.

Special meaning in this process has the forming of such state of consciousness in which life in the village by its social-urban features gets closer to the life in the urban environments, making it attractive for young people. The presence of tourists in most of the year certainly is one of the elements that despite economic has significant social quality.

Greenery as a basic landscape element of the rural areas in Macedonia must represent a basic geographic, ecological and visual frame in the process of transforming individual areas from backlog and abandoned into tourist-food zones that are characterized by the specific production of healthy food, water quality and existence of diverse tourist attractions. If the woodland areas already exist, they must be arranged and revitalized by the rules dictated by forestry engineering, and where there is not, it must be rebuild. Similar role have the green surfaces in the rural areas. Their meaning is verified by a landscape architect, who is directly responsible for their functioning to quickly become proportional to the size and condition of the individual plants. Eventually, it should be reminded that through the existence of greenery it can be expected that the term sustainable development, when it comes to this issue, does not represent target of theoretical phrases or topic of endless office discussions.

The rural and agricultural tourism are route in the future for some households, by orienting the young population to that activity. Both micro and small enterprises can join the development of sustainable rural tourism. The involvement of experts with new profiles is one of the factors for the development of rural areas and sustainable tourism. Sustainable tourism increases the competitiveness of the offer of rural areas and improves the valorization of the agricultural production. To be a sustainable business, the rural tourism must meet certain conditions. Measures to support sustainable rural tourism can be of economic, legal, technological, educational character. Financial support can be given by banks that provide loans for rural development. It can be micro credits. Selective tax policy is also an encouraging factor for the development of rural tourism. Essential is the education of people involved in the activities of rural tourism, in order to create regions with conserved biodiversity. It is the only way not to jeopardize the satisfaction of meeting the needs of tourists in the rural areas. Also enriching the supply of biologically valuable food is an integral element for the transition of rural tourism in a sustainable system.

REFERENCES

1. Angelevska-Najdeska, K. (2002). Magisterski trud: Marketing menadjment na ugostitelskiot proizvod, Fakultet za turizam i Ugostitelstvo, Ohrid
2. Ангелевска-Најдеска, К. (2009): Валоризација и управување со туристичките ресурси во функција на одржлив развој на туризмот во Република Македонија, Докторска дисертација, Факултет за туризам и угостителство-Охрид, Охрид
3. Bakić, O. (1988). Strategisko planiranje turističkog proizvoda, Naučna knjiga, Beograd
4. Bakić, O. (2002). Marketing menađment turističke destinacije, Ekonomski fakultet u Beogradu, CID, Beograd
5. Čačić, K. (1980). Izbor kanala prodaje-sa posebnim osvrtom na jugoslovenski turizam, Jugoštampa, Beograd
6. Cohen, E. (1988): Authenticity and commodification in tourism, Annals of Tourism Research, 15, 371-86
7. Dekić, S., Vučić, S. (2003): Savremeni ruralen turizam I rekreacija, Ruralni turizam I održivi razvoj, Zbornik radova, Kraguevac
8. Hunter, C. (1997): Sustainable tourism as an adaptive paradigm, Annals of Tourism Research, 24, 850-67
9. Jovičić, Ž., Jovičić, D., Ivanović, V. (2005): Osnove turizma, Turistička štampa, Beograd
10. Kobašić, A., Senečić, J., (1989). Marketing u turizmu, Školska knjiga, Zagreb
11. Lancaster, G., Massingham L. (1997). Menađment u marketingu, (prevod), Privredni pregled, Beograd
12. Мариноски, Н. (2002). Основи на туристичка теорија и практика, Факултет за туризам и угостителство, Охрид
13. Stipanović, C. (2006): Koncepcija i strategija razvoja u turizmu-Sustav i poslovna politika, Sveučilište u Rijeci, Fakultet za turistički i hotelski menadžment-Opatija, Opatija
14. Unković, S.,Čačić, K., Bakić, O., Popesku, J., Savremeni tokovi u turizmu, Univerzitet u Beogradu-Ekonomski fakultet, Beograd, 1991 god.
15. Woods, M., Diversifying the rural economy: Tourism Development, Oklahoma State University, Southern Rural Development Center, 2000
16. WTO and UNEP (1983): Workshop on Environmental Aspects of Tourism

RURAL TOURISM AS A STIMULUS OF SUSTAINABLE RURAL DEVELOPMENT IN THE VICINITY OF KRAGUJEVAC

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Abstract: Rural tourism is an activity that can have a significant impact on the economic, social, functional and structural improvement of the rural area and stop the negative processes of degradation and depopulation of rural areas. Objective: The aim of this work is the determination of importance of rural tourism, through a comprehensive review and analysis of rural tourism with special emphasis on sustainable development. The subject of the research is: Rural tourism and sustainable development through the implementation and analysis of rural tourism, the analysis of the concept of rural tourism in Kragujevac and the surrounding area. Methodological procedure: This research was conducted using standard methodological procedure. The methodological procedure based ondesk research literature in the field of contemporary trendsin tourism, sustainable development, ecotourism, rural tourism andother references. Thepaper are used the descriptive and comparative statistical methods and SWOT analys is of rural tourism elements and content of Kragujevacand the surrounding area. Research results: By using descriptive analysis revealed asignificant correlation between the environmental community and the development of local communities throughthe adoption and implementation of sustainable rural tourism. From 56 villages in the city of Kragujevacin 10 existing capacity and offersfor rural tourism. Villages with rural tourism are concentrated in thenorth-western part of the city of Kragujevac. In the villages where rural tourism activities are grouped in a relatively small area with in a radius of 18 km. The second and only one locality is situated in the southeastern part of the city of Kragujevac in Gledicke mountains. The paper analize current tourism offer and accommodation capacities sorted by: rural vilages, number of beds, type of house hold (categorize), contains travel activities... Rural area of Kragujevac has anatural, ethnic, cultural andhistorical resources for the development of rural tourism. Kragujevac regionis less developed for rural tourismin comparison to other neighboring regions.

Key words: Rural Tourism, Sustainaable Development

JEL classification: Q00, Q01

UDC 338.48-44(497.11-22); 338.48:502.131.1(497.11)

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INTRODUCTION

Rural capital includesvarious componentsof rural resources. They arenatural (eg,forestorpastureboard), and canbe built(villages), or social, such as a localcultural tradition. In practice,most of theruralcapitalis exactly thecombination ofthese three components(Slee 2003.).

Elements ofruralcapitalinclude:naturallandscapes(including thewater area), flora andfauna, biodiversity, geology and soil, air quality, hedgesandfield margins, agricultural buildings,villages,historical value, the remains of industrial facilities,roads (railways, paths, roads), water area(rivers, ponds and lakes), water quality, forest areas, fields, specificlocal customs, languages, costumes,food, crafts, festivals, traditions, generallifestyle(Garrod 2004.).

The developmentof rural tourismcarriesa range of economic, environmental, social, cultural andpsychological effects. Someof these effectsmay be positive, some negative. The strategydevelopment and planningof tourism inrural areasshould be encouragedpositive effects.It is also necessaryto preventadverseeffects.It is necessary toconsiderthe following elements:limitations of spatialdevelopment,identificationand assessment ofcarrying capacityof rural areasand so on (Kabir et al., 2012).

Since the 1990s,more and more frequentin the theoryand practice ofstartingto use the termspecific formsof tourism (SOT), which is a freetranslation ofthe termused inEnglish speaking countries-special interesttourism.Specificforms of tourismcan be definedas a specificset oftourist movements, defined certain, the dominantmotif oftravel. Touristconsumerstartsto travelto the destination, whichoffersitscontents are adjustedachievement ofexperiencerelated to thedominantinterestsof theconsumer (McMillian et al., 2012).

Depending onwhether thecontents of the bidbasedmainlyon naturalor predominantlyon socialresources,specificforms of tourismcan be dividedinto two groups:

1. natural resources: health tourism,sports tourism, nautical tourism, eco-tourism, rural tourism, hunting and fishing, naturism,
2. social resources: conference(MICE - meetings, incentives, conventions, events)tourism, culturaltourism, gastronomictourism,events(eventtourism), religious tourism, museum tourism,casinotourism.

According to forecastsWorld Tourism Organization, the largestgrowth in revenueis expected inthe nexttourist product (Mićić M. 2007., str. 171):sportstourism, adventure tourism, rural tourism, winter and summer, cultural tourism, thematic tourism.There are severaldifferent classificationsof tourism.Depending on thestateto definetermsrural andruralareavariesaccording to the numberof inhabitants, population densityper km2.

Table 1.Definition of terms rural and rural area

State	Criteria
➢ Austria	placeswith fewerthan 1.000 people, with a densityof less than400st/km2
➢ Denmark	agglomerationswith less than 200of inhabitants
➢ England	settlements withfewer than 10.000inhabitants
➢ Ireland	differencesbetween ruraland urban areasisset to100of inhabitants
➢ Italy	settlements withfewer than 10.000inhabitants
➢ Norway	agglomerationswithlessthan 10.000of inhabitants.
➢ Portugal	parisheswith fewer than10.000 inhabitants
➢ Scotland	local areaswith less than 100inhabitants per km2
➢ Spain	settlements withfewer than 10.000inhabitants
➢ Switzerland	parisheswith fewer than10.000 inhabitants

Source: Faculty of Science, University of Novi Sad, Definition of terms rural, rural areas and rural tourism

The following tablepresents thespecificsof ruralversusurbantourism.

Table2.Specifics of urban versus rural tourism

Urban tourism	Rural tourism
Settlements with more than10.000 inhabitants	Settlements withfewer than 10.000inhabitants
Urbanizedareas	The natural environment
Intensiveinfrastructure	Poor infrastructure
Large objects	Smallobjects
Companies inthe national and internationalowned	The work thatislocally owned
Employees canliveaway from the workplace	Employeesoftenlive close tothe workplace
Rarelyis influenced byseasonal factors	It is oftenaffected byseasonal factors
Relationswith the guestsarenon-personalized	Relationswith the guests arepersonalized
Professionalmanagement	Amateurmanagement
Growth and Development	Preservation andgrowth restriction

Source: Organization for Economic Co-operation and Development (OECD), 1994.

According to the WTO, the concept of rural tourism based on rich natural resources, the rural heritage, rural lifestyle and rural activities. Natural resources include mountains, rivers, lakes, forests, rural heritage includes traditional architecture, industrial heritage, history, churches, villages, rural life related to local events, restaurants, traditional music; rural activities related to horse riding, cycling, fishing, walking.

There aresome common characteristicsthat make the keyelementson which therural tourismidentified: ruralpeaceful environment, preserved natural environment, traditionalaccommodation inruralhouseholds, communication with the host, local food ina recognizablelocalenvironment(taverns, etc..). Introduction toagriculturalactivities, and complementaryactivities underrural tourismis most oftenrelated to the organizationof culturaland recreationalactivities.

Table 3.Key elements of rural tourism

Key elements of rural tourism
✓ Located in therural areas
✓ Functionallyrural: based onsmall entrepreneurship, outdoors, in the natural environment, based on theheritage and tradition
✓ Participation in activities, traditions and lifestyleof the local population
✓ Providespersonalcontact
✓ Settlementsand buildingsinethnic style
✓ A highproportion oftouristrevenuefor the localcommunity

Source: Roberts L., Hall D. Rural Tourism and Recreation: Principles to Practice, CABI Publishing, London, 2001.

THE CONCEPT OF SUSTAINABLE DEVELOPMENT

According to the Complete A-Z Geography Handbook sustainable development is defined as “development that meets the needs of the present, without compromising future generations to meet their own needs. The environment should be seen as an asset, a stock of available wealth but if the present generation spends this wealth without investment for the future then the world will run out of resources. According to the International Institute for Sustainable Development (IISD) sustainable development has been defined in many ways, but the most frequently quoted definition is from Our Common Future, also known as the Brundtland Report: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts: The concept of needs, in particular the essential needs of the world's poor, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs." All definitions of sustainable development require that we see the world as a system - a system that connects space; and a system that connects time (IISD Conference, 2007).

The concept of sustainable development has in the past most often been broken out into three constituent parts: environmental sustainability, economic sustainability and sociopolitical sustainability. More recently, it has been suggested that a more consistent analytical breakdown is to distinguish four domains of

economic, ecological, political and cultural sustainability. This is consistent with the UCLG move to make culture the fourth domain of sustainability.

Agenda 21 clearly identified information, integration, and participation as key building blocks to help countries achieve development that recognises these interdependent pillars. It emphasises that in sustainable development everyone is a user and provider of information. It stresses the need to change from old sector-centered ways of doing business to new approaches that involve cross-sectoral co-ordination and the integration of environmental and social concerns into all development processes. Furthermore, Agenda 21 emphasises that broad public participation in decision-making is a fundamental prerequisite for achieving sustainable development.

Environmental sustainability is the process of making sure current processes of interaction with the environment are pursued with the idea of keeping the environment as pristine as naturally possible based on ideal-seeking behavior. Thus, environmental sustainability demands that society designs activities to meet human needs while indefinitely preserving the life support systems of the planet. This, for example, entails using water sustainably, only utilizing renewable energy, and sustainable material supplies (e.g. harvesting wood from forests at a rate that maintains the biomass and biodiversity).

An "unsustainable situation" occurs when natural capital (the sum total of nature's resources) is used up faster than it can be replenished. Sustainability requires that human activity only uses nature's resources at a rate at which they can be replenished naturally. Inherently the concept of sustainable development is intertwined with the concept of carrying capacity. Theoretically, the long-term result of environmental degradation is the inability to sustain human life. Such degradation on a global scale could imply extinction for humanity.

The Venn diagram of sustainable development has many versions, but was first used by economist Edward Barbier (1987). However, Pearce, Barbier and Markandya (1989) criticized the Venn approach due to the intractability of operationalizing separate indices of economic, environmental, and social sustainability and somehow combining them. They also noted that the Venn approach was inconsistent with the Brundtland Commission Report, which emphasized the interlinkages between economic development, environmental degradation, and population pressure instead of three objectives. Economists have since focused on viewing the economy and the environment as a single interlinked system with a unified valuation methodology (Hamilton 1999, Dasgupta 2007). Intergenerational equity can be incorporated into this approach, as has become common in economic valuations of climate change economics (Heal 2009). Ruling out discrimination against future generations and allowing for the possibility of renewable alternatives to petro-chemicals and other non-renewable resources, efficient policies are compatible with increasing human welfare, eventually reaching a golden-rule steady state (Ayong le Kama 2001, Endress et al. 2005). Thus the three pillars of sustainable development are interlinkages, intergenerational equity, and dynamic efficiency.

SUSTAINABLE TOURISM

Sustainable tourism is tourism attempting to make as low an impact on the environment and local culture as possible, while helping to generate future employment for local people. The aim of sustainable tourism is to ensure that development brings a positive experience for local people, tourism companies and the tourists themselves. Sustainable tourism is an adopted practice in successful ecotourism.Global economists forecast continuing international tourism growth, the amount depending on the location. As one of the world's largest and fastest growing industries, this continuous growth will place great stress on remaining biologically diverse habitats and indigenous cultures, which are often used to support mass tourism.

Global tourism impact is reduced to: 980 million people travelled internationally in 2011 and this is expected to reach 1.5 billion by 2020, The average international tourist receipt is over US$700 per person, Travel and tourism represents approximately 10% of total global Gross Domestic Product (GDP) (if it include tourism related business (eg catering, cleaning), The global travel and tourism industry creates approximately 10% of the world's employment (direct & indirect).

The impact of tourism on the environment is as follows: Buying local could achieve a 4-5% reduction in GHG emissions due to large sources of C02 and non C02 emissions during the production of food, The average Canadian household used 326 liters of water per day... a village of 700 in a developing country uses an average of 500 litres of water per month and a luxury hotel room guest uses 1800 litres of water per person per night, The average person in the UK uses approximately 150 litres of water per day - 3 times that of a local village in Asia, A species of animal or plant life disappears at a rate of one every three minutes, 70% of marine mammals are threatened, The Western world (with 17% of the worlds' population) currently consumes 52% of total global energy, 58% of the worlds coral reefs are at risk. 2010 was the warmest year on record, Seawater is expected to rise 70 cm in the next 10 years, By 2050 climate change could have directly led to the extinction of 30% of species, the death of 90% of coral reefs and the loss of half the Amazon rainforest, Half the world's population lives in urban areas and this figure is expected to increase. In Latin America and the Caribbean, 76% of the population live in urban areas, By 2036, there will be 1200 million cars on earth - double the amount today, For every 1 degree rise in temperature above 34 degrees Celsius, yields of rice, maize and wheat in tropical areas could drop by 10%, Every day we dump 90 million tons of carbon pollution into our atmosphere, Although 70% of the earth's surface is water, only 3% is potable.

Third World countries are especially interested in international tourism, and many believe it brings countries a large selection of economic benefits including employment opportunities, small business development, and increased in payments of foreign exchange. Many assume that more money is gained through developing luxury goods and services in spite of the fact that this increases a countries dependency on imported products, foreign investments and expatriate skills. This classic 'trickle down' financial strategy rarely makes its way down to benefit people at a grassroot level (Harrison, D., 1992 and Scheyvens, R., 1999.).

THE RURAL AREAS OF THE REPUBLIC SERBIA

According to theStrategy Plan forRural Development, 2009-2013, rural areas ofSerbia, depending on the methodology used, includingeven70-85% of the territory of Serbia andthey are home to43-55% of the total population. Froma total number of165 municipalitiesin Serbia, 130 municipalitiesare classified asrural. In these municipalities,there are3.904villages.Lowpopulation densityis oneof the important characteristicsof these areas. In ruralareasthe population densityis 63inhabitants persquare kilometer, which is less than the nationalaverage (97 per km2), and significantlylower than inurban areas(289 per km2) (Ministry of Agriculture, Forestry and Water Management ofSerbiain 2009).

Natural characteristics ofthese areasare ratedasverygood. Rural areas of Serbia arecharacterized by a largeconcentration of naturalresources (such as agricultural land, forests, water, etc..) with a preservedecosystems and biodiversity.The advantagesareits culturalresourcesandtraditions of the peoples. Natural and cultural resources, thehumanresources,are themost important elements ofthe ruralSerbia.

Averagerural tourism in Serbiais408.580overnight stays, orabout 6.2% of the total number ofovernight stays inSerbia.Domesticvisitorsrepresenting 98% of all visitors torural tourism in Serbia (Strategyof tourism developmentin Serbiaby 2015., 2006). Averageprices of accommodationin therural villageis 15euros, which meansthat the totalaverage incomeof rural tourismbasedaccommodationand catering facilities, approximately6.200.000 euros. According to the assessment strategy of tourism developmentin Serbiain 2015, rural tourism in Serbiawill comprise6.6%of the total numberof overnight stays. Totaltourism potentialwill amounta millionnights intherural tourism. The share offoreign guestsin totalnightswill constitute15%.

RURAL TOURISM IN CENTRAL SERBIA

Total incomeof rural tourismin CentralSerbia is characterized byrelative homogeneity. Income structureshows thatthe most commonhousehold income isfromaccommodation,meals, tastingsandsalesof domestic andcraft products.The relatively highincomegenerated fromtourist guidingin nature andthecultural -historical sites.

Income fromancillary servicesin the regionis very low. Sale ofarts and crafts andotherlocal productshad the averageincome of 18,44 euros per house hold, and an average of 6,11 euroswas achieved by tastingsof local products. Symbolically revenues of severaleurogeneratedfromtransportation of tourists, tourist guidingin nature andculture-historicalbuildings, camps, art galleries.

Tourist developmentexpressed innumberof overnight staysgrew by28%in 2010. Total incomeof households thatprovides housingand mealsin Central Serbiain 2010.yearwere 275.707 euro. Total incomeentrepreneursfrom providing servicesandproducts soldto tourists inthe regionwere 53.294,00 euro. This givesa total incomefrom rural tourismin Central Serbiaof329.000 euro. (Đurović D., Cvijić S., 2011).

REGIONAL RURAL TOURISM IN ŠUMADIJA AND POMORAVLJE

The structure of Sumadija and Pomoravlje includes two regions (Sumadijski and Pomoravski). Sumadija districtincludes the city of Kragujevac and the six municipalities: Aranđelovac, Batočina, Lapovo, Knić, Rača and Topola. The total area of the district is 2387km2,of which was835km2in City of Kragujevac, which is also thebiggest city inthe region (Sustainable Development StrategyŠumadijaand Pomoravlje2011). Sumadija districthas a population of298.778. The average population densityis 125inhabitants per km 2. Pomoravlje districtincludes the city of Jagodina and five municipalities: Despotovac, Paracin, Rekovac, Svilajnac and Cuprija. Pomoravljecontains a total of 2617 km2 and 227.435 populations. Pomoravlje districthas an average population density of 87st/km2 (Sustainable Development Strategy Sumadija and Pomoravlje 2011).

City of Kragujevac arethe largesttown in the Sumadija and Pomoravlje. Kragujevac is the administrative,economic, cultural,educationaland health centerin centralSerbia. Locatedin the centralpart of theRepublic Serbiaand the regionSumadijaand Pomoravlje,140 kmaway from Belgrade (capital city).

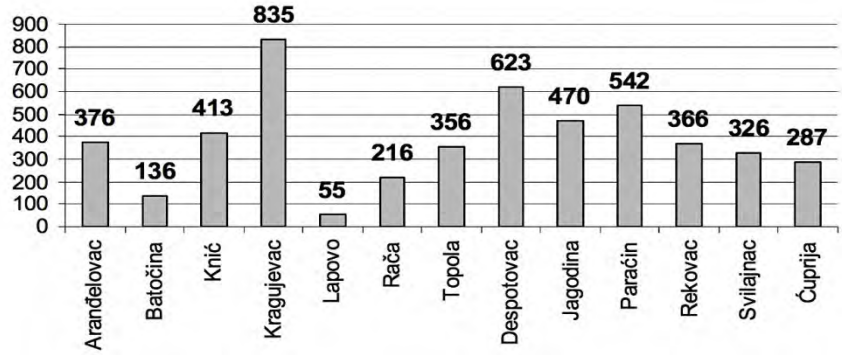

Figure 1.Overview area municipality's Šumadija andPomoravlje (in Km^2)

Source: Sustainable Development Strategy Šumadija and Pomoravlje 2011.

Šumadijaand Pomoravljehave naturalresourcesfor rural tourism development. The developmentof rural tourismis achievedrevitalizationof traditional andautochthonousvalues, with the range of activitiesincludes, services and additional content, organizedrural populationon family farms inorder to attracttourists andcreateadditionalrevenue, while respecting the principles ofsustainable development and conservationof natural resources.

Aspart of the tourismoffer in thefield of rural tourism, an important placehashunting. Mountainouslandscapescovered with forestsandclearingsare the idealgroundfor breedingand hunting. The rabbit isthe most commonwild animals

andis presentin allparts of the region.In addition tothe rabbitthere are alsoother types ofwildlife (partridge, quail, dove, pheasant and deer). In the rolling hillsishuntswild boar.

CHARACTERISTICS OF RURAL AREAS OF KRAGUJEVAC

City of Kragujevac areadministrative, economic, cultural, educationaland health center. Locatedin the centralpart of Serbia, inŠumadijadistrict,consisting ofsixmunicipalities: Aranđelovac, Batočina, Lapovo, Knić, Rača and Topola. Kragujevacis an industrial city, and a city withsignificant agriculturalland. It has atotal landholdings of83.475ha, than this number 63.9%isruralarea and36.1% of the territory belonging tothe urban area.

Table4.General information about the city of Kragujevac 2002.

	Area(km^2)	Share in total area (%)		
		City	Šumadija district	Serbia
Urban zone	301	35,05	12,60	0,34
Rural zone	534	63,95	22,36	0,60
City	835	100	34,97	0,94
Šumadija distr.	2388	/	100	2,70
Republic Serbia	88361	/	/	100

Source: National Institute of Statistics

Kragujevac has57 settlementsaverage sizeof14.65km2and62cadastral municipalities,the average sizeof13.48km2.The average size ofsettlementson the territory is 6%comapre to thevillagesin the district.

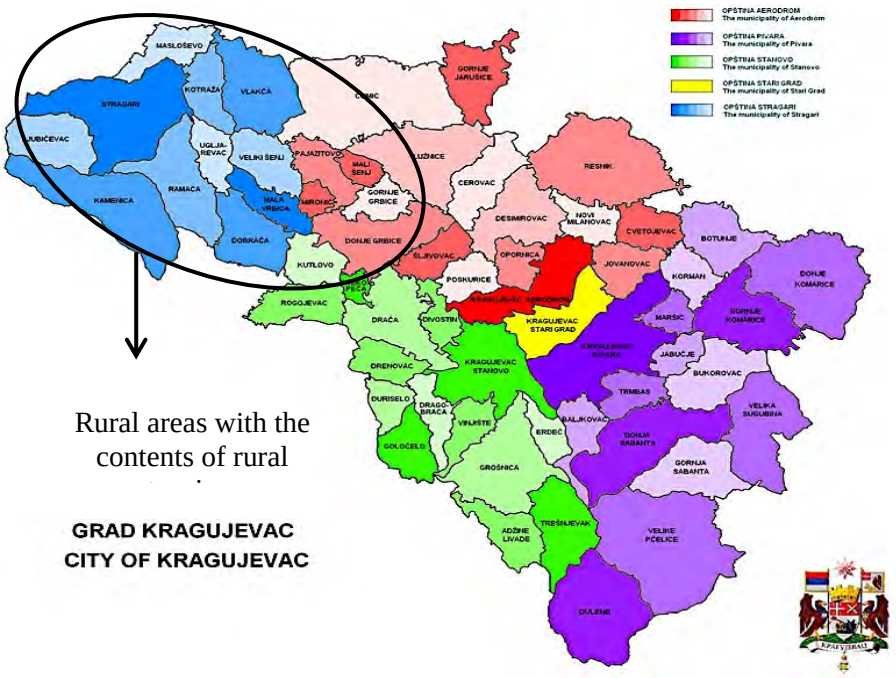

Figure 2.The City of Kragujevac map of the territorial divisions

The modifiedmapwith markedruraltourism

Source: Officialwebsiteof Kragujevac, http://www.kragujevac.rs/71-1-l

Villages are grouped according to geographical characteristics (hills, valleys, waterways and major roads). This is a typical Sumadijski landscape. Agriculture is the main activity of the population because the natural conditions are very good. In eight suburbs residents are also involved in agriculture. The rural area has nearly 30.000 inhabitants, 16.7% of the total number of inhabitants in the city of Kragujevac. From the total number 9.555 of rural households 7.110 owns registered farms.

The total agricultural area is 54.000 acres. Arable land is approximately 49.000 acres. Fields and gardens are present in an area of 34.000 hectares. Fruit orchards has 6.000 acres, 400 acres of vineyards and meadows occupy 7.000 acres (Živanović S., 2011).

In this rural area from 56 villages are produced per year in crop and vegetable (Živanović S., 2011):

- approximately 63.000 tons of cereals (wheat, barley, corn, oats, rye)
- approximately 3,300 tons of industrial crops (beets, soybeans and sunflower)

- approximately 18,000 tons of vegetables dominated potatoes, cabbage and tomatoes
- The annual production of the fruit is (Živanović S., 2011):
- approximately 14,000 tons (mostly plum 1.300.000 trees, or 10.000 tons which is 74% of the total amount of fruit)
- approximately 1.240 tons of apples and 660 tons of pear

On this territory annually produce approximately 5.600 tons of meat (mostly pork, beef, sheep, goat and poultry). Rural area of Kragujevac has great agricultural potential, but the main activity of the rural population is faced with many problems, including: small farms, uneven production, obsolete machinery, low yields, elderly households, insufficient professional organization of producers. It can be concluded from these data that agriculture is the main activity and the economic factor of the villagers in the vicinity of Kragujevac.

From 56 villages in the city of Kragujevac in 10 villages has potential and offer of rural tourism (table 5 and 6).

Table 5.Total number of households, population, average number of people per household, the number and percentage of rural population in the villages where there is a rural tourism

Number	Village name	Distancefrom KG (km)	Number ofhouseholds	Number of population	Average persons per house	Agricultural population	Percentage of rural population
1	Masloševo	35	132	478	3,44	241	50,4
2	Stragari	32	194	967	2,81	151	15,6
3	Kamenica	31	148	431	2,76	159	36,9
4	Ramaća	24	123	340	2,50	130	38,2
5	Vlakča	25	190	671	3,18	191	28,5
6	Veliki Šenj	25	84	350	4,12	292	83,4
7	Mala Vrbica	24	67	249	3,56	150	60,2
8	Kutlovo	18	63	236	3,43	128	54,2
9	Donje Grbice	11	148	557	3,53	298	53,5
10	Dulene	25	110	218	1,83	91	41,7

Source: Živanović S., (2011) Alphabet villages of Kragujevac, City Administration for Economic Resources, Department of Agriculture, str. 84

Table 6.Summary of agricultural land in the villages where there is rural tourism

Number	Village name	Agricultural areas (ha)							
		Arable surface (ha)					forest	pastures	total
		fields	orchards	vineyards	meadows	total			
1	Masloševo	437,73	201,43	26,67	18,27	684,10	145,20	17,98	894,54
2	Stragari	647,48	229,82	46,91	77,53	1001,8	1878,5	139,9	3121,3
3	Kamenica	664,57	204,94	8,60	190,06	1068,2	1432,2	162,44	2731,5
4	Ramaća	543,28	203,91	5,34	167,30	919,83	743,81	101,27	1835,2
5	Vlakča	634,09	255,68	31,79	130,24	1051,8	534,17	187,64	1880,4
6	Veliki Šenj	374,57	100,03	5,34	64,03	543,97	374,03	89,11	1044,7
7	Mala Vrbica	377,75	110,91	4,65	49,76	543,07	136,36	49,95	758,77
8	Kutlovo	429,89	90,79	5,64	67,10	593,42	132,13	66,09	826,12
9	Donje Grbice	860,39	145,91	42,43	73,45	1122,9	486,31	160,01	1848,8
10	Dulene	615,36	205,37	2,33	480,03	1303,1	896,45	310,94	2562,6

Source: Živanović S., (2011) Alphabet villages of Kragujevac, City Administration for Economic Resources, Department of Agriculture, str. 85.

From 56villagesof Kragujevac, 10 villagesareinvolved in rural turism. These villagesareconcentrated in thenorth-western partof Kragujevac city. Locatedbetweentheroad Kragujevac - Topola - Belgrade (old road toBelgrade) and Kragujevac - Gornji Milanovac.DistancevillagesfromKragujevacis from18km.up to 35 km.In terms of populationandterritoryare medium in size, exceptStragari(which belongs to the small town) andthere is asmaller percentage ofthe rural population.Agricultural householdsof this areadealing withmixedagricultural production(farming, horticulture, viticulture, livestock), showin table6.In this regionthere arelarge areas offorests, meadows and pastures.

Particular valueof this area isits historywith significantmonasteries: Voljavča, Blagoveštenje rudničko, Petkovica, Drača, Divostin and Vraćevšnica.Villages withrural tourismcontentsare groupedin a relativelysmall areawithin a radius of18 km. The secondlocalityis set insouth-eastern part of the city of KragujevacinmountainousGledić (Dulene village).

Table 7.Preview of categories and contents of rural tourism

No.	Village name (Number of households)	Beds number	Type of household, Category	The content of rural tourism
1	Masloševo (1)	15	vacation home 4stars	- access and good traffic connections - house with separate entrance - kitchen, living room - two bathrooms - yard, pool, pool for children, playground - old house decorated in ethnic style - organizing trips to nearby monasteries - sports and recreation: walking, health path, fishing, hunting, bird watching, biking, hiking - products that can be purchased: plum brandy, honey, cheese, cream cheese - training for growing truffles
2	Stragari (3)	4	apartments 4stars I category	- access and transport connections are excellent - kitchen, living room - one bathrooms - yard, pool - products that can be purchased: plum brandy, winter food, honey, cheese, home craft - sports and recreation: walking, fishing, hunting, hiking
		2	vacation home 3 stars I category	- access and transport connections are excellent - house with separate entrance - kitchen, living room - one bathrooms - decorated garden - organizing trips to nearby monasteries - products that can be purchased: plum brandy, winter food, honey, cheese, cream cheese - sports and recreation: walking, bicycling
		6	vacation home 4 stars I category	- access and good traffic connections - house with separate entrance - kitchen, living room - one bathrooms - using the spa water - sports and recreation: walking, bicycling,

				fishing, hunting, hiking - sale of rural products
3	Kamenica (1)	2	vacation home 4 stars I category	- access and good traffic connections - house with separate entrance - kitchen, living room - one bathrooms - organizing trips to nearby monasteries - sale of rural products
4	Ramaća (1)	7	vacation home 4 stars	- access and good traffic connections - house with separate entrance - kitchen, living room - one bathrooms - closed garage - garden with plum plantation - organizing trips to nearby monasteries
5	Vlakča (2)	5	vacation home 3 stars I category	- access and good traffic connections - house with separate entrance - kitchen, living room - one bathrooms - spacious garden - organizing trips
		12	apartments 4 stars I category	- access and transport connections are excellent - kitchen, living room, large terrace - magnificent view - two bathrooms - yard, pool
6	Veliki Šenj (1)	7	vacation home 3 stars II category	-access and transport connections are excellent - house with separate entrance - kitchen, living room - two bathrooms - decorated garden - live music - organizing trips to nearby monasteries
7	Mala Vrbica (1)	13	vacation home 4 stars	- access and good traffic connections - house with separate entrance - internet connection - kitchen, living room - six bathrooms, underfloor heating - old house, ethnographic museum - spacious yard with modern pool - gym, a video library, closed garage
8	Kutlovo	5	vacation	- access and good traffic connections

	(1)		home 4 stars	- house with separate entrance - kitchen, living room - one bathrooms - spacious yard with modern pool, small playground - horse farms, horse training, rental horses - organizing trips with horse-drawn carriages - organization of hunting
9	Donje Grbice (1)	4	vacation home 2 stars	- not active
10	Dulene (1)	2	vacation home 3 stars II category	- access to transport connections and low - house with separate entrance - kitchen, living room - one bathrooms

The tourist offer inmentioned13rural householdsengaged in ruraltourismin this areaisbased on the followingelemet:

- Access andtransport linksare good orexcellent.
- Rural tourismhouseholds havehouses for rent.
- Classification ofobjects are from the secondcategory (three stars) to thefirst class(four-star).
- Yardsaredecoratedwithappropriateartifactsobjects .
- There are conditionsforrecreational activities- playgroundsfor various sports, swimming pools(a total of5 pools).
- The total capacity: 7of households have2 to5 beds; 3 householdsfrom 6 to10 bedsand3 householdsfrom 10 to15beds, making a total of84 beds.
- In some ruralhouseholdsofferings aremore complete: onerural householdhasa horse farm, there is atrainingride, horseback ridingandtoursinhorse-drawn carriages. Possibility of training forparaglidingflight.
- Allhouseholdsare offeredtours ofthe environment,visiting monasteries, walking and hikingtours, cycling toursandnature walks.
- In onehouseholdthere istrainingin the cultivation ofmushrooms (truffles).
- Offerfoodis mainly basedon theboard or half board.
- There isalso an offer forarranginghunting and fishing.

ECONOMIC EFFECTS AND FINANCIAL BENEFITS

Analyze the economic effects of rural tourism is necessary to have relevant information about utilization (number of nights) in households that receive tourists. According to the City Tourism Organization (GTO) number of overnight stays in 2010. year is about 30, in 2011. year is about 100 in 2012. year is about 200. Data are not published because most households do not report the tourists.

According to data from the seminar on rural tourism it was stated that of 955 households engaged in rural tourism in Serbia for about 250 households is the primary activity (not engaged in agriculture). With the number of nights from 700 to 1200 profit is from 4,000 to 10,000 euro.

CONCLUSION

Rural areaof Kragujevachasnatural; ethnic, cultural and historicalresourcesfor the developmentof rural tourism. Kragujevac is currently less developed than neigh boring regions with similartourist values. The development of rural tourism in the vicinity of Kragujevac datingsince 2009.

Ruraltourism cancontribute significantly tothe overall development ofthe villages inthe vicinity of Kragujevacand thetransformationof the physiognomyof villages. It canhave a positive influenceon theimprovement of infrastructure and increased standardof living inrural areas,the preservation andimprovement of the environment, natural resources andincreasethe economic viabilityof rural households andtheir appearancein the competitionmarkettourism.

Current offers ofrural tourismare positionedon a narrowterritory(nearStragari), but there is interestfrom other villages.

Uniquenatural, ethnic,cultural andhistorical siterequiresconnections established withthe wholeregion andpromotelocal initiativesfor the use ofcultural and historicalheritageto promotetourism in this area.

ConnecttheLeader andLAGprinciplesare importantfor the preparationfor the moment whenSerbia will beavailableEU funds.

REFERENCES

[1] Ayong Le Kama, A. D. (2001)Sustainable growth renewable resources, and pollution. Journal of Economic Dynamics and Control 25(12): 1911–1918.

[2] Barbier, E. (1987)The Concept of Sustainable Economic Development. Environmental Conservation 14(2): 101–110.

[3] Bessiere J., (1998) Local development and heritage: traditional food and cuisine as tourist attractions in rural areas, Sociological Ruralis vol. 38 no. 1

[4] Dasgupta, P. (2007)The idea of sustainable development. Sustainability Science 2(1): 5–11.

[5] Đurović D., Cvijić S., (2011) Rural tourism as a factor of rural development; Sustainable Tourism for Rural Development, Group Development Initiative

[6] Eco Certication Program (2012) Ecotourism Australia

[7] Endress, L. Roumasset, J. Zhou, T. (2005)Sustainable Growth with Environmental Spillovers. Journal of Economic Behavior and Organization 58 (4): 527–547.

[8] FOC, 2002, WTO, 2000 & 2002, UNWTO, 2011, www.risingtide.co.uk, 2004, UN, 2003, Gov't of Canada, 2005, Tourism Concern, 2011, Science Msusuem, 2006, Reefs at Risk, WRI,2011, Journal of Environmental Science and Technology, 2011.

[9] Garrod, B., Wornell, R. and Youell, R. (2006)Re-conceptualizing rural resources as countryside capital: Thecase of rural tourism, Journal of Rural Studies, vol. 22,117–128

[10] Garrod, B., Youell, R. and Wornell, R. (2004) Links Between Rural Tourism and Countryside Capital. Cheltenham: Countryside Agency

[11] Hamilton, K. Clemens, M. (1999)Genuine savings rates in developing countries. World Bank Econ Review 13(2): 333–356.

[12] Harrison, D., (1992)International Tourism in the less developed countries. Chichester: Wiley. pp. 1–18.

[13] Heal, G. (2009)Climate Economics: A Meta-Review and Some Suggestions for Future Research. Review of Environmental Economics and Policy 3(1): 4–21.

[14] Hunziker, W and Krapf, K (1941) Tourism as the sum of the phenomena and relationships arising from the travel and stay of non-residents. Publications AIEST Association International Experts Scientific Tourism.

[15] IISD Conference (2007)Concluding session, Ottawa.

[16] Kabir S, Akther R , Xuexi H : The Role of Rural women in Local Governance: Case study on socio-economic context in Bangladesh International Review (2012 No.1-2) pp. 47. ISSN 2217-9739, COBISS.SR-ID 192516620

[17] Mašić, Z., Radotic F. (2012) Environmental education through epa training analysis, Internacional conference of employment, education and entrepreneurship

[18] McMillian L: Gender, Organizational Behavior &, Organizational Culture: What Studies Tell Us About How Women Lead in Business, International Review (2012 No.1-2) pp. 33. ISSN 2217-9739, COBISS.SR-ID 192516620

[19] Mićić M. (2007) Tourism and space, Singidunum University, Faculty of Tourism and Hotel management, Belgrade., str. 171.

[20] Miletić, R. and Todorović, M. (2003). Ecotourism and Complementary Activities as a Possibility of Including in the Development Procces, Beograd. Geograpical Institute Jovan Cvijic.

[21] Ministry of Agriculture, Forestry and Water Management of Serbia (2013)National Rural Development Programme Serbia 2009.

[22] Ministry of Agriculture, Forestry and Water Management of Serbia (2009) Results of the survey on the effects of the measures to promote rural tourism in Serbia and diversification of economic activities in rural areas.

[23] Ministry of Agriculture, Forestry and Water Management of Serbia (2006) Strategyof tourism developmentin Serbiaby 2015.

[24] Pearce, D. Markandya, A. Barbier, E. (1989)Blueprint for a green economy. London.

[25] Scheyvens, R., (1999) Ecotourism and the Empowerment of Local Communities. Tourism Management 20: 245–249.

[26] Slee, B. (2003) Countryside capital: what's the interest? Inaugural professorial lecture. University of Gloucestershire. Countryside and Community Research Unit

[27] Smolčić, J., (2006) Indicators of Sustainability in Tourism, Simpozijum Turizam i hotelska industrija, Opatija, Univerzitet u Rijeci

[28] Sustainable Development Strategy Šumadija and Pomoravlje 2011 - 2021 (2011), Regional Agency for Economic Development

[29] UNESCO (2009)Culture and sustainable development: examples of institutional innovation and proposal of a new cultural policy profile, tudy commissioned by the Division of Cultural Policies and Intercultural Dialogue of UNESCO to the Institutte for culture, Barcelona City Council, as Chair of the Committee on culture of United Cities and Local Governments (UCLG).

[30] Živanović S., (2011) Azbučnik kragujevačkih sela, Gradska uprava za privredne resurse, odeljenje za poljoprivredu.

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PART THREE

GENETICALLY MODIFIED AND ORGANIC CROPS PRODUCTION

GENETICALLY MODIFIED FOOD: AN OVERVIEW

***Tatjana Papic Brankov*[64]**
***Koviljko Lovre*[65]**

Abstract: Uncertain and unfinished genetic engineering (GI) technology has entered our lives, it won the food market of several countries and tend to occupy the global food chain. In this paper, we analyze the reasons why and the ways in which agricultural multinational companies placed genetically modified (GM) foods, the product of this technology on the market and how control of the food industry extends practically "from field to fork.**"**

Key words: GI technology, GM food, Multinational Companies, Market, Control

JEL classification: Q13

UDC 606:604.6

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INTRODUCTION

Although a food which is obtained from genetically modified (GM) plants, is involved in a food market chain, there is a large disagreement in the expert circles about ecology, sanitary and socio-economic consequences of using GM food. The GM foods controversy is a dispute over the relative advantages and disadvantages of food derived from genetically modified organisms (GMO), GM crops used to produce food and other goods, and other uses of GMO in food production. The dispute involves consumers, biotechnology companies, governmental regulators, non-governmental organizations and scientists. The key areas of controversy related to genetically modified (GM) food are: risk of harm from GM food, whether GM food should be labeled, the role of government regulators, the effect of GM crops on the environment, the impact of GM crops for farmers, including farmers in developing countries, the role of GM crops in feeding the growing world population, and GM crops as part of the industrial agriculture system.

GM food marketing was followed the affirmative study in which, among other things, claimed that: there is no occurrence of adverse effects on nutrient composition, body weight, feed conversion, milk production, fermentation, growth and carcass characteristics of feeding dairy cows, beef cattle, pigs and poultry with GM soy and corn herbicide tolerant and/or resistant to insects, from 35 days to two years; coming to improving the level of feed conversion in animals fed corn resistant to insects, probably due to lower aflatoxin content (MacKenzie et al., 2002, pp. 16-19). In the past few years there's been real small revolution. It has been confirmed prof. J. Domingo allegation published in the prestigious journal *Science* that by the exhaustive search database found a small number of published peer-reviewed scientific papers related to the issue of GM food safety, the majority of them published by Monsanto. He claim also that serious research are not conducted, but in the form of articles are cited the results of conservative Heritage Foundation, American Enterprise Institute, Kete Cato Institute, Brookings Institute (Domingo, 2000, pp. 1748–1749). We're on our knowledge of harmful effects of consumption of a food, which is in accord with isolated critical studies from the previous period which indicated that: many studies were commercial, not scientific. According to recent studies it can be concluded that GM foods are potentially causing serious environmental and health consequences.

Possible negative consequences to environment are: 1) Biodiversity can be threatened; 2) Genes can be transferred to other crops or wild relatives; 3) The properties of non-target species can be changed; 4) The health of soil can be impair; 5) Super weeds and super insect resistance to pesticides (herbicides and insecticides) can occurs; 6) GM animal can mate with wild relatives and 7) Environment can be stressed due to changes of production measures (Papic Brankov, 2013, pp.58).

Possible health consequences are: 1) Increase of allergens and toxins in GM foods ; 2) The development of antibiotic-resistant bacteria; 3) Increased mortality; 4) Increased sterility, 5) Reduced sexual behavior; 6) Encourage the development

of cancer; 7) Frequent miscarriages and premature births; 8) Toxic effects on the kidneys and liver, heart, adrenal gland, and hematopoietic system; 9) increased aggressiveness; 10) Especially dangerous in newborns can lead to autism (Ermakova, 2006, pp. 168-171; Finamore, 2008, pp. 11533–11539; Seralini, 2007, pp. 596–602; Vendômois et al., 2009, pp. 706–726).

Therefore, we may rightly ask how and why insecure technology marketed and how GMO got into the food chain. Multinational companies producers of GM foods have conquered the market thanks to: Public Relations (PR) industry, close relations with the U.S. government apparatus, huge investments in research and development, the international community which has approved patenting of artificially constructed gene and GM plants, international organizations, notably the World Trade Organization (WTO), foundations, some scientists and scientific institutions, as well as support systems in the form of organization of direct promoter of biotechnology.

GLOBAL STATUS OF COMMERCIALIZED BIOTECH/GM CROPS

The first GM plant has been approved for commercial cultivation in 1994 was a tomato "Flavr Savr", with reduced (99 per cent) activity of the gene for the enzyme polygalacturonase. This enzyme is produced in tomato fruit after ripening and causes rapid softening (Papic Brankov, T., 2013, pp. 26). Although Calgene company, its manufacturer was withdrawn it from the market in 1997 "Flavr Savr" remained one of the main symbols of the GI (Fifure 1)

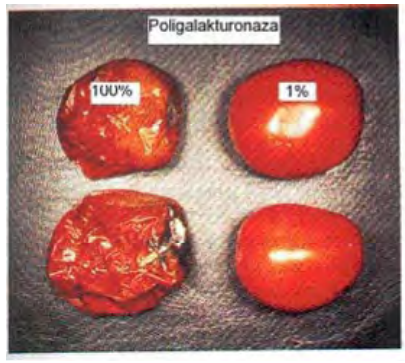

Figure 1. "Flavr Savr"

Source: Papic Brankov, T., 2013.

2012 was the 17th year of commercialization of biotech crops, 1996-2012, when growth continued after a remarkable 16 consecutive years of increases. A record 170.3 million hectares of biotech crops were grown globally in 2012, at an annual growth rate of

6%, up 10.3 million from 160 million hectares in 2011. A 100-fold increase in biotech crop hectarage from 1.7 million hectares in 1996 to 170 million hectares in 2012 makes biotech crops the fastest adopted crop technology in the history of modern agriculture (Table 1a,b,c). Of the 28 countries which planted biotech crops in 2012, 20 were developing and 8 were industrial countries. The top 10 countries each grew more than 1 million hectares.

Table 1a. GM crops producers, 1996-2012, million ha

Country	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
USA	1,5	8,1	20,5	28,7	30,3	35,7	39,0	42,8	47,6	49,8	54,6	57,7	62,5	64,0	66.8	69.0	69.5
Argentina	0,1	1,4	4,3	6,7	10,0	11,8	13,5	13,9	16,2	17,1	18,0	19,1	21,0	21,3	22.9	23.7	23.9
Brazil	--	--	--	--	--	--	--	3,0	5,0	9,4	11,5	15,0	15,8	21,4	25.4	30.3	36.6
Canada	0,1	1,3	2,8	4,0	3,0	3,2	3,5	4,4	5,4	5,8	6,1	7,0	7,6	8,2	8.8	10.4	11.6
China	--	0,0	<0,1	0,3	0,5	1,5	2,1	2,8	3,7	3,3	3,5	3,8	3,8	3,7	3,5	3.9	4.0
Paraguay	--	--	--	--	--	--	--	--	1,2	1,8	2,0	2,6	2,7	2,2	2,6	2.8	3.4
India	--	--	--	--	--	--	<0,1	0,1	0,5	1,3	3,8	6,2	7,6	8,4	9,4	10.6	10.8
South Africa	--	--	<0,1	0,1	0,2	0,2	0,3	0,4	0,5	0,5	1,4	1,8	1,8	2,1	2,2	2.3	2.9
Uruguay	--	--	--	--	<0,1	<0,1	<0,1	0,1	0,3	0,3	0,4	0,5	0,7	0,8	1,1	1.3	1.4
Bolivia	--	--	--	--	--	--	--	--	--	--	--	--	0,6	0,8	0,9	0.9	1.0

Source: (James, 2006, 2007, 2008, 2009, 2010, 2011, 2012)

Table 1b. GM crops producers, 1996-2012, million ha

Country	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Australia	<0,1	0,1	0,1	0,1	0,2	0,2	0,1	0,1	0,2	0,3	0,2	0,1	0,2	0,2	0,7	0.7	0.7
Mexico	<0,1	<0,1	0,1	<0,1	<0,1	<0,1	<0,1	<0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0.2	0.2
Romania	--	--	--	<0,1	<0,1	<0,1	<0,1	<0,1	0,1	0,1	0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1
Philippines	--	--	--	--	--	--	--	<0,1	0,1	0,1	0,2	0,3	0,4	0,5	0.5	0.6	0.8
Spain	--	--	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	0,1	0,1	0,1	0,1	0,1	0,1	0.1	0.1	0.1
Colombia	--	--	--	--	--	--	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1
Iran	--	--	--	--	--	--	--	--	--	<0,1	<0,1	--	--	--	--	---	--
Honduras	--	--	--	--	--	--	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1
Portugal	--	--	--	<0,1	--	--	--	--	--	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1
Germany	--	--	--	--	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	--	<0,1	<0,1	--

Source: (James, 2006, 2007, 2008, 2009, 2010, 2011, 2012)

Table 1c. GM crops producers, 1996-2012, million ha

Country	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
France	--	--	<0,1	<0,1	<0,1	--	--	--	--	<0,1	<0,1	<0,1	--	--	--	--	--
Czech Republic	--	--	--	<0,1	--	--	--	--	--	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1
Bulgaria	--	--	--	--	<0,1	<0,1	<0,1	<0,1	--	--	--	--	--	--	--	--	--
Indonesia	--	--	--	--	--	<0,1	<0,1	<0,1	--	--	--	-	--	--	--	--	--
Ukraine	--	--	--	<0,1	--	--	--	--	--	--	--	-	--	--	--	--	--
Slovakia	--	--	--	--	--	--	--	--	--	--	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1
Poland	--	--	--	--	--	--	--	--	--	--	--	<0,1	<0,1	<0,1	<0,1	<0,1	--
Chile	--	--	--	--	--	--	--	--	--	--	--	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1
Burkina Faso	--	--	--	--	--	--	--	--	--	--	--	--	<0,1	0,1	0.3	0.3	0.3
Egypt	--	--	--	--	--	--	--	--	--	--	--	--	<0,1	<0,1	<0,1	<0,1	<0,1
Costa Rica	--	--	--	--	--	--	--	--	--	--	--	--		<0,1	<0,1	<0,1	<0,1
Sweden															<0,1	<0,1	---
Myanmar															0,3	0.3	0.3
Pakistan															2,4	2.6	2.8
Sudan																	<0,1
Cuba																	<0,1
Total (Table 1a+1b+1c)	**1,7**	**11,0**	**27,8**	**39,9**	**44,2**	**52,6**	**58,7**	**67,7**	**81,0**	**90,0**	**102,0**	**114,3**	**125,0**	**134,0**	**148,0**	**160.0**	**170.3**

Source: James, 2006, 2007, 2008, 2009, 2010, 2011, 2012

From the very beginning the U.S. are the absolute leader in the production of GM crops. In the first year of commercial cultivation of GM crops U.S. accounted for more than 88 %. In 2001, after five years of growing share of this country was 67.9 %, in 2006 U.S. share was 53.53%, while in 2012 the U.S. accounted for 40.8 % of the total area under GM crops. In fact, U.S. involvement is gradually decreased with the inclusion of other countries in the production of biotech crops.

After 13 years Brazil has replaced Argentina on the second manufacturer's position. Now, Brazil produces 21.5 percent of all biotech crops. India has become the largest exporter of cotton, and the second largest producer of cotton in the world. Involvement in the production of Burkina Faso and Egypt, in 2008, symbolize a shift in the diffusion of this technology on the African continent.

In the second year of cultivation, area under GM crops increased almost 5.5 times compared to the first year. In the third year, compared to the previous one a rise was 150 per cent, while in the fourth year of commercialization increase was 40 pe rcent. In the fifth, breakeven year's growth (2000) it was been registered an increase of only 10 pe rcent, caused by the EU moratorium on the importation of transgenic plants, which affected planting plans of American farmers. Then, in the following years it can be recorded a trend rate of 19 per cent, 11 per cent, 15 per

cent, 20 per cent, 11 per cent, 13 per cent and 12 per cent in 2007 compared to 2006 year. Lowest growth rate recorded in 2008 (9.3 per cent), 2009th year (7.2 per cent) and 2010 (10.4 per cent), most likely due to the record high price of GM seed and technology fees. The downward trend continues, annual growth rate was 8 percent in 2011, and only 6 percent in 2012.

The five largest GM developing countries: Brazil, Argentina, India, China and South Africa enjoyed strong political support from their government, which provides financial support and "easy" legislation. This policy resulted in the 46 per cent share of developing countries in global GM surfaces. In 2010, three states for the first time began with the production of GM plants: Pakistan (cotton), Myanmar (cotton), and Sweden (potatoes). Two new countries, Sudan (Bt cotton) and Cuba (Bt maize) planted biotech crops for the first time in 2012. So the Sudan became the fourth country in Africa, after South Africa, Burkina Faso and Egypt, which commercialize a biotech crop. For the first time, farmers in Cuba grew 3,000 hectares of hybrid Bt maize in a "regulated commercialization" . The Bt maize, with resistance to the major pest, fall armyworm, was developed by the Havana-based Institute for Genetic Engineering and Biotechnology (CIGB) (James, 2012).

Five EU countries (Slovakia, Romania, Czech Republic, Spain and Portugal) planted a record 129,071 hectares of biotech Bt maize, up 13% from 2011. Spain led the EU with 116,307 hectares of Bt maize, up 20% from 2011. Unfavorable situation for GM crops planting occurs in some other EU countries. In 2012 Germany and Sweden could not plant the biotech potato, Amflora because it ceased to be marketed; Poland discontinued planting Bt maize because of regulation inconsistencies in the interpretation of the law on planting approval between the EU and Poland; the EU maintains that all necessary approvals are already in place for planting whereas Poland does not.

In terms of available land, the most widely used commercial GM crop plants in the world are: soybeans, corn, cotton and canola (Table 2), and most GM traits are herbicide tolerance and insect resistance, or a combination of these two traits (Table 3).

Table 2. Adoption by crop (1996-2012), million hectares

GM crops	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Soybean	0,5	5,1	14,5	21,6	25,8	33,3	36,5	41,4	48,4	54,4	58,6	58,6	65,8	69,0	73,3	75.4	80.7
Maize	0,3	3,2	8,3	11,1	10,3	9,8	12,4	15,5	19,3	21,2	25,2	35,2	37,3	42,0	46,8	51.0	55.2
Cotton	0,8	1,4	2,5	3,7	5,3	6,8	6,8	7,2	9,0	9,8	13,4	15,0	15,5	16,0	21,0	24.7	24.3
Canola	0,1	1,2	2,4	3,4	2,8	2,7	3,0	3,6	4,3	4,6	4,8	5,5	5,9	6,4	7,0	8.2	9.2
Pumpkin	--	--	0,0	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1
Papaya	--	--	0,0	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1
Potato	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	--	--	--	--	--	--	--	--	--		.....
Sugar beet	--	--	--	--	--	--	--	--	--	--	--	--	0,3	0,5	--	0.5	0.5
Alfalfa																	0.4
UKUPNO	1,7	11,0	27,8	39,9	44,2	52,6	58,7	67,7	81,0	90,0	102,0	114,3	125,0	134,0	148,0	160,0	170,3

Source: James, 2006, 2007, 2008, 2009, 2010, 2011, 2012

Table 3. Adoption by trait (1996-2012), million hectares

Trait	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Herbicide tolerance	0,6	6,9	19,8	28,1	32,7	40,6	44,2	49,7	58,6	63,7	69,9	72,2	79,0	83,6	89,3	93.9	100.4
Insect resistance	1,1	4,0	7,7	8,9	8,3	7,8	10,1	12,2	15,6	16,2	19,0	20,3	19,1	21,7	26,3	23.9	26.3
Stacked	--	<0,1	0,3	2,9	3,2	4,2	4,4	5,8	6,8	10,1	13,1	21,8	26,9	28,7	32,3	42.2	43.7
Otpornost na viruse/ Ostalo	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1
UKUPNO	1,7	11,0	27,8	39,9	44,2	52,6	58,7	67,7	81,0	90,0	102,0	114,3	125,0	134,0	148,0	160,0	170.3

Source: James, 2006, 2007, 2008, 2009, 2010, 2011, 2012

The most important GM crops from the first commercialization is soybeans, accounting for 50 percent of the total acreage in 2010. Roundup Ready soybeans (herbicide tolerant) feature the fastest, ever recorded, the diffusion of new agricultural technology. American farmers is widely accepted, so it's only two years later accounted for 57 percent of the total area under soybean. The total area under soybean increased 161 times in the the sixteen-year period. Global adoption rate of total world production of (conventional + transgenic strain) was 36 percent in 2000, five years later 60 percent, in 2007 was 67 percent, in 2009 77 percent, in 2010 81 percent. Current GM soybean producers are the U.S., Brazil, Argentina, Canada, South Africa, Mexico, Paraguay, Uruguay, Bolivia, Chile and Costa Rica.

The second most important GM crop is corn. Unlike GM soy crops that have built only one GM trait – herbicide tolerance, GM maize varieties are created to be tolerant to herbicides and/or resistant to insects, or carry one or both of the GM traits. Transgenic corn in 2012 are produced in the U.S, Brazil, Argentina, Canada, South

Africa, Paraguay, Uruguay, the Philippines, Spain, Chile, Honduras, Czech Republic, Portugal, Romania, Egypt, Slovakia and Cuba. It is produced in a number of countries than the GM soy, but with a smaller share of the total acreage. Last year GM cotton herbicide tolerant and/or resistant to insects are produced in U.S., Brazil, Argentina, India, China, Paraguay, Pakistan, South Africa, Australia, Myanmar, Burkina Faso, Mexico, Colombia, Sudan and Costa Rica. Transgenic canola, tolerant to herbicides are produced in the U.S., Canada, Australia and Chile.

Another way to provide a global perspective of the status of biotech crops is to characterize the global adoption rates as a percentage of the respective global areas of the four principal crops – soybean, cotton, maize and canola, in which biotechnology is utilized. According to data from 2010, 81% of the soybean planted globally were biotech (Figure 2). Biotech cotton was planted in 64% of the global cotton areas. Biotech maize occupied 29% of global maize area, while GM canola occupied 23% out of total canola areas. The situation has changed significantly two years later for cotton, maize and canola, while the global adoption rate for soybeans unchanged. Biotech cotton was planted to 24.3 million hectares, which is 81% of the 30 million hectares of global cotton. Of the 159 million hectares of global maize planted in 2012, 35% or 55.1 million hectares were biotech maize. Finally, herbicide tolerant biotech canola was planted in 9.2 million hectares or 30% of the 31 million hectares of canola grown globally in 2012. 81% (80.7 million hectares) of the 100 million hectares of the soybean planted globally were biotech the same as in 2010 (James, 2012).

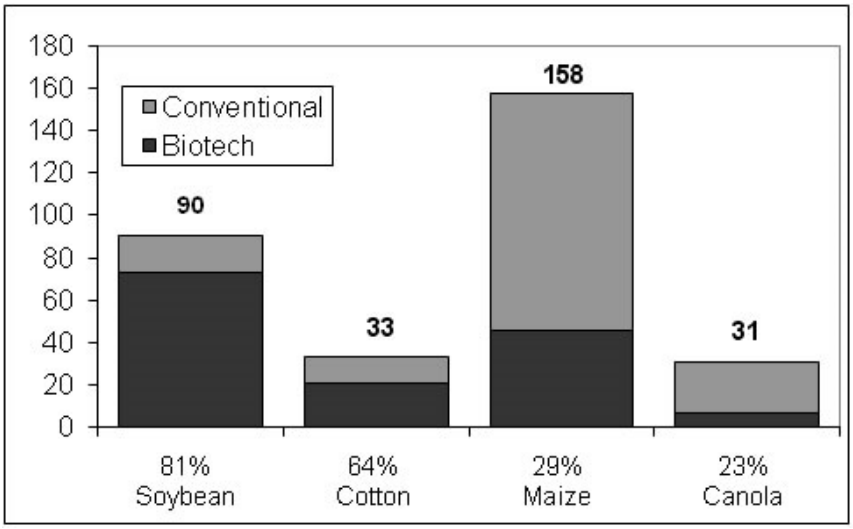

Figure2. Global adoption rate in 2010

Source: James, 2010

The stacked genes were the fastest growing trait group between 2010 and 2011 at 31% growth, compared with 5% for herbicide tolerance and –10% for insect resistance. Around 43.7 million hectares equivalent to 26% of the 170 million hectares were stacked in 2012, up from 42.2 million hectares or 26% of the 160 million hectares in 2011.

PUBLIC RELATIONS

Investor confidence is crucial for the development of multinational companies. Market value of the company, among other determines the value of the shares on the stock market, which often varies depending on the subjective evaluation and emotion. For instance, after the disclosure of the affair misrepresenting the effectiveness of experimental drugs Marimastat, against cancer and Zacutex against pancreatitis the value of British biotech corporations Biotech fell down from two billion pounds to just 330 million pounds. In the period 1970 -1997 the total investment in biotechnology research (not just GI) are around 60 billion US$, and only in 2000, investment in biotechnology has reached top 38 billion US$, fueled by the promise of mapping the human genome. Just a year later, when it became clear that might be years before the discovery contribute to the treatment of people, interest in biotechnology began gradually to decline, and investment were reduced more than three times to 11 billion US$. This is why companies invest a lot in PR. PR is the practice of managing the spread of information between an individual or an organization and the public[66]. PR may include an organization or individual gaining exposure to their audiences using topics of public interest and news items that do not require direct payment[67].The aim of PR by a company often is to persuade the public, investors, partners, employees, and other stakeholders to maintain a certain point of view about it, its leadership, products, or of political decisions. Common activities include speaking at conferences, winning industry awards, working with the press, and employee communication. Every year, corporations are investing billions of dollars in PR industry which present them in a favorable light. Brochures, websites and publishing of corporations give the impression of genuine interest in the planet and the general welfare. For instance, Dow AgroSciences points out that the improvement of people's lives is their most important mission[68], DuPont create sustainable solutions needed for better, safer and healthier lives[69], Monsanto apply innovation and technology to help farmers produce healthier foods and better feed[70]. In accordance with the terms frequently used such as "transparency", "democracy", "profit sharing", "dialogue" and "respect", PR industry calling the opposition (social organizations and NGOs) in

[66] *Grunig, James E. and Hunt, Todd. Managing Public Relations. (Orlando, FL: Harcourt Brace Jovanovich, 1984)*
[67] *Seitel, Fraser P. The Practice of Public Relations. (Upper Saddle River, NJ: Pearson Prentice Hall, 2007), 10e.*
[68] *www.dowagro.com/about/who/mission.htm*
[69] *www2.dupont.com/Our_Company/en_US/glance/vision/index.html*
[70] *www.monsanto.com/monsanto/layout/*

dialogue. These dialogues contribute to a better understanding of the problem, as well as isolation of "radical" opponents, who are characterized as disinterested and difficult to deal with. The dialogues contribute to informing the argument of the opponents and facilitate appropriate responses (Papic Brankov, 2013, pp. 30). There are a number of PR strategies, which are used for different purposes, in different circumstances, and the most important are: changing the name of the company, association, involvement of independent individuals and institutions, apologies and promises.

Changing the name of the company or association is also used to disguise the controversial past of today's most important companies producers of GM foods. These companies were involved in the action against human life and serious environmental disaster. For instance, Monsanto, Ciba-Geigy and the Dow produced dichlorodiphenyltrichloroethane (DDT) and other extremely harmful pesticides and defoliant chemicals such as gelatin gasoline, polychlorinated biphenyl, Agent Orange. IG Farben Hoechst, BASF, Bayer and Agfa were producing poison gas and forced the inmates of Auschwitz (83,000 inmates) to forced labor. The surviving inmates are still under litigation with the company IG Farben. Union Carbide Corporation (after sales and acquisitions have become the Dow and Aventis and Bayer) is responsible for the death of hundreds people and suffering of 140,000. There are many such examples (Papic Brankov, 2013, pp. 31).

Companies sometimes resort to apologies and promises. After the statement R. Shapiro, chief executive of Monsanto Company, in 1999 that the probable causes of public resistance to GMOs are aggressive campaign that irritate the masses, Monsanto has promised: not to commercialize Terminator seeds; to respect others' views; to share their research with the universities; to respect the laws of the U.S. and to qualify only products approved the competent institution the U.S., Europe and Japan. Similarly promised Dupont (Thayer, 1999, pp.44). Who are the proponents of GI? Their selection is one of the most important strategies of PR industry. A good candidate should be professionally well known (at least in own country), if a politically not engaged, it is advisable to have connection with industry and the state apparatus. Proponents of GI in his articles and speeches often make points against the Kyoto agreement (the main objective of the Agreement is to reduce gas emissions in the atmosphere) and the organic food (food which does not contained artificially synthesized substances).

INVESTMENT AND PATENTING

Analyzes of the investment of public and private sectors in research and development of agricultural biotechnology, points to the dominant role of the private sector. Dominance of the private sector is reflected in the total investment, the implementation of field trials, as well as the number of commercial crops (Papić-Brankov et al., 2011, pp. 30-36). There are large differences in research investment between developing and developed countries. The private sector in

developed countries spent on research six times more than the public sector in developing countries, even although calculating all public funds: national, donors and Consultative Group on International Agricultural Research-CGIAR). Only 8-9% of the world's plant biotechnology funds for research and development are spent in developing countries. In addition, only a few developing countries have the resources to create an independent source of biotechnological innovations. Although the total cost for biotechnology research are divided fairly evenly between the public and private sector, production of new technology is almost entirely in the hands of the private sector. With the exception of crops created in China and Cuba the private sector has developed all GM crops (sugar beets, canola, papaya, chicory, melon, pumpkin, soybean, cotton, sunflower, lentils, flax, tomato, alfalfa, tobacco, rice, potatoes, wheat and maize).

The private sector rarely invested in plant research sixties, seventies and eighties years of the last century, especially in developing countries that lacked an effective mechanism for intellectual property protection. Then-product of the investigations were public goods with non-competitive and non-exclusive character which can benefit the society regardless of income creator. Seed industry in the mid-eighties, due to the economic viability of hybrids pollinated species (e.g. maize), has activated in the developing world, first through multinational companies from developed countries, and then via the national company when formed. Further incentive for private sector investment in agricultural research have given the U.S. and other industrial countries granting patents of artificially constructed genes and GM crops. National protection was strengthened in 1995 with the adoption of The Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS). It was negotiated at the end of the Uruguay Round of the General Agreement on Tariffs and Trade (GATT) in 1994. The TRIPS agreement introduced intellectual property law into the international trading system for the first time and remains the most comprehensive international agreement on intellectual property to date. Specifically, TRIPS requires World Trade Organizations (WTO) members to provide (utility) patent protection for any inventions in all fields of biotechnology. Inventions related to biological materials, such as genes and gene sequences are not explicitly excluded, so they are considered to be included in the patent coverage (Papic et al., 2008, pp. 389-396). This has encouraged private sector investment in biotechnology.

According to the U.S. Department of Agriculture data from the 2004, the company in various countries of the world owned 7,368 biotechnology patents, universities and non-profit organizations 2,765, and the governments only 789. The U.S. is leader in all the three categories, with 62 percent of the patents owned by the company, 85 percent owned by universities and non-profit organizations and 53 percent state-owned. Ten companies control 44 percent of the total number of biotech patents. Monsanto generated the largest share in the total number of patents (9.1 percent) (Papić, 2008, pp. 55) (Table 4).

Tabela 4. 30 leading companies by the number of patents

Rang	Kompanija	Broj patenata
1	MONSANTO CO., INC.	674
2	DU PONT, E. I. DE NEMOURS AND CO.	565
3	PIONEER HI-BRED INTERNATIONAL, INC.	449
4	SYNGENTA	284
5	NOVARTIS AG	230
6	BASF AG	217
7	DOW CHEMICAL CO.	214
8	HOECHST JAPAN LTD.	207
9	MYCOGEN PLANT SCIENCE, INC.	196
10	BAYER AG	184
11	ROCHE HOLDINGS	141
12	ADVANTA TECHNOLOGY LTD.	137
13	AJINOMOTO CO. INC.	128
14	AVENTIS CROPSCIENCE	126
15	AMERICAN CYANAMID CO.	124
16	ZENECA LTD.	113
17	DEKALB GENETICS CORP.	112
18	ELI LILLY AND CO.	110
19	NOVO-NORDISK A/S	96
20	ASGROW SEED CO.	91
21	CALGENE L. L. C.	91
22	AKZO NOBEL BV	86
23	CIBA-GEIGY AG	85
24	KYOWA HAKKO KOGYO CO., LTD	84
25	IMPERIAL CHEMICAL INDUSTRIES PLC	76
26	CHIRON CORP.	75
27	NEW ENGLAND BIOLABS, INC.	75
28	SAVIA	67
29	APPLERA CORPORATION	64
30	NESTEC, S. A.	64

Source: www.ers.usda.gov/data/AgBiotechIP/

Taking into account the agricultural biotechnology patents, five multinational companies: Dupont, Syngenta, Aventis (now Bayer CropScience), Monsanto and Dow, control 71 percent of the patents (Papić, 2008, pp. 55). Agriculture patents are typically of broad spectrum and prevent almost all research in a particular area. When Monsanto

purchased Agracetus company, has acquired almost the entire transgenic soybeans, because this company hold the method of gene transfer (European EP 301749, U.S. 015 580 U.S.). A patent application for soybeans with improved yield (WO 0018963), which has already been approved in Australia (AU6277599) is patent Monsanto asking for. This patent covers all soybeans containing certain genes or segments of DNA from wild soybean (Glycine sp.). In this way Monsanto has exclusive rights not only over this feature and over any soy that contains genes for yield, but also has right over of the wild soybean, especially PI407305 soybean and its progeny originating from southern China. The same company also has ownership rights over the genome of rapeseed, which provides resistance to the herbicide glyphosate. PGS company, now owned by Bayer CropScience, has a broad spectrum patent of all GM plants containing insecticidal Bt toxin (U.S. 5, 460, 963 and Bt18, or BT4 and U.S. 5, 633, 446 for any Bt toxin modified to specific way). In 2000 inventors of Golden rice have signed a contract with Zeneca Company, which gave the company an exclusive license for the commercial use of this technology. Syngenta has been created by the merger of agrochemical sector AstraZeneca and Novartis at the end of 2000. Syngenta is now the owner of the license. Largest corporation are also owners of Terminator patents. Syngenta owns eight patents (two from Novartis and five from Zeneca Company), Delta and Pine Land has three patents, BASF one patent and Monsanto one. Syngenta has three patents, and DuPont one for Traitor technology, variant of Terminator technology. In relation to the total number of biotech patents (government and non-governmental institutions, companies) U.S. Department of Agriculture (USDA) with 315 patents rank fourth, just after Monsanto, DuPont and Pioneer.

The research areas that are not controlled by patenting are rare. If control is not done through the feature, then is through patented molecular markers (techniques that are routinely used in most breeding institutions to identify genes with the desired trait because it significantly speeds up the selection process). Often the governmental institutions are entering into partnerships with private companies. Sporadic cases of developing traits by GI , although it can develop by traditional methods have been recorded. As a consequence patenting reduced cooperation between different research groups and discontinued open scientific communication. Prof. King from the U.S. said "In normal research scientists seek to publicize their work. However, patent law prohibits prior disclosure of information, which includes oral presentations, abstracts, papers ... and because of this individuals or groups whose work apply for patents, must hide their work from the public. Patent Office lawmakers advised researchers to discuss with colleagues minimally, not to show their annotations etc. … All this returns mediaeval culture"(Papić, 2008, pp. 56). Critics argue that patenting threatens selection houses as well as traditional selection which is still the most important source of crop varieties in the world, especially in countries of the South.

Great competition between companies for commercial patenting of genes, organisms and processes is unmatched. Penalties for infringement of patents, unfair artifices and unauthorized research occasion were a reason of record number of court cases (Papic et al., 2008a, pp. 193-200). For the functioning of the patent system is necessary to provide conditions for high-tech research, active investors, effective patent office, patent-trained inspectors and efficient legal system, so

patenting is a privilege of developed countries. Functioning in the patent world may lead Third world deeper into poverty. Countries of the South claim that the discovery of the North companies, actually stealing their indigenous knowledge and varieties, since most of the genetic resources necessary for the functioning of the Gene Revolution is placed in poor countries. The best example of the bio piracy, often the subject of heated debate is the Indian tree NIM "blessed tree": a mystical symbol carried on therein, used for hundreds of years to ritual New Year's receptions, as well as a fuel source and a pesticide or for the treatment of various diseases. W.R. Grace company, which isolated the strongest ingredient of NIM seed has acquired a number of patents. Companies believe that patent protection is necessary because investing heavily in getting new products. On the other hand, the question is: How is it possible to determine the market value of indigenous knowledge? (Papic et al., 2008a, pp. 193-200).

THE ROLE OF U.S. AND WORLD TRADE ORGANIZATION IN GMO DIFFUSION

The U.S. state apparatus realizing the huge potential of transgenic technology, and wanting to maintain its position as world leader in agriculture, with the first application of the GI crops is supported agricultural multinational companies (Papic Brankov et al., 2010, pp. 25-35). Administration of R. Reagan in a document entitled "Coordination Framework for Regulation of Biotechnology" has decided that it is not necessary to make special provisions for new technologies (such as GI) as contributing to the spread of traditional selection without the emergence of new risks. The products of biotechnology are regulated under the same U.S. laws that govern the health, safety, efficacy, and environmental impacts of similar products derived by more traditional methods. The policy was based on the assumption that the process of biotechnology itself posed no unique or special risks. Further, this policy stated that a commercial product, regardless of its manner of production, should be regulated based on the product’s composition and its intended use. In other words, foods developed via biotechnology would be regulated in the same way as other foods developed through conventional processes. Likewise, microbial pesticides developed from biotechnology would be regulated in the same manner as other microbial pesticides. As a result, no single statute and no single federal agency govern the regulation of biotechnology products. The products of biotechnology span a wide range of foods, drugs, and chemicals, and are thus governed by a complex range of laws that apply to all foods, drugs and chemicals. Under these laws, three federal agencies the Food and Drug Administration (FDA), the Department of Agriculture (USDA), and the Environmental Protection Agency (EPA) have primary responsibility for the regulation of biotechnology products.

The same policy was supported by J. Bush (senior), J.Bush (junior), and B. Obama administrations. These administrations did not want to slow the

development of biotechnology legislation or to send the wrong message to Wall Street. U.S. held close relations of the biotechnology and the state apparatus at the official level, through the representatives of the companies and the U.S. administration (papic, 2008, pp.142). For example A. Veneman, Secretary of Agriculture in the cabinet of J. Bush (junior) was a member of the Monsanto Board subsidiary Calgene Ink, is known as a promoter of biotechnology; WD Ruckelshaus former Chief Administrator of the Agency for the Environment, has become a member of the Board of Monsanto Company; L. Fischer, former assistant administrator of the Agency for the Environment, was one of the vice president of Monsanto; M. Miller, former supervisor of Monsanto Chemical Laboratory, was one of deputy director in FDA. There are other examples in recent history. Although there were discrete indications to amend laws on food safety and possibly mark GM foods in B. Obama campaign, all hopes were ended by selecting M. Taylor, Monsanto lobbyists as a senior advisor for food safety at the FDA as well as appointment of T. Vilsack, the director of Monsanto for the first man of the Ministry of Agriculture.

U.S. administration promote with equal enthusiasm GM food in own country and abroad. The arguments used in international negotiations in order to gain the trust of other countries to GM crops and food are: 1) GM crops and food are allowed in the U.S. because the rigorous tests showed that GM foods are safe for health and the environment; 2) The American public believes in its own legal system and is satisfied with the consumption of GM foods, and 3) Americans are eating GM foods for years and no one got sick or died from it.

Theoretically, any food that contains ingredients of soybeans, corn, cotton, rape seed, potato, pumpkin, papaya, tomato, sugar beet, rice, flax or chicory- (GM plants approved for commercial production in the U.S). can be GM, because there are no segregation markets for GM and non-GM foods. Research shows that 60-70% of food in the American market is GM product, or contains ingredients from transgenetic plants. Placing the food on the market without marking and separation of non-GM foods with minimal legislative regulations gives multinational companies a big advantage in other parts of the world (Papic Brankov et al., 2010, pp. 25-35).

Numerous international organizations on the direct or indirect way influence the diffusion of genetically modified (GM) food. Particularly important role in this process play a WTO, World Bank (WB), CGIAR, the Organization for Food and Agriculture United Nations (FAO UN), various international foundations, universities and other scientific institutions (Papic Brankov et al., 2012, pp. 29-38).

The WTO is often an instrument of threat in constant tension between the U.S. and the EU. In 1998, a *de facto* moratorium led to the suspension of approvals of new GMO in the EU pending the adoption of revised rules to govern the approval, marketing and labelling of biotech products. All U.S. imports of GM products (seeds, food, fodder) was prohibited in the EU. The approval of GM crops in the US in the mid-1990s precipitated strong public concern in Europe and led to a dramatic decrease in US exports to the EU. Prior to 1997, corn exports to Europe represented about 4% of total U.S. corn exports, generating about 300 million US$

in sales. Starting in 1997, however, the U.S. largely stopped shipping bulk commodity corn to the EU because such shipments typically commingled corn from many farms, including GM varieties not approved by the EU. The change was dramatic. For example, before 1997, the U.S. sold about 1.75 million tons of corn annually to Spain and Portugal, the two largest importers of U.S. corn in the EU. But in the 1998–99 crop year, Spain bought less than a tenth of the previous year's amount and Portugal bought none at all (Pew Initiative on Food and Biotechnology, 2005).

In May 2003, the U.S and twelve other countries (Argentina, Canada, Egypt, Australia, New Zealand, Mexico, Chile, Colombia, El Salvador, Honduras, Peru and Uruguay) filed a formal complaint with the WTO that the EU was violating international trade agreements, in blocking imports of U.S. farm products through its long-standing ban on GMO. The countries argued that the EU's regulatory process was far too slow and its standards were unreasonable given the overwhelming body of scientific evidence showing that the crops were safe. The case was also lobbied by U.S. biotechnology giant Monsanto and France's Aventis, as well as by US agricultural groups such as the National Corn Growers Association. In response, in June 2003, the European Parliament ratified a U.N. biosafety protocol regulating international trade in GM food, and in July agreed to new regulations requiring labeling and traceability, as well as an opt-out provision for individual countries. Following this, the approval of new GMOs began again in May 2004. While a number of other GMOs have been approved since then, approvals remain controversial and various countries have utilized the opt-out provisions. In 2006, the WTO ruled that the pre-2004 restrictions had been violations[71], although the ruling had little immediate effect since the moratorium had already been lifted.

In 2001, Sri Lanka ban the import of GM food. This attempt failed upon the request of the WTO to postpone the application to 60 days and threats of the U.S. A similar thing happened to Croatia in 2001. Bolivia, which adopted a resolution banning GMOs in January 2001 was forced to withdraw due to pressure of Argentina and biotechnology companies. One of the important thinks that discussed when China joined the WTO (2001) was the expectation that the Chinese market will become more open and competitive, and that will increase imports of transgenic technology and its products (Papic Brankov et al., 2012, pp. 29-38).

[71] *Euractive.com EU GMO ban was illegal, WTO rules* *EC – Approval and Marketing of Biotech Products (Disputes DS291, 292, 293)*

WHO HAS PROFITED?

The existing literature on the impact of transgenic crops on the economy, especially in developing countries is very limited. Data for more than two or three years are rarely available, and most studies include a relatively small number of farmers, and that small sample size, with additional factors such as time, quality seeds and pesticides, the occurrence of pests and skills of farmers, makes very difficult assessing the economic impact of GM crops. A particular danger is that GM crops are mostly controlled by a few large companies.

Crops with altered composition of nutrients, as well as crops resistance to abiotic stresses (including drought), bacterial and fungal diseases and nematodes are not placed on the market. These features are most important for poor countries and poor unproductive land, which in the presence of barriers to technology transfer in the form of intellectual property rights clearly indicates the dominance of individual interests or company interests in the creation of GM crops. In addition, farmers GM producers are obliged to sign a contract with the multinational companies that submitted their annual seed. This agreement prohibits saved seed planting what leads the Third world into deeper poverty.

According to previous studies regardless of differences in the valuation and distribution of economic benefits, on average, a third of global income (37 percent) went to innovators (creators and deliverers of seed genes), and two-thirds (63 percent) are distributed between domestic and foreign farmers and consumers (Papic Brankov et al., 2011a, pp. 251-261). However, recent studies have cast doubt on this analysis. Yield reduction, the development of resistant weeds and pests, as well as frequent suicides of farmers in India raises doubts about the claim that the production of GM crops is cheaper than traditional production (Papic Brankov, 2013, pp. 90). Monsanto achieved the greatest profit from the production of GM crops. In 2005, the traits developed by Monsanto are involved in the total area under maize with 99 percent, soybeans 87 percent, 66 percent cotton, canola 58 percent (Papic Brankov et al., 2008, pp. 389-396). In the preceding year, Monsanto had total revenue of 6.3 billion US$, representing 10 per cent of total world income of the biotechnology industry. The total income refers to income from the sale of seeds, traits and GM products to increase productivity. It is important to note that the GM plants that produce Monsanto are tolerant to herbicides exclusively produced by the same company. This means the sale of GM seeds increasing sales of herbicides and the company generates both revenues. Monsanto has strengthened a dominant position in the market during the global economic crisis because of small biotech companies bankruptcy and the seeds price raise (Papic Brankov et al., 2008, pp. 389-396; Papic Brankov et al., 2010a, pp.369-376).

DISCUSSION

Analyzing the past companies of the producer, the relationship between industry and the U.S. state apparatus, as well as relations between industry and sponsored research institutions and researchers, it can be concluded that the concept of 'white collar' crime can be applied in GM industry (Papic Brankov et al., 2010b, pp. 65-73). Distribution of GM crops is a good illustration of how, from the "big promises" a variety of GM applications in agriculture, came down to a few modifications in several crops. Most products are engineered crops resistant to herbicides as the company's most important producers of GM crops are also manufacturers of herbicides. In this tricky way companies sale both patented gene and patented chemical.

GI technology was first developed and implemented, and subsequently came to an awareness of possible adverse impacts. It can be expected more discovery about health, economic and environmental consequences of growing GM crops. Only the detailed analysis of the impact of GMOs on human health in a number of generations can show the degree of harmfulness of this technology. The emergence of "super" weeds, or invasive species that are prevalent in a particular habitat is certain. Excessive uniformity and growing in a monoculture of a single variety, one of GMOs on millions of acres of farmland, destruction of indigenous varieties, possible reduction of the number of beneficial insects, especially bees, will endanger the food industry. Then it will be time to implement a new technology or to change GI technology postulates in order to applied it for the benefit of mankind. It is necessary to modify the existing system of intellectual property protection and create plants that have properties important for the poor.

REFERENCES

[1] Domingo, J. L. (2000), Health risks of genetically modified foods: many opinions but few data. Science, 288: 1748–1749.

[2] Ermakova, I.V. (2006), Genetically modified organisms and biological risks. In Proceedings of International Disaster Reduction Conference, Davos, Switzerland, August 27–September 1, 2006, pp. 168–171.

[3] Finamore, A., Roselli, M., Britti, S. (2008), Intestinal and peripheral immune response to MON810 maize ingestion in weaning and old mice. Journal of Agricaltural andd Food Chemistry, 56 (23): 11533–11539.

[4] James, C. (2006), Global status of commercialized Biotech/GM crops: 2006. ISAAA Brief No. 35. ISAAA: Ithaca, NY.

[5] James, C. (2007), Global status of commercialized Biotech/GM crops: 2007. ISAAA Brief No. 37. ISAAA: GEO Ithaca, NY.

[6] James, C. (2008), Global Status of Commercialized Biotech/GM Crops: 2008: The First Thirteen Years, 1996 to 2008. ISAAA Brief 39–2008: Ithaca, NY.

[7] James, C. (2009), Global status of commercialized Biotech/GM crops: 2009. ISAAA Brief No. 41. ISAAA: Ithaca, NY.

[8] James, C. (2010), Global status of commercialized Biotech/GM crops: 2010. ISAAA Brief No. 42. ISAAA: Ithaca, NY.

[9] James, C. (2011), Global status of commercialized Biotech/GM crops: 2011. ISAAA Brief No. 43. ISAAA: Ithaca, NY.

[10] James, C. (2012), Global status of commercialized Biotech/GM crops: 2012. ISAAA Brief No. 44. ISAAA: Ithaca, NY.

[11] MacKenzie, D., McLean, M. (2002), Who's afraid of GM feeds? Feed Mix, 10(3):16–19.

[12] Papić, T. (2008), Ekonomske i etičke impliacije difuzije genetski modifikovane hrane. Novi Sad: Doktorska disertacija.

[13] Papić, T., Lovre, K. (2008), Multinational companies' policies on genetically modified crops. Ekonomika poljoprivrede, 55, (4): 389-396.

[14] Papić, T., Lovre, K. (2008a), Genetski modifikovana hrana će spasiti svet od gladi – zabluda ili stvarnost. Socijalna misao, 15(4): 193–200.

[15] Papić Brankov, T., Lovre, K. (2010), Politika SAD u proizvodnji genetski modifikovane hrane. Zbornik radova (Fakultet za ekonomiju i inženjerski menadžment), 3(5): 25–35.

[16] Papić Brankov, T., Lovre, K. (2010a), Implications of global economic crisis on biotechnology industry. Ekonomika poljoprivrede, 57 (3): 369-376.

[17] Papić Brankov, T., Lovre, K. (2010b), White collar crime in food industry. Socijalna misao, 17(4): 65-73.

[18] Papić Brankov, T., Lovre, K. (2011), Investment research and development in agricultural biotechnology, Ekonomika, 57 (1): 30-36.

[19] Papic Brankov, T., Lovre, K. (2011a), Genetski modifikovane biljne kulture kao faktor uvećanja dobiti na nivou farme. Ekonomske teme, 2: 251-261.

[20] Papić Brankov, T., Lovre, K. (2012), The role of international organizations in the spread of genetically modified food. Zbornik Matice srpske za društvene nauke 138:29-38.

[21] Papic Brankov, T. (2013), Hrana buducnosti ili bioterorizam. Beograd: Službeni glasnik.

[22] Pew Initiative on Food and Biotechnology (2005), U.S. vs. EU: An Examination of the Trade Issues Surrounding Genetically Modified Food.

[23] http://www.pewtrusts.org/uploadedFiles/wwwpewtrustsorg/Reports/Food_and_Biotechnology/Biotech_USEU1205.pdf.

[24] Seralini, G. E., Cellier, D., Vendômois J. S. (2007), New analysis of a rat feeding study with a genetically modified maize reveals signs of hepatorenal toxicity. Archives of Environmental Contamination and Toxicology 52:596–602.

[25] Thayer, A. M. (1999), Market Dynamics, Swayed by Customers up and down the Agricultural and Food Chain, Could Hurt Ag Biotech Businesses. C&EN Houston-News Analysis. Business, 77: 44.

[26] Vendômois, J.S, Roullier, F., Cellier, D., Séralini, G.E (2009), A Comparison of the Effects of Three GM Corn Varieties on Mammalian Health. International Journal of Biological Science, 5:706–726.

LEGAL ASPECTS OF GMO - POTENTIAL ANCHOR FOR STARVING PLANET OR A TROJAN HORSE

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Abstract: GMO – genetically modified organism is an organism – plant or animal – whose genetic material has been altered using genetic engineering techniques.

Using biotechnology in agriculture and medicine, especially in the mid-1980s and at the beginning of the 1990s, numerous genetically modified (GM) organisms and their products were created. GM plants are produced in laboratories by introducing genetic material of one species (only one gene or an entire DNA) into DNA of known plants.

An increasing number of countries, including European countries, enact their own regulations on GMO and transgenic plants aiming to regulate all issues relating to creation, breeding and use of genetically modified organisms. At the same time, multinational companies that completely control transgenic plants and cloning – „from generating ideas to their realization" are accused of „genetic imperialism". Additionally, this paper will explore EU regulations concerning this field, which aims to provide an overview of trends in legislative changes, from extremely restrictive to more liberal approach. Particular attention will be devoted to positive law solution in our country, which will certainly undergo modifications in the near future, having been exposed to an increasing pressure of economic globalization.

In this respect, we will seek to present proposals, taking into consideration respective experiences in the region, which would enable our legislators to protect themselves from increasing pressure of "genetic imperialism" which accompanies denial of basic human right to freedom of choice, right to be informed and constitutional right to a healthy environment.

Key words: GMO, Human Rights, "Genetic Imperialism", Biotechnology, Serbia

JEL classification: Q00, Q13

UDC 341.24:604.6; 340.137:604.6(4-672EU); 340.134:604.6(497.11)

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INTRODUCTION

GMO – genetically modified organism is an organism – plant or animal – whose genetic material has been altered using genetic engineering techniques.

Using biotechnology in agriculture and medicine, especially in the mid-1980s and at the beginning of the 1990s, numerous genetically modified (GM) organisms and their products were created. GM plants are produced in laboratories by introducing genetic material of one species (only one gene or an entire DNA) into DNA of known plants. In this way, internal genetic structure of modified plant is changed forever, and desired characteristic is transferred to the next generations (Protic, 2013).

An increasing number of countries, including European countries, enact their own regulations on GMO and transgenic plants aiming to regulate all issues relating to creation, breeding and use of genetically modified organisms. At the same time, multinational companies that completely control transgenic plants and cloning – „from generating ideas to their realization" are accused of „genetic imperialism". This new form of "the rich rule over the poor" is particularly directed towards undeveloped and poor countries, which will have no choice but to further indebt themselves by purchasing expensive modern biotechnology products from wealthy nations. Genetically modified organisms can have negative impact on the environment. New organisms may compete successfully with their wild relatives, causing changes in nature. All organisms created using techniques of modern biotechnology are called genetically modified organisms (GMOs) or living modified organisms (LMOs). LMOs include number of food plants genetically modified to increase productivity or vermin and disease resistance.

Molecular biologists developed numerous enzymes that change DNA structure of living organisms. Some of those enzymes can separate and synthesize DNA elements. Using particular enzymes, scientists can extract some genes from DNA and create modified DNA using those genes, that is, they are able to artificially create new organism, from the existing one, that will have desired characteristics. However, the big problem is lack of possibility to determine the way in which the newly created DNA will behave. The direction in which further multiplication will develop is uncertain.

The authors will begin by defining the concept of genetic modification, with particular emphasis on legal framework regulating protection of the environment from genetically modified organisms. In addition, they will consider advantages and disadvantages of manipulation of genetic material in production of everyday foods.

EMERGENCE, DEVELOPMENT AND CHARACTERISTICS OF GMO

HISTORICAL DEVELOPMENT OF GMO

The notion to explore possibility of transferring genes from one species to another was born in Honolulu in November 1972 at Conference on Plasmids (small circular DNA molecules that can be found in bacteria). The notion was based on the use of restriction enzymes, bacterial nucleases which with high accuracy recognize and cut precisely determined series of nucleotides in DNA molecule. In the next two years, a series of experiments conducted at Stanford University showed that this method could be applied to genetic recombination not only in lower organisms (such as bacteria), but in higher organisms as well (vertebrates).

Scientists engaged in this field immediately realized not only a potential importance of this technology but also possible dangers which could arise from its careless use. This is the reason they required a moratorium on further researches in this field in a letter addressed to National Academy of Sciences (NAS), which was also published in Science journal (Science, vol.190). At a 1975 conference held in Asilomar, California, 150 scientists from 30 countries reached an agreement that the general moratorium should be replaced with complex set of rules associated with conducting only certain types of experiments, while other experiments including recombinant organisms were practically forbidden, until enough knowledge is acquired. Conclusion from this conference, published on 6 June 1975 in the journal of the American National Academy of Sciences (PNAS 1975 72 (6) 1981-1984), represents the only case in some scientific community where the very community imposes upon itself safety and ethic regulations.

In spite of these constraints, we have witnessed dramatic development and commercialization of biotechnology in the following decades. In the 1980s, the development of biotechnology was shown in human proteins being produced by bacteria, while later on the focus was moved to food industry. The first two food industry products of recombinant DNA appeared on market at the beginning of 1990s which immediately provoked significant public reactions. In the mid 1990s, commercial production of recombinant DNA to be used in human diet was started using GMO technology. This approach required that at least two new genes were introduced to host organism, the one that is going to be modified: the first one, which should allow the host organism to synthesize certain protein and the second one, which should serve as a selection marker. Until now, large number of plants with the ability to synthesize proteins produced in nature by some other species, most commonly bacteria, has been created, and these organisms, precisely as a result of that protein, developed some desired characteristics - extended freshness, insect resistance, resistance to certain herbicide, etc. (Tarasejev, Stojković & Crnobrnja-Isailović, 2006).

A big American company Monsanto was an important participant in creation of GM seeds of grains and pulses. Two economically most important GM seeds production technologies developed by Monsanto are:

- „introduction of *Bacillus thurigiensis* (Bt) gene allowing plants to produce their own pesticides and in that way destroy vermin attacking them and
- introduction of glyphosate-resistance gene creating glyphosate- resistant seeds (Roundap), herbicide produced by Monsanto."

ADVANTAGES AND DISADVANTAGES OF GMO

Precisely due to the fact that genetic modifications have lot of advantages, scientists have been diligently exploring this field. However, time has shown that they carry, like Trojan horse, numerous disadvantages and dangers for humans and environment.

Advantages of GMO

Biotechnology advocates indicate that there is no proof that GM organisms have less favorable effects on environment or foods in comparison to their conventionally grown counterparts and point out that GM plants are very useful in modern world. GM plants with Bt genes reduce the need for pesticides (e.g. GM potato requires 40% less insecticides than traditionally grown potato). GM corn contains less fumonisin mycotoxins. GM plants, being herbicide-resistant, reduce the need to plough soil, which prevents soil erosion. Also, increased crop yields prevent deforestation in search for new fertile soil and, most importantly for developing countries, accelerate their economic growth and solve problem of hunger.

Foodstuffs created using biotechnology *can improve quality of their basic ingredients*, e.g. taste and composition. It is particularly useful, for developing countries, to grow pathogen- resistant beans, virus-resistant papayas, Bt cotton as well as vitamin A-enriched rice. Potato which absorbs less oil during frying, corn and soybeans with enhanced protein content, fresher-tasting tomato as well as sweeter strawberries are expected in the near future.

In treatment of genetically conditioned diseases, xenotransplantation or in medication manufacturing industry, benefits that modern biotechnology and its use for medical purposes have for humans is immeasurable. For about twenty years now, recombinant insulin has been produced using genetic engineering, which allowed diabetics to lead higher quality lives, and hepatitis B vaccine enabling efficient protection from viral infectious diseases transmitted by blood, blood products and through sexual contact is created using the same technology. Today, other numerous concoctions significant for disease prevention and treatment are produced using this technology- alpha 1 trypsin, glucagon, thyrotropin, blood coagulation factors, immunological mediators, etc. In further development of medical science, i.e. diagnostics and prevention, it is expected that individual

genetic tendencies toward development of particular diseases are identified. While use of genetic engineering in medical and pharmaceutical science is accepted throughout the world, using this method in food industry has caused significant reactions from both general public and expert circles because of its potential danger for the environment and human health (Petrović & Capak, 2006).

Disadvantages of GMO

On the other hand, for large number of researchers and general public, production of GM foods (the so called Frankenstein foods) is unacceptable meddling with nature (Galjak, 2010 pg. 520).

Cassava potato is protected in soil by its natural content of cyanide, thus enabling it to grow well. If soil is rarely ploughed, ecological and agronomic problems occur: the soil is cooler in spring which makes plant growth more difficult, and process of soil denitrification occurs as well. In addition, production of Bt corn has not led to expected reduction in use of pesticides, and according to some, GM herbicide-resistant plants can even triple their use (Good example is Argentine which has been growing genetically modified soybeans for ten years now. Those modifications should have reduced the need for pesticides, but the case of Argentina proved exactly the opposite. The use of pesticides has been increased, from about 21 to 101, and some types of weed have become resistant to it, so they have to use forbidden chemical concoctions in order to destroy them.)

There are consequences which can be considered dangerous, such as: a) imprecise technology – geneticists transfer genes from one organism to another. Gene can be taken from one organism's DNA with precision, but its introduction into another organism's DNA is mainly random. As a consequence, there is a risk that this might jeopardize functions of other genes important for that organism's life, b) undesirable effects – GE is like performing „heart surgery with a shovel" (Gosling, 2002). Scientists have not yet studied living systems in sufficient detail in order to perform DNA surgeries without creating mutants that can be harmful for environment and human health. They perform experiments on a very delicate and strong force of nature, without completely understanding repercussions, c) widespread crop destruction – geneticists try to profit from patenting genetically modified seeds. That means that, when farmer plants such seed, all seeds have identical genetic structure. As a result, if fungi, viruses or other vermin develop so to be able to attack such crops, then the widespread crop destruction can occur, d) threat to our entire food supply chain – insects, birds and winds can transfer genetically modified seed into neighboring field and further. Pollen from genetically modified plants may be exchanged with natural crops and their wild relatives. All crops, organic and modified, are not protected from pollen contamination.

ENVIRONMENTAL IMPACTS OF GENETICALLY MODIFIED ORGANISMS

Environmental impact of genetically modified organisms should be considered in the context of the so called "first law of ecology", meaning that every living organism develops continuous and constant relationships with other environmental elements including other living organisms. When genetically modified organism enters the ecosystem, it becomes part of the food chain, whether as producer, consumer or decomposer. This is how transgenes transfer to other organisms and become part of their genetic system. The main problem with this technology is that its negative implications have not yet been sufficiently explored. Its achievements thus far have been dogmatized and all questions asked by broader public have been declared a heresy. Possible negative implications of this technology range from negative impact on health of living organisms, including humans, to creation of "Trojan Gene effect" to endangerment of biological diversity. It is possible, in theory, that an animal with such gene destroys entire species. In some fish species, such as salmon, this problem has already been noticed. Even though salmon is grown in closed tanks, several cases in which they escaped into open waters have been recorded. It is hard to imagine what consequences plants grown from seeds containing "terminator technology" gene can cause. Genetically modified plants also become part of the food chain. However, plants are typically contaminated with transgenic material through pollen. It is known that winds and insects may transfer pollen for miles around. In this way, transgene can be transferred to non-transgenic plants thus contaminating traditionally grown crops, their wild relatives, as well as weeds. Creation of herbicide-tolerant "super weeds" represents actual danger. Experts also predict that there is a real threat that antibiotics- resistance gene could be transferred in this way, which would lead to creation of "super microorganisms" resistant to antibiotics used in medicine and veterinary medicine. A particular problem is toxicity of some of genetically modified plants. For example, "Starlink" corn contains Bt-toxin. This type of corn releases this dangerous toxin into soil which stays there for 180 days. It causes death of all insects in soil and above it. Besides being toxic, it was shown that it causes human allergies(Jošt & Cox, 2003). Introducing such organisms into the ecosystem can be compared to introduction of "exotic" organisms from Europe to Australia and North America. Although these animals fit in quite easily in the new environment, the European rabbits caused denudation of land in already barren Australian vegetation. Research that followed showed that the rabbits in question were descendents of only couple of pairs. It was similar in North America. As Cimbrall states, some of them, such as chestnut blight fungus *(Chryphonectria parasítica),* kudzu plant (a type of climber originated from Japan and China which, if not controlled, coils around every object blocking its access to light), birch tree fungal disease (lethal fungal disease that kills oak trees and whose carriers are insects) and moths *(Lymantria dispar)* were incredibly destructive (Mander & Goldsmith, 2004). The situation is also similar in the reverse direction, from new to the old

world. This is precisely the case with Ambrosia *(Ambrosia artemisiifolia)*. The seed of this plant was introduced in Europe in the middle of the 19th century together with a clover seed. Ambrosia, being both weed and allergen (contains over 50% of pollen allergens), represents quite a problem in Central and South European countries. It entered the Republic of Serbia from Romania and today it represents a huge environmental and health problem. As a result of its enormous adaptability as well as due to the fact that it blooms from July to October, it can grow in a very widespread area (Ministry of Environment and Spatial Planning Report, 2008). These particular cases involve natural organisms so every comparison should be taken cautiously.

It is evident that biotechnology can lead to extinction of species. Reduction of biodiversity and extinction of species directly jeopardize the respective ecosystem as well as all life on the planet. In some cases, plants and animals are endangered in their natural habitats. This is the case of corn in Mexico, which has the oldest and the most numerous types of corn. Genetic modification has largely jeopardized this diversity. According to the available data, more than half of plant and animal species live in rain forests of the Third World, in the Equatorial Strip. These areas are becoming increasingly endangered primarily because of the uncontrolled deforesting. Going toward the poles, this diversity is decreasing more and more. Powerful multinational companies organize gene "hunt" in the Third World countries. They observe genetic diversity primarily as inexhaustible resources of raw materials for goods that could be sold in the world market.

In order to protect genetic resources, the World Intellectual Property Organization (WIPO) formed the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore. Unfortunately, work of this Committee comes down to periodical reporting and text of the convention that would have universal significance has not yet been prepared. There are attempts, along the lines of "the modern liberal principles", to proclaim farmers' right to choose, by their own free will, production system to use on their land. This right is up to a certain degree limited to genetically modified plants that passed the "environmental reliability" test. This neoliberal principle is acceptable only in general and to the extent to which it does not jeopardize right of other farmers to grow cultures traditionally. The right to traditionally grow cultures not only in a chronological sense, but also in terms of choice, should be treated as the right that has primacy. Having in mind how cross-pollination occurs, GM plants could, as per our interpretation of this principle, be grown only in greenhouses and under special supervision. Our experience shows that it is not possible to prevent the aerial dispersal of pollen from Romania, let alone from a nearby estate of producer who uses their right to grow transgenic plants. Evidently, wherever there is not possible to apply democratic principle (rights of majority), since the public is generally against growth of genetically modified cultures, the liberal principle (rights of individual) should be proclaimed.

Being deeply aware of severity of this problem, some countries proclaimed parts of their territory transgenic-free zones. Some went a step further, such as Italy and Austria, and declared their entire territory transgenic-free zone. There was a

notion to declare the entire territory of the Republic of Serbia transgenic-free zone. This, of course, does not mean that import of products derived from genetically modified organisms is forbidden as well. Placement of these products on the market is typically permitted under the condition that they are properly labeled.

LEGAL FRAMEWORK REGULATING PROTECTION OF THE ENVIROMENT FROM GENETICALLY MODIFIED ORGANISMS

INTERNATIONAL TREATIES

Legal framework regulating protection of the environment from genetically modified organisms is not possible to consider without taking into account the context of biodiversity. The United Nations adopted the Convention on Biological Diversity. The Convention was opened for signature at the UN Conference on Environment and Development (UNCED) in Rio de Janeiro in June 1992, it came into effect on 29 December 1993 and it currently counts 185 member states. The Republic of Serbia ratified the Convention in 2001. The Convention Preamble quite generally sums up the reasons for its adoption. It states, inter alia, that contracting parties are aware of the actual value biological diversity has for development and sustainability of living systems enabling biosphere functioning, it confirms that conservation of biological diversity is common concern of humankind and that countries have sovereign right to their own biological resources, it recognizes that biological diversity has been declining due to certain human activities and that lack of scientific facts must not be used as a reason for delaying measures aimed at avoidance and reduction of such threats.

The main objective of the Convention is conservation and sustainable development of biodiversity and fair and equitable sharing of the benefits arising from the use of genetic resources, by providing adequate access to genetic resources and respective transfer of relevant technologies, taking into consideration all rights related to these resources and technologies. Biological diversity is defined as the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems. Biological resources include genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity. Ecosystem is defined as a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit. Member states are guaranteed the sovereign right to use their own resources, in accordance with their environmental policy, with the obligation to ensure that activities within their jurisdiction or under their control are not harmful to the environment of other countries and territories outside the borders of their national jurisdiction. With this end in view, the mechanisms for international cooperation are provided, through competent international

organizations on bilateral, regional and universal level. The Convention foresees the obligation of signatory parties to develop national strategies, plans and programs for conservation and sustainable use of biological diversity, in accordance with their respective circumstances, as well as to integrate conservation and sustainable use of biodiversity into relevant sectoral or supra-sectoral plans, programs and policies. The Convention stipulates mandatory identification and monitoring of biodiversity components, as well as their conservation both in their natural habitats (*in-situ*) and outside their natural habitats (ex-situ).

The Convention acknowledges that the key to conservation of biodiversity depends on its sustainable use. The Convention also contains provisions regulating research and training, public awareness and education, impact assessment, access to genetic resources, access to and transfer of technology, information sharing and provision of financial resources. In terms of impact assessment, it is defined that member states are obligated to adopt adequate rules and procedures in order to avoid and minimize negative effects. In case of immediate or severe danger or damage originating from their territory, member states are obligated to immediately inform potentially endangered country, as well as to act in order to prevent such danger or damage. In terms of access to genetic resources, the Convention recognizes countries' sovereign rights to their own natural resources and defines their obligation to facilitate access to genetic resources to other member states for environmentally friendly use. Access to genetic resources will be acquired as per mutual agreement that will fairly regulate sharing of benefits arising from commercial and other use of the results of scientific research of genetic resources. Precisely this provision, even though it seems fair at the first sight, became "legal basis" for uncontrolled exploitation of genetic resources in the Third World countries.

The Convention obliges member states to share information regarding conservation and sustainable use of biodiversity, share results of technical, scientific and socio-economic research including information on specialized and traditional knowledge and their combination with modern technologies. Member states are also obliged to improve international scientific and technical collaboration regarding conservation and sustainable use of biological diversity. With this end in view, the *clearing-house* mechanism is established, as well as agreements between contracting parties to improve joint research programs and investments in order to further develop technologies in line with the Convention objectives.

As to genetically modified organisms, it is stipulated that contracting parties shall consider the need for and modalities of protocol which would include adequate actions, such as separate agreements on prior notice of safe transfer, handling and use of any living modified organism, created using biotechnology and which could have negative impact on conservation and sustainable use of biodiversity. It is regulated that any contracting party shall request from any legal or natural entity dealing with such organisms to submit relevant information on handling and possible negative impacts of such organisms. Precisely this provision served as legal basis for the adoption of the Cartagena Protocol on Biosafety,

which will be considered further below. The Convention also stipulates mechanisms for providing funding to developing countries on the non-refundable or concession basis.

In terms of its relationship with other international treaties, it is specified that provisions of the Convention shall not have effect on rights and responsibilities of any contracting party arising from any international treaty, except in case when exercising such rights and responsibilities would cause severe damage or threat to biodiversity. In terms of its relationship with the protocols, it is defined that country or regional organization cannot become party to the protocol, unless it became at the same time contracting party to the Convention. Having in mind all provisions, it can be concluded that the Convention on Biodiversity has the importance of the "constitutional act" in the field of biodiversity protection. The Convention established the Conference of the Parties, Secretariat and Subsidiary Body on Scientific, Technical and Technological Advice, as well as mechanisms for solving disputes between member states.

At the Conference of the Parties to the Convention on Biological Diversity of 17 November 1995, it was agreed to draft the Protocol on Biosafety with particular emphasis on transboundary movement of any genetically modified living organism that could have negative impact on biodiversity. At the Diplomatic Conference held in Montreal in 2001, the Cartagena Protocol on Biosafety was adopted, along with the Convention on Biological Diversity. It is interesting that the Protocol Preamble makes direct reference to the 15th Principal of the Declaration on the Environment and Development adopted in Rio de Janeiro, which represents straightforward recognition that genetically modified organisms can be environmental issue. The Preamble, inter alia, states that contracting parties are aware of the rapid expansion of modern biotechnology and increasing concern of the public related to potential negative consequences it can have on biodiversity and human health, that modern biotechnology has great potential for ensuring humankind welfare, if developed and used with application of appropriate safety measures protecting environment and human health, and that it is essential to take into account limited ability of many countries, especially the developing ones, to deal with possible dangers of genetically modified organisms. The objective of the Protocol is to ensure adequate level of protection in terms of safe transport, handling and use of genetically modified living organisms created using modern biotechnology, which can have negative impact on biodiversity. The Protocol specifies general obligation for the member states to grow, handle, transport, use, move and release any genetically modified living organism in such way as to prevent or reduce threats to biodiversity, taking into consideration threats to human health as well. According to the Protocol, genetically modified organisms are defined as living organisms whose genetic basis has been altered using modern biotechnology methods. Modern biotechnology is defined as application of techniques, including recombinant DNA and direct introduction of DNA into cells or organelles and fusion of cells beyond the taxonomic family. This definition does not include tissue cultures and cloning, though this is not the subject of this paper. In terms of exceptions to its implementation, it is stipulated that the Protocol shall

not apply to transboundary movement of genetically modified living organisms registered as human medications. This constraint is conceivable since national laws and international treaties regulate specific trade regime for pharmaceutical products which is typically much stricter than trade regime for all other products.

Beside these two conventions, there is one general global document relevant to this field. It is the Agreement on Foundation of the World Trade Organization (WTO) adopted on 15 April 1994 at the Ministerial Conference in Marrakesh, Morocco (WTO, Ministry of Foreign Trade and Economic Relations of Bosnia and Herzegovina, 2005). Annexes form an integral part of the Agreement, including the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS). From the very beginning, the World Trade Organization itself, and especially its decision-making system, was severely criticized by anti-globalists. According to Tony Clark "the WTO is organized in such way as to serve interests of multinational companies. The WTO will have legislative and judicial power as well as authorization to remove all obstacles that come in the way of international investments and competition. Within the WTO, a group of nonelected trade representatives will operate as world parliament, which will have the power to refute decisions regarding economy, social policy and environment made by countries and democratic legislative bodies. At the same time, leading world's multinational companies will have huge role in the new World Trade Organization as a result of having direct connections with trade representatives of member states" (Clark, 2003, p.294). Anti-globalists severely criticize the WTO's dispute solving mechanism. David Corten considers "that the WTO has broad authorization in terms of securing legal protection for corporations without being responsible to anyone's interests but its own." As Corten states "the WTO will hear out objections against country's federal and local laws which other member state considers a trade obstacle. Secret jury consisting of three members, trade experts, appointed without voting, considers objections, and their rulings can be refuted only by unanimous decision of all member states. In general, any health, safety and environmental standard that goes beyond international regulations in force, established by trade representatives, will probably be considered a trade obstacle" (Corten, 2003, p.39). In general, there is a tendency within the WTO that all trade restrictions, including the ones on import of genetically modified organisms, which potentially can be environmental problem, are declared free trade restrictions. Legislative changes in many countries, including the European Union member states, are partially a consequence of the WTO pressure, through implementation of the TRIPS, especially through the dispute solving mechanism.

THE EUROPEAN UNION LEGISLATION

The European Union started regulating this field at the beginning of the 1990s. The Council Directive of 23 April 1990 on the contained use of genetically modified micro-organisms dates from that period (90/219/EEC). This Directive was amended by the Directive of 26 October 1998 (98/81/EC). The Council Directive of 23 April 1990 on the deliberate release into the environment of genetically modified organisms (90/220/EEC) dates from the same period. It was replaced by the Directive of the European Parliament and of the Council of 1

March 2001 on the deliberate release into the environment of genetically modified organisms (Directive 2001/18/EU). This Directive was amended by the Regulation of the European Parliament and of the Council of 22 September 2003 concerning the traceability and labeling of genetically modified organisms and the traceability of food and feed products produced from genetically modified organisms (1830/2003/EC). It is interesting that in June 1999 the European Union introduced moratorium on transgenic plants which resulted in a dispute with the USA that was solved with the mediation of the WTO (Marion Dolezel et al., 2011).

Other relevant documents for this field include the Regulation of the European Parliament and of the Council of 15 July 2003 on transboundary movement of genetically modified organisms (1946/2003/EC), Regulation of the European Parliament and of the Council of 22 September 2003 on genetically modified food and feed (1829/2003/EC), and the Decision of the European Commission of 29 July 1991 referring to the guidelines for classification stated in the Article 4 of the Directive 90/219/EEC. The most important document in the European Union legislation is by all means the Directive on the deliberate release into the environment of genetically modified organisms. The Directive on the deliberate release into the environment of genetically modified organisms (Directive 2001/18/EC) has extraordinarily long Preamble consisting of even more than 63 articles. Apart from stating the objectives of the adoption of the Directive, it also represents commentary on the normative solutions so it can be used for their interpretation.

The proclaimed objective of the Directive is to harmonize, in accordance with the precautionary principle, laws and other regulations of member states concerning deliberate release into the environment of genetically modified organisms for any other purpose except for trade within the EU countries and for placement of genetically modified organisms as products or part of products on the EU market. It is stipulated that the member states shall, as per the precautionary principle, ensure that all adequate measures are taken to avoid harmful impact on human health and environment, which can be a consequence of the deliberate release or market placement of genetically modified organisms and that such organisms shall deliberately be released or placed on the market only in accordance with the procedure prescribed by the Directive. Any person submitting the application has to perform environmental risk assessment prior to its submittal. The risk assessment is performed for each particular case taking into consideration nature of organism that is being introduced and environment in which it is being introduced. The objective of the environmental risk assessment is identification and assessment of potential direct and indirect harmful impact of genetically modified organisms on environment and human health. The risk assessment is also aimed to determine whether there is a need for introduction of risk management system. It is defined that any person, prior to the deliberate release of genetically modified organisms or combination of genetically modified organisms, has to submit application to the competent authority of the country where the deliberate release will take place.

The Directive regulates procedure in detail, including issuance of a permit or equivalent for the deliberate release of genetically modified organisms for any other purpose but market placement, as well as placement of GMO and products containing or originating from GMO on the market. It is also foreseen that genetically modified organisms placed on the market have to be labeled in such way that wording "This product contains genetically modified organisms" appears on the product packaging and accompanying documents (Directive 2001/18/EC).

Member states are obliged to appoint one or more competent authority or authorities for implementation of the Directive provisions including performing inspections and other supervising activities. In case of release of genetically modified organisms or placement of GMO and products containing or originating from GMO on the market, for which the permit has not been obtained, member states are obliged to take necessary measures to stop the release or market placement in order to take corrective measures if necessary and to notify the public, the Committee and other member states. Member states are also obliged to take measures to ensure traceability in all phases of placement of the approved genetically modified products on the market. In terms of its relationship with the Cartagena Protocol, the Directive defines that compliance with its provisions is compulsory for the EU exporters.

The Regulation concerning the traceability and labeling of genetically modified organisms and the traceability of food and feed products produced from genetically modified organisms (1830/2003/EC), which amended this Directive, defines the provisions referring to the traceability and labeling of the approved genetically modified organisms. This Regulation foresees that, when placing products containing or consisting of genetically modified organisms on the market, it has to be ensured that the information that products contain or consist of genetically modified organisms is transmitted in writing as well as that the unique identifier is assigned to such organisms in accordance with the Regulation. It is also obligatory to ensure that said information is transmitted in writing, in each following phase of the product placement on the market, to all dealing with the product. In terms of labeling, it is foreseen that prepackaged products containing or consisting of genetically modified organisms are labeled in such way that the product packaging reads "This product contains genetically modified organisms" or "This product contains genetically modified (name of the organism)". For unpackaged products, this information shall be placed on the product itself or immediately next to it. As to exceptions, the Regulation foresees that the mandatory labeling does not apply to products containing traces of genetically modified organisms that do not exceed permitted level prescribed by the special regulations of the EU, provided that such traces are adventitious and technically unavoidable. The Regulation also defines that member states, in order to ensure its implementation, shall ensure inspection and supervision including sample testing and analysis measures. It foresees, in order to assist member states at the Union level, formation of the Central Register containing all relevant data on genetically

modified organisms approved for market placement as well as data on genetically modified organisms that are not approved for use in the European Union.

The European Union implemented the obligations from the Cartagena Protocol through the Regulation on transboundary movement of genetically modified organisms (1946/2003/EC). The objective of the Regulation is to establish common notification and information concerning transboundary movement of genetically modified organisms and to ensure that implementation of the Protocol provisions is harmonized at the Union level in order to provide adequate safety level in transboundary movement. This Regulation also regulates issue of export of genetically modified organisms to the third countries and unintentional transboundary movement of genetically modified organisms.

THE REPUBLIC OF SERBIA LEGISLATION

The most important document regulating environmental issues in the Republic of Serbia is the Law on Environmental Protection ("Official Gazette of the Republic of Serbia" 135/2004, 36/2009, 36/2009 – other law, 72/2009- other law and 43/2011- Decision of the Constitutional Court). This Law regulates traditional forms of the environmental protection. Article 26 of the Law refers to protection of the biosphere and biodiversity. It is stipulated that conservation of the biosphere extends to protection of organisms, their communities and habitats including conservation of natural processes and natural balance within the ecosystem, while ensuring their sustainability. Biodiversity and biological resources shall be protected and used in such way that their survival, diversity, regeneration and improvement in case of disturbance are ensured. Protection of biodiversity, use of biological resources, genetically modified organisms and biotechnology shall be carried out in accordance with that Law and special laws as well as obligations from international treaties. This is the article that represents framework for adoption of special law regulating protection of the environment from unauthorized use of genetically modified organisms based on country needs and obligations stipulated in the international treaties.

The special law, in terms of the previous provision, is in the part of the Law on Genetically Modified Organisms (Official Gazette of the Republic of Serbia 41/2009) referring to environmental protection. This Law is harmonized with international treaties ratified by the Republic of Serbia, and to a significant extent with the EU regulations in this field. The key provision of the Law defines that not even one modified living organism or product derived from genetically modified organisms can be placed on the market, that is can be grown for commercial purposes on the territory of the Republic of Serbia. The objective of this provision is to make the entire territory of the Republic of Serbia transgenic - free zone. In accordance with the EU standards, it is foreseen that the agricultural product containing up to 0,9% of traces of genetically modified organisms and traces originating from genetically modified organisms is not considered genetically modified product. It is interesting that in Japan, for example, the permitted limit value is up to 5%. In case of seeds and reproductive material, the permitted limit value is 0,1%.

The Law foresees formation of the Expert Council on Biosafety. The role of the Expert Council is, among other things, to perform risk assessments in cases of deliberate introduction of GMOs into the environment, to consider proposals for amendments of regulations concerning genetically modified organisms and products derived from genetically modified organisms and to issue expert opinions concerning genetically modified organisms and products derived from such organisms. It is specified that the Expert Council shall operate on the "case to case" basis, use scientifically based data in their work and follow the precautionary principle.

The Law regulates, in accordance with the principles defined in the relevant international treaties and directives that were considered in detail, the procedure for obtaining permit to use GMOs in closed systems and for deliberate introduction into the environment of genetically modified organisms and products derived from genetically modified organisms. It is foreseen that agriculture minister shall, based on the opinion of the Expert Council, and having in mind relevant remarks from the public, as well as report of the authorized laboratory, issue decision authorizing use of GMOs in closed systems and deliberate introduction into the environment and determine safety measures and permit duration. In terms of transboundary movement, the Law makes direct reference to the Cartagena Protocol on Biosafety.

The Law has detailed provisions concerning handling, packaging, transport and management of waste contaminated with genetically modified organisms and products derived from genetically modified organisms. It is defined that handling, packaging and transport including transportation on the entire territory of the Republic of Serbia of genetically modified organisms and products derived from GMOs shall be accompanied by documents clearly stating type of organisms and products. For the use in closed systems, the documents shall contain both conditions and requirements for safe handling, transport and use, shall indicate wherefrom the information was obtained, including name and address of individual and institution entrusted with genetically modified organism. As to deliberate introduction into the environment, documents shall contain identification and relevant characteristics of genetically modified organisms and products derived from GMOs, conditions for safe handling, storage, transport and use and shall indicate wherefrom the information was obtained. The Law defines the obligation to manage waste contaminated with modified organisms in such way that it is destroyed in the presence of the authorized person so to disable further reproduction and transfer of its genetic material to other organisms.

It is stipulated that manufacturer, user or their authorized representative is responsible for damage caused by their direct or indirect actions related to genetically modified organisms and products derived from GMOs that cause harmful consequences to environment and human health. The Republic of Serbia, thus, consistently implemented one of the main principles of the environmental law, the "polluter pays" principle. The Law establishes mandatory record keeping for genetically modified organisms and products derived from GMOs, as well as licensing register. These records are kept in electronic form. The implementation of this Law is supervised by phytosanitary and veterinary inspection. The Law also contains criminal provisions concerning economic offences and delicts. It is

defined that use of genetically modified organisms and products derived from GMOs in closed systems, deliberate introduction of GMOs into the environment, their placement on the market, their growth for commercial use or inadequate disposal of contaminated waste, contrary to the provisions of the Law and thus causing harmful consequences for human health and environment, is considered criminal offence punishable with up to three years imprisonment.

CONCLUSION

As soon as the first genetically modified organism appeared on the Earth, the world was divided in two confronting groups, advocates and opponents of this technology. Both sides showed incredible fanaticism in defending their positions. Development of these technologies is mainly justified by need for creation of new plants and animals that would be resistant to vermin and viruses and to different unfavorable conditions of the outdoor environment. The key objection their opponents point out is that by "opening the book of life" and breaking boundaries between species, new combinations of genes, that never before existed in nature, are created and that, having in mind that this technology is quite new, it still is not possible to predict consequences of use of genetically modified organisms, especially in nutrition. The danger of environmental contamination has been emphasized, which occurs by cross-pollination, transferring modified genes from transgenic plants to non-transgenic plants and their wild relatives through pollen originating from transgenic plants, as well as the possible creation of herbicide-resistant "super weeds" and antibiotics-resistant "super microorganisms". Religious arguments are often used by the opponents as well. According to Marian Jost, if biotechnology wants to put nature under control, that would be unacceptable attempt of usurping god's authority. Transfer of genes over natural boundaries of different species is "man's monstrous idea to try playing God"(Jost M.& Cox S. T., 2003).

The main problem with this technology is that negative implications of its use have not yet been sufficiently explored. Its achievements thus far have been dogmatized and all questions asked by broader public have been declared a heresy. Possible negative implications of this technology range from negative impact on health of living organisms, including humans, to creation of "Trojan Gene effect" to endangerment of biological diversity. It is possible, in theory, that an animal with such gene destroys entire species. Reduction of biodiversity and extinction of species directly jeopardize the respective ecosystem as well as all life on the Earth. Some plants and animals are endangered in their natural habitats. This is the case, for example, with corn in Mexico, where some of the oldest types of corn are severely endangered as a result of genetic modifications. Introducing this type of organisms into the ecosystem can be compared to introduction of "exotic" organisms from Europe to Australia and North America and vice versa. The most

drastic example in our region is the case of ambrosia that has become insolvable environmental and health problem.

There are attempts, along the lines of "the modern liberal principles", to proclaim farmers' right to choose, by their own free will, production system to use on their land. This right is up to a certain degree limited to genetically modified plants that passed the "environmental reliability" test. This neoliberal principle is acceptable only in general and to the extent to which it does not jeopardize right of other farmers to grow cultures traditionally. The right to traditionally grow cultures not only in a chronological sense, but also in terms of choice, should be treated as the right that has primacy. Having in mind how cross-pollination occurs, GM plants could, as per our interpretation of this principle, be grown only in greenhouses and under special supervision. Our experience shows that it is not possible to prevent the aerial dispersal of pollen from Romania, let alone from a nearby estate of producer who uses their right to grow transgenic plants. Evidently, wherever there is not possible to apply democratic principle (rights of majority), since the public is generally against growth of genetically modified cultures, the liberal principle (rights of individual) should be proclaimed.

Contrary to the above said, there are notions to introduce, along the lines of "biodemocracy", moratorium on genetic engineering, altering genetic codes of plants and animals, since it is potentially disastrous to the environment and deeply immoral. Being deeply aware of severity of this problem, some countries proclaimed parts of their territory transgenic-free zones. Some went a step further, such as Italy and Austria, and declared their entire territory transgenic-free zone. There were some notions to declare the entire territory of the Republic of Serbia transgenic-free zone. This, of course, does not mean that import of products derived from genetically modified organisms is forbidden as well. Placement of these products on the market is typically permitted under the condition that they are properly labeled.

It should be pointed out that there are transgenic organisms whose use almost nobody disputes. These are mainly pharmaceutical products such as human insulin, for which the special regime for placement on the market and use is prescribed, thus significantly reducing the danger of environmental contamination.

Legal framework regulating protection of the environment from contamination with genetically modified organisms is part of the biodiversity protection system. The UN adopted the Convention on Biodiversity. Together with the Convention, the Cartagena Protocol on Biosafety was adopted. The Protocol Preamble makes direct reference to the Declaration on the Environment and Development adopted in Rio de Janeiro, which represents straightforward recognition that genetically modified organisms can be environmental problem. Within the European Union great number of directives, regulations and decisions regulating this field is adopted. The objective of all these documents is to ensure adequate level of protection in cases of deliberate and unintentional release of GMOs into the environment, transport, handling and use of genetically modified living organisms. All these documents guarantee member states sovereign right to decide whether

they will allow growth of genetically modified cultures for commercial use. In terms of import, as it has already been stated, especially in case of finished products, the situation is somewhat different.

Generally speaking, it could be said that the Republic of Serbia now has a modern law suitable for the country that wishes to conserve and develop organic agriculture. When society opts for such type of production, environmental protection from all forms of contamination, especially with genetically modified organisms, becomes primary concern. It should be pointed out that one of the strategic orientations of the SFR of Yugoslavia, and now of the Republic of Serbia, was seed production and creation of its own types of plants. Between 1960 and 1997, local breeders patented over 1000 newly created types of plants, among which are numerous plants with high quality and high fruitfulness that are nowadays among the world's leaders. However, mere adoption of the law is not sufficient, especially having in mind situation in neighboring countries, particularly Romania which is, in terms of area where genetically modified cultures are seeded, one of the world's record-holders, as well as Montenegro and Bosnia and Herzegovina where, truth to be told, production of genetically modified cultures for commercial use is not permitted legally, but where control mechanisms are almost not working at all. The first next step is adoption of sub-legal acts which would correspond to the new legal framework. After that, special focus should be on function of the state control measures, especially phytosanitary and veterinary inspection, as well as on providing training to accredited laboratories for conducting such analysis. Even though significant steps were made, the Republic of Serbia is, actually, far from becoming transgenic-free zone on its entire territory.

REFERENCES:

[1] Act of Formal Confirmation of the Convention on Biological Diversity, Official Gazzette of the Federal Republic of Yugoslavia – International Treaties, no. 11/2001.

[2] Berg P, Baltimore D, Brenner S, Roblin R O, and Singe M F, Summary Statement of the Asilomar Conference on Recombinant DNA Molecules, PNAS 1975 72 (6) 1981-1984.

[3] Cartagena Protocol on Biosafety with the Convention on Biological Diversity.

[4] Clark T., (2003), Mechanisms of Corporate Rule, (Mander Jerry, Goldsmith Edward: The Arguments Against Globalization), Belgrade, Clio.

[5] Corten S. D., (2003), The Failures of Bretton Woods, Belgrade, Clio.

[6] Council Directive 90/219/EEC of 23 April 1990 on the contained use of genetically modified micro-organisms (Official Journal of the European Communities- 8. 5. 1990-No L 117, p. 1)

[7] Council Directive 90/219/EEC of 23 April 1990 on the contained use of genetically modified micro-organisms (OJ No L 117 of 8. 5. 1990, p. 1)

[8] Council Directive 98/81/EC of 26 October 1998 amending Directive 90/219/EEC on the contained use of genetically modified micro-organisms - 5.12.1998 - No L 330 P. 0013 - 0031.

[9] Council Directive of 23 April 1990 on deliberate release into the environment of modified organisms, Official Journal of the European Communities - 8.5.90 - Page No L 117/15.

[10] Directive 2001/18/EC of the European Parliament and of the Council of 12 March 2001 on the deliberate release into the environment of genetically modified organisms and repealing Council Directive 90/220/EEC - Commission Declaration (OJ L 106, 17.4.2001, p. 1–39)

[11] Galjak, A., (2010) GMO- food of the future or Frankenstein food, Legal records, n.2.

[12] Goldsmith, E. & Mander, J. (1996) The Case Against Global Economy, NY, Random House.

[13] Gosling, M. (2002), GM food crops up in court after 3-year battle, available at http://ngin.tripod.com/200902d.htm

[14] Jost M., Cox S. T., (2003), Intellectual challenge of self-destruction technology, Krizevci, Ogranak Matice hrvatske.

[15] Kimbrell, A., Biocolonization The Patenting of Life and the Global Market in Body Parts, (2003) in.

[16] Mander, J., Goldsmith, E. , (2004) The Arguments Against Globalization, Belgrade, Clio.

[17] Marion Dolezel, Marianne Miklau, Angelika Hilbeck, Mathias Otto, Michael Eckerstorfer, Andreas Heissenberger, Beatrix Tappeser and Helmut Gaugitsch Scrutinizing the current practice of the environmental risk assessment of GM maize applications for cultivation in the EU, (2011), available at http://www.enveurope.com/content/pdf/2190-4715-23-33.pdf

[18] Ministry of the Environmental Protection and Spatial Planning of the Republic of Serbia, (2008), Report on Environmental Situation in the Republic of Serbia 2007, Belgrade

[19] Mladenović-Ranisavljević Ivana, Ranisavljević Predrag, Takić Ljiljana, Štrbac Nada, Mladenović Marina, Živković Živojin (2012), Implementation of strategies in regulating the safety of genetically modified foods , Ecologica, vol. 19, no. 66, pg. 159-163.

[20] Petrović Z, Capak K, (2006) Potential Health Risks of GMO, Croatian National Institute of Public Health

[21] Protic M : Managing the Impact of Climate Changes in Serbia-case study , International Review (2013 No.1-2) ISSN 2217-9739, pp. 128. COBISS.SR-ID 192516620

[22] Regulation (EC) No 1829/2003 Of The European Parliament And Of The Council of 22 September 2003 on genetically modified food and feed, Official Journal of the European Union, L 268/1.

[23] Regulation (EC) No 1830/2003 Of The European Parliament And Of The Council of 22 September 2003 concerning the traceability and labelling of genetically modified organisms and the traceability of food and feed products produced from genetically modified organisms and amending Directive 2001/18/EC, Official Journal of the European Union, L 268/24.

[24] Regulation (EC) No 1946/2003 of the European Parliament and of the Council of 15 July 2003 on transboundary movements of genetically modified organisms (OJ L 287, 5.11.2003, p. 1–10)

[25] Science, vol. 190 available at: www.sciencemag.org/cgi/reprint/190/4212/324.pdf

[26] Tarasjev Aleksej (2012) Assessment and risk management of genetically modified crops, Food and Nutrition, vol. 53, no. 1, pg. 1-6.

[27] Tarasjev, A., Stojković, O., Crnobrnja-Isailović, J. (2006), Ethical aspects of National Council on Biosafety work – bioethics in Serbia and in the world, Belgrade, Serbian Academy of Sciences and Arts.

[28] The Law on Environmental Protection ("Official Gazette of the Republic of Serbia" 135/2004, 36/2009, 36/2009 – other law, 72/2009- other law and 43/2011- Decision of the Constitutional Court)

[29] The Law on Genetically Modified Organisms (Official Gazette of the Republic of Serbia 41/2009)

[30] World Trade Organization (2005), The Results of the Uruguay Round of Multilateral Trade Negotiations, Legal Texts, Ministry of Foreign Trade and Economic Relations of Bosnia and Herzegovina, Sarajevo.

[31] www.aic.ba

[32] www.gmo.hr

[33] www.gmo-guidelines.info/

[34] http://www.ornl.gov/sci/techresources/Human_Genome/elsi/gmfood.shtml

[35] http://www.pnas.org/content/72/6.toc#BiologicalSciencesBiochemistry

[36] http://www.poljopartner.rs/index.php?option=com_content&task=view&id=174&Itemid=81

EUROPEAN UNION AND GENETICALLY MODIFIED FOOD

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Abstract: Genetically modified organisms (GMOs) have become a part of our daily lives. Genetics applied in food production is a topic, the consideration of which involves conflicting ethical issues, and highly opposing opinions. On one side, we have the proponents of GMOs as a 'welfare' for mankind, because, according to them, this kind of new technology should improve the quality of life and to provide sufficient food for all people. Opponents of GMO foods indicate possible effects on human health and are warning us that the product of this 'playing' with genetics can result in monstrous organisms.

For the public to form the appropriate attitude and informed opinion on GM technology and its consequences, provision of timely and easily understandable and objective information is necessary, which should help in shedding the light on the true nature of GMOs and the role of the Codex Alimentarius.

This paper focuses on the EU countries and their relation to this type of food.

Key words: Genetically Modified Food, Health Information, The European Union, Codex Alimentarius

JEL classification: Q13

UDC 606:604.6(4-672EU); 366.54:061.1(100)

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INTRODUCTION

Genetics is the science that began to develop as an independent scientific discipline in the mid-nineteenth century (Đelic, N., Stanimirović Z. 2004. p.1.) as a result of experiments performed by the priest Gregor Mendel from Brno (Moravia). Mendel had, in 1865, by crossing various varieties of peas concluded that there were units of heredity, which were transmitted from generation to generation. Just four years later (1869), Belgian F.Mišer isolated the DNA (deoxyribonucleic acid). These two discoveries have laid the foundation for modern genetics as a science, which gained significant prominence in the twentieth century.

The last decade of the last century brought rapid commercialization of research in the field of molecular genetics. GMO (genetically modified organism) crops are becoming an integral part of American agriculture and rapidly occupy (66.8 million hectares) increasing percentage of arable land (Stanković Ž., 2011). The Roslin Institute in Edinburgh (Scotland) in 1997. 'Born' the lamb Dolly. More than half of the crop in soybean and cotton crops, and about a third of maize in the United States, are occupied by transgenic crops. About 40 species of agricultural, genetic engineered cultures are approved for market in the U.S. and 60-70% of the products in U.S. supermarkets contain components of transgenic organisms. A new era of prosperity or decline of humanity is at the door.

GMOs are the controversy of the modern age, and the society is faced with a new technology that is insufficiently understood and about which there is not enough information. Grasping the essence of the problem is not underpinned by the various definitions of GMOs which may vary depending on its source. Those who advocate GMOs represent them as organisms whose genetic traits are changed in order to improve their nutritional value and increase resistance to external factors. On the other hand, opponents of GMOs argue that man has no legitimate right in trying to change the nature, and that it will fire back like a boomerang. It is necessary to consider and reflect on the famous myth is that the Earth has too many people and not enough food, and that the solution to this situation in the so-called. genetic revolution (Lappe FM , J. Collins and P. Rosset 1998).

GMOs can significantly increase yields, are more resistant to drought and salty soil, they are contributing to the reduced use of fuel and reduced CO_2 emissions. GM crops are resistant to pesticides and this type of product in general may lead to solving the problem of food shortage in the world. Counterarguments are based on claims that there may be unintended harm to other organisms, reducing the effects of pesticides, the possibility of crossing with other species, and the negative effects on human health (eg, resistance to antibiotics and the emergence of new allergies).

Regardless of the arguments pro and contra, the fact that the cultivation of GMOs requires new, expensive technology, purchasing of new seeds every year, and the patent protection of the discoverer of new species.

Despite warnings constantly coming from the opponents of GMOs, the number of such crops is growing much faster in the world than in the EU (European Union).[77] Germany and Austria are the strongest opponents of the cultivation and consumption of GMOs.

CODEX ALIMENTARIUS

Codex Alimentarius (WHO & UN 2013), is the organization founded by the World Health Organization (WHO) and the Food and Agriculture Organization (FAO) under the auspices of the UN. Codex was established in 1963. with the intention to protect consumers and to introduce control of food safety. Codex has more than 20 state commissions working on defining standards and decision guidelines of internationally controlled production and food security. A particularly important role of Codex is concentrated in the area of solving problems related to genetically modified foods and biotechnology.

Unfortunately, this organization has, under the influence of pharmaceutical and agricultural corporations and manufacturers of genetically modified seeds and food, changed its primary goal, and instead of protecting the interests of consumers, it has become a promoter of companies that profit from the production of GMOs. Codex is closely associated with the World Trade Organization (WTO), and WTO uses the guidelines elaborated by Codex, to introduce new rules and standards in international trade, which are inconsistent with the protection of consumers.

Dr. Rima Laibow from "Natural Solution Foundation" drew attention to the danger of the Codex Alimentarius Commission: "According to projections from the WHO document 'Diet, Nutrition and the Prevention of Chronic Diseases' issued in 2003, it is assumed that in the first 5 years after the global implementation of Codex Alimentarius, at least 3 billion people will die - 1 billion of the poorest part of the population from starvation, and 2 billion from diseases that are preventable and caused by malnutrition "(Laibow R., 2013).

WTO sets the global trade policy, and member states must comply with these rules, and must not reject the Codex guidelines, because they would be subjected to sanctions. The EU has banned the import of cattle whose diet was supplemented with growth hormones, from the United States and Canada (Pasarić S., Pasarić Z., 2013).[78] Due to non-compliance with WTO rules, EU is required to annually pay 116 million USD to U.S. and $ 11 million to Canada. This situation persists for more than 10 years. EU

[77] *In Feb 2011. ISAAA (International Service for the Acquisition of Agri-biotech Applications) has published statistics on GMO farmland in the world. IN 2010. year in 29 countries on all continents 148 million hectares increase in the area under GMO crops was 10% compared to the previous year. It is encouraging that Europe with its 91,500 ha of arable land, with only 2 approved GMO crops (maize MON810 and potato Amflora) has decreased compared to 2009. year.*

[78] *In 1994. The FDA has approved the company Monsanto to produced genetically growth hormone, which is injected cows despite scientists warned that it 400-500% increased risk in men who consumed milk and dairy products from these cows from breast cancer, prostate cancer and colon cancer . The claim was later proven experiments on rats.*

protects itself rom the genetically modified foods by paying high annual compensation. What about the countries that cannot afford compensation? The only option for them is to obey rules imposed by the WTO and Codex.

The European Parliament, on March 14th 2012. approved the agreement between the EU and the United States and Canada on hormone-treated cattle, thus solving one of the oldest disputes between the two economic powers. This agreement stipulates that the Union maintains its ban on imports of genetically treated cattle are reared using growth hormone in the United States and Canada, and in turn raise the quota of duty free import of high quality cattle from the two countries (European Parliament 2012).

The EU however has not been consistent in its opposition to the imposed rules. During 2011, norms prescribed by Codex were introduced into EU legislation, which prohibit the use of unlicensed herbal remedies (Budak, Z., 2011). Under the new rules, traditional medicines from herbs must be approved or prescribed by a registered herbalist, and for obtaining of this certificate, the Food Directive 2004/24/EC stipulates that the plants has to be under research for a couple of years, and research for each single product costs about 100,000 EUR. [79]

The rules imposed by Codex today were introduced with the aim to provide huge profits to corporations that produce seeds and food, as well as companies engaged in genetic engineering. Is there, in such circumstances, room for doubt that GMOs pose a threat to the health of every person on this planet. Population is exposed to the lethal action of manipulation by lobbyists working on behalf of large corporations that profit within the chain of GMOs production. The next step is a complete ban on natural food supplements, alternative natural remedies, vitamins and minerals. All natural products, according to them, should be removed because they do not make a profit, while it is forgotten that we are all a product of nature. Natural products and dietary supplements are a direct threat to the profits of pharmaceutical companies and they want to eliminate that threat. What are GMO protectors offering in return are allowed toxic chemicals as additives in food and pharmaceutical pure chemicals under the guise of medicines and vitamins. Most foods will be subjected to radiation in order to extend their shelf life, and genetically modified food will no longer have to be marked as GMO.

Academic Dragan Škorić draws attention to the fact that "The specific genetic transformation is the so-called terminator technology, which posesses embedded gene that causes a complete reproductive sterility in the next generation. For these reasons, users of seeds are forced to buy new seeds every year (wheat, barley, soybeans). Opponents of GMO consider this technology 'genetic imperialism'. Interesting genetic transformation was implemented in the Japanese watermelon introducing genes from other species that provide fruit in the shape of a cube (suitable for transport) "(Škorić, D. 2009, p.9.).

What awaits Europe in the future? GMO campaign is led by the United States and Canada, while Europe will at some point have to give in to their pressure. A

[79] http://agroekonomija.wordpress.com/tag/direktiva-2004/24/ec/ *8 maj 2013th Herbs, vitamins, minerals, nutritional supplements, natural remedies and traditional teas from late April can no longer be used in the EU unless they have a certificate that cost about 100,000 euros! http://www.pressonline.rs/plus/zin/271665/eu-zabranjuje-i-srbiji-prodaju-lekovitog-bilja-prirodnih-lekova-i-meda.html*

strong EU position against growing GM plants is slowly easing, as confirmed by the areas under transgenic plants. The ground is being prepared for the introduction of new GMO animal products,[80] and neglected is the obligation for GMO products to be indicated on the label, because then it is much harder to sell. Britain adopted the Codex Alimentarius Commission, regardless of the protest of over a million of its citizens (Nikasinovic R., 2013). EU Member States have adopted most of the provisions prescribed by the Codex, except for the Czech Republic which is the last bastion of defense. With proven 'democratic' methods, all members countries of the WTO, will eventually be forced to agree to the guidelines of Codex whose projected goals are:

- Treatment of animals with antibiotics and hormones.
- 100% of genetically modified crops.
- Products of plant and animal origin subjected to radiation.
- Removing from the market eco-products and natural remedies.

We are increasingly faced with a 'conspiracy theory' and the growing number of supporters of this idea, claiming that behind the production of GMO is the objective to remove from the planet at least 3 billion people, primarily the poor, as well as those peoples not favored by the creators of the GMO (Nikasinovic R. 2013). Barack Obama recently introduced the law in the United States which represents another step towards absolute dominance of multinational corporations over the world's population. Big pharmaceutical companies have almost achieved their main goal of a long struggle to burn all its competitors (Cocker, J. & A. Celentano, 2010). A set of 'standards' and 'guidelines" was established and designed by the United Nations, and supported by the WTO (World Trade Organization). The purpose of these standards is the absolute control of what and how people are able to grow, sell and eat, and what types of dietary supplements are allowed to be produced and sold.

Codex is definitely characterized as a tool of the rich world structures, because it eliminates the natural organic farming and hands over complete control over the food to the Monsanto Company as the largest producer of genetically modified food. He who is able to control the food will be able to control the entire population. That opens the way for a new form of ruling over the people, disguised in the concern for 'feeding' humanity.

[80] *The genetic modification of animals, which includes not only terrestrial but also aquatic species, a branch of genetic engineering, which today is certainly experiencing the fastest progress and extensive research. This type of practical applications GM organisms causing the fiercest debate in terms of food safety and consumer health protection. According to current knowledge, commercialization and sale of GM animals are not officially permitted anywhere in the world (Chassy, 2004).*

THE EUROPEAN UNION IN A DEFENSE ATTEMPT AGAINST GMOS

The emergence geneticsally modified organisms should have meant the beginning of a more efficient biological modality for solving many problems the mankind is facing today. First of all, it is a matter of world hunger, and for this problem the offered solution was in increasing the quality and fertility of crops, improving the food quality, crop resistance to diseases, insects and weeds, through the very application of GMO technology. In the light of facing disastrous consequences for the human population, since 2003, a network has started to develop in the EU, called GMO FRE European Regions and Local Authorities), whose main principles are: co-existence, precaution and responsibility of the EU officials and institutions in the prevention of the GMO introduction in the European countries (Roseboro, K., 2013). The basic legal act of the European Union on GMO is Directive 2001/18/EC. Specifically, pursuant to Article 23 Directive 2001/18 /EC, it is possible to use the so-called. protection clause, under which member states may restrict or prohibit the sale and/or importation of GMO and GMO products on their territory (GPL 106).

In the European Union there is now a prevailing view that GMO requires special regulations because of the risk to human health. The European Economic Community (now the EU) in 1990. adopted Directive 90/220, which is related to the release of GMOs into the environment. These were all individual regulations, because all until 1997. there was not one specific act related to GMOs. The adoption of the new Act, which was related to food produced from GMOs, was allowing Member States to individually adjust their domestic regulations governing the production and placing on the market of GMO products, which has led to uncoordinated solutions within the Union. In 1997, the Union adopted the Regulation no. 258/97, which covered the area of GMO foods. This Regulation defined mechanisms for obtaining import and production of GM foods. To obtain permission, it was required to provide evidence that these products do not have harmful effects on health and the environment. However, the Regulation does not apply to products that have already received approval, as well as the requirement that the product must be labeled as a GMO product, which resulted in many individual countries beginning to bring national laws on labeling of GMO products. Faced with individual regulations on labeling GMO products, the Commission adopted Regulation 1813/97 and 1139/98, which required labeling of products produced from already approved GM soy and corn seeds, and in year 2000, it defined the requirement for products containing at least 1% of GMOs to be clearly marked.

Regulation 1829/2993 on genetically-modified organisms for use in human and animal nutrition and the application of this regulation achieves the global objective of ensuring a high level of protection of life and health of humans, animals, environment and consumer interests, and on the other hand ensures the effective functioning of EU internal market. This Regulation was amended by Regulation no. 1830/2003, which regulates the labeling and monitoring of GMOs on the market. It is particularly

significant because it ensures the protection of human and animal health, through the introduction of the safety assessment, which meets the highest standards at EU level, rather than in the market of GMOs. In the new regulations from 2003, the EU differentiates in labeling of GMO products between products produced from GMOs and products produced using GMOs, and the latter are not regulated under new legislation. A threshold of 0.9% was introduced, instead of 1%, for labeling of GM food and feed, and the threshold of 0.5% instead of 1%, for the presence of GM material in food and feed, and raw materials for processing, which received positive risk assessment byte Scientific Committee and the European Food Safety Authority, but they have not received a marketing authorization (Vasić, D., & Škorić, D. 2005)

The main objective of the regulation of this matter within the EU is to protect human and animal health by applying the highest standards. Regulation on the labeling and tracking (traceability) covers all GMOs that have been authorized by the EU, so that the customer can identify who put the product in the market, and who produced it.[81] In the event that a product is consisting of or containing GMOs that: it must be indicated in writing which are its GMO ingredients, and the product must be libeled with a unique identification number. This issue is regulated by the Directive 2000/13/EC on the harmonization of the laws of the

Member States, relating to the labeling, presentation and marketing of food, were able to invoke the safeguard clause in the previous Directive 90/220/EEC. This feature is retained in Directive 18/2001 EC (Article 23), which replaces Directive 90/220/EEC. The safeguard clause can be called if the state has reasonable cause to believe that GMOs that got written permission to be placed on the market, have adverse effects on human health or the environment. The state may prohibit the use and sale of that GMO on its territory. Member States have used nine times the possibility of invoking the safeguard clause.[82] There are 6 countries that are using this safeguard clause. These are Austria, France, Greece, Hungary, Germany and Luxembourg. During 2004, there have been initiatives to eliminate the possibility of invoking the safeguard clause, but the proposal did not receive the required majority and remained in force in the new Directive. Clause is mostly used in relation to maize MON810.

Regulation on the labeling and tracking (traceability) cover all GMOs that have been authorized by the EU, to be on the EU market. Monitoring means that the customer can identify whether the product contains GMOs (Article 4) or is produced from GMOs (Article 5). This Regulation provides tracking products through the chain of production and distribution.[83] In addition to monitoring requirements, Regulation 1830/2003 sets the requirement for labeling of GMO

[81] *Regulation (EC) No 1830/2003 of the European Parliament and of the Council of 22 September 2003 concerning the traceability and labelling of genetically modified organisms and the traceability of food and feed products produced from genetically modified organisms and amending Directive 2001/18/EC.*

[82] *Three times on this clause called Austria, France twice and one time Germany, Luxembourg, Greece and the United Kingdom.*

[83] *This means that if genetically engineered seeds as a raw material of a food product, a company that sells seeds must inform the customer that the genetically modified seeds, the company that purchased seed is also required to maintain a register of companies that have purchased seed. On the other hand, the farmer is required to notify each customer of the harvest to the harvest of the GMO and the GMO seeds.*

products. It states also that all products must be clearly labeled, so that the end user is given a choice. Directive 2000/13/EC defines the harmonization of awls of Member States related to the labeling, presentation and marketing of food.

Increased revenue generated through the use of GMOs in the production is the most visible in developing countries. The world's great powers, in pursuit of its interests frequently use means of economic pressure and blackmail, thereby achieving the transformation of underdeveloped countries into its subordinates.

The promoters of this policy, which represents a new way of enslaving the people, are multinational companies with global domination and control of the market. Globalization has provided the multinational companies with the global market, where they have the monopoly, and that has led to the fact that consumers are marginalized and forced with 'subtle' methods of manipulation to adapt to the dictates of the market, regardless of the consumer demands. [84]

THE ROLE OF THE MEDIA IN THE EU

To be able to clarify the role of the media in the process of introducing GMOs into the territory of the EU, we have to start from the research on the importance of the media and their role in contemporary society.

The media is one of the most important phenomenon of mass society. They are present in all areas of social life and are intertwined with politics, sports, education, family, entertainment, public and private life. British scholar Paul Wilkinson interprets the term “media” in a very broad context and under it comprises all the ways and channels of information transfer, and all the formal and "informal media" (Wilkinson, P. 1997). Francis Bal defines the media "as a technical equipment that allows people to communicate and convey thoughts, regardless of their form and their ultimate goal" (Bal F. 1997, p. 1). Man cannot live in this world without interacting with other people. In today's globalization, unfortunately, people are alienated from each other, overdosed with information, which they decreasingly share. Individuals and groups are becoming more focused on the 'contact' with the media that are transmitting information to them, while creating at the same time the attitudes of individuals and society.

Increasing differentiation and segmentation of the media in communicating with 'its' audience has shaped new forms of mass communication, which is increasingly moving away from communication in the traditional sense. This media scene is increasingly serving the interests of special interest groups that exert their influence on the media, and thereby elaborate methods for using media. Traditional media and the public have become disoriented with the advent of new media. Study of the Reuters Institute says that, if the trend continues, we will have media that no

[84] *With the latest judgment of the European Court of Justice has spoiled plans proponents of genetically modified foods. The honey containing pollen of genetically modified crops cannot be found on store shelves. This verdict companies, which have been pledged to genetically modified organisms obtain approval in the EU, suffered a severe blow.*

longer contain news. This will happen because the money for advertising migrates to new media (Reuters Institute, 2009).

EU, regardless of the reference to the democratic trend and identical orientation of the media, is not protected from this kind of media policy. How to guarantee the authenticity of data which transferred to EU citizens, if nobody has any reasonable arguments to refute the fact that the whole media system is orchestrated by a narrow world center, operated by the 'global company'. European media scene shows an evident lack of quality. Investigative journalism is present in the negligible time slots on public and commercial channels. News often have the character of the tabloids, especially on the commercial channels. As a result, viewers are unable to find the information they need for democratic decision making. Although in the EU there are about 6,500 TV channels, 1,809 regional and local channels, 269 entertainment channels (The European Audiovisual Observatory. 2008)., the television market in reality is very concentrated in terms of ownership and participation of the audience. In most countries, several channels attract the greatest number of viewers. The media industry in Europe succumbed to the media conglomerate. The political pressure on regulators and public broadcasting is widespread. Media concentration is a common problem of modern EU media.

Over 70% of lobbyists in Brussels are working for the corporate interests of the few mega-companies (EU Reporting from Brussels. 2007). Spokespersons from Brussels, consider that many of the problems arise because small media journalists are underpaid and work in very difficult conditions, are writing insufficiently verified stories because they have no time to conduct research. In such conditions, prepared statements they receive from large corporations, are forwarded to the audience, with no checking. Mastery of information transferred by media includes manipulation with that information, and media control. "Manipulation can be defined as a deliberate, system and controlled process or set of processes by means of which a manipulator, using symbolic resources, in the, for him, adequate psychosocial circumstances, transmits to the crowd, through the means of communication, certain messages, intended to influence the beliefs, attitudes and behavior of a large number of people, so that they may, in matters in which there is no public consensus, and for which they are vitally interested in, adapt to the attitudes and values of the manipulators, without even realizing it "(Šušnjić, Đ. 2011 . p.42.). Among the many economic factors that promote globalization, the role of multinational companies is of particular importance.

The question is not, whether the media are functioning or not, the question is how much and how they influence the mind and behavior (Džinić F. & Bačević Lj., 1977, pp. 211-212). Another major problem is the Americanization of European media. This means adopting the American model of organizing communication centers, production and programming patterns, as well as U.S. media products in much of the world, even in Europe. This term indicates that the media in Europe are accepting proven U.S. manipulative methods in order to persuade the European audience that GMO foods are foods that will save our lives and the world at large. Media in the USA had much easier job in preparing the ground for the introduction of GMO products, than it was possible to be done in the EU.

GMOs in the EU have been strongly opposed by various NGOs, groups and associations. Initially these consisted essentially of ecologist organizations (Greenpeace, Friends of the Earth, etc.), As well as supporters of the Green political parties and organic agriculture associations. The circulation of certain information on the internet gave it credibility due to multiple repetition that ended up making it seem reliable The publicity given to various associations' denunciation of GMOs has been noteworthy, particularly in the case of the media. The latter have played a significant part in making GMOs widely known and in highlighting their potential dangers, especially at the end of the nineties when many journalists became increasingly opposed to GMOs, and at the beginning of the 2000s with their growing rejection. A number of journalists focused on risks and expressed standpoints opposed to GMOs, sometimes entering into opposition movements themselves (Durant & Lindsey, 2000; Kassardjian, 2002). Similarly reacted some of the leading European media companies. To number a few: The Telegraph,[85]The Independent,[86] The Guardian [87]and many others.

Public opinion in the EU was given the opportunity to be informed, to participate in a variety of talk shows and discuss GMOs. Created was the impression of open media activity in trying to contribute that the full truth about GMOs comes into public. However, when in September 2012, the study was published in the prestigious journal Food and Chemical Toxicology, by the team of scientists from the French University of Caen (Caen), led by Professor Gilles-Eric Seralinie, which proves disastrous effects of GMO products for human health, a media campaign to discredit the conclusions of Seralinie's study was launched just a few hours after that this study was published. This campaign was based on typical charges, which are a part of the regularly applied procedure in cases when it is necessary to discredit of anthem research result of the distinguished scientists.

The whole history of the commercialization of the media, from the time when the was Monsanto corn seed was planted in the United States in 1992, is filled with bribery of government officials, corruption of scientists, officials of the State Department's pressure on the EU and other countries, fraudulent advertising campaigns, which have, for two decades, fed people's heads that GM foods are the answer to world hunger.

Scientific control of both media and the GMO business, as was hewn yet again this time, is a chain of cooperation between Monsanto and GMO agrochemical cartel, EU commissioners, and EFSA [88]scientists, the mainstream media and some members of the government - the EU member states, including Spain and the Netherlands (Đorović B., 2013).

[85] *2011-04-02, The Telegraph (One of the UK's leading newspapers) http://www.telegraph.co.uk/earth/agriculture/geneticmodification/8423536/Genetically-modified-cows-produce-human-milk.html*

[86] *Sunday 20 April 2008 The Independent (One of the U.K.'s leading newspapers) http://www.independent.co.uk/environment/green-living/exposed-the-great-gm-crops-myth-812179.html*

[87] *2013-03-27, The Guardian (One of the UK's leading newspapershttp://www.guardian.co.uk/environment/2013/mar/27/pesticide-bees-scent-food-n...*

[88] *EFSA is EU Scientific Organization which regulatory issues in the domain of food.*

CONCLUSION

Multinational companies its global power exercise through control over three major markets: the market for goods and services, financial market and the information market. This creates a new quality of capital that affects the entire system. The economy was transformed into an important 'weapon' that enslaves economically and technologically underdeveloped and poor countries.

Mass media have an important told in this process. The very character of the society creates the conditions for smooth media manipulation, because the whole system is directed towards the capital and profit, while other values are totally marginalized. The media, which are generally owned by powerful companies, are supporting a new form of global economic conquest of the world. GMO food from America and part of Canada is penetrating into the EU despite Europe's attempts to defend itself and to stop its penetration in European soil.

The citizens of Europe and the rest of the world are deprived of the truth about this new way of producing food. In a variety of skillfully orchestrated media manipulations that are driven by the global capital, information and misinformation meet, so that the huge part of mankind remains in unresolved dilemma whether GMO helps humanity to survive or is it genocidal weapon of richest clan in the world. At the request of concerned and frightened citizens, many governments have introduced a detailed, long-term monitoring system through which they must pass each GMO.

If we want to get to the truth, we must establish a public discussion that is based on facts. The European Union is split over whether to allow genetically modified products, or to ban them. It is the responsibility of the European Commission to regulate solutions to this very sensitive subject.

EU's protection from total globalization at the same time preserves the Member States in the classical form of the state and the nation within its group of new 'rushing' type of capitalism that destroys all national barriers and creates 'its' single market. Until genetics scientists persuade us to the contrary, GMO will be just a new successful weapon in the war with the ultimate goal is the control of humanity as a whole.

REFERENCES

[1] Agroekonomija (2013). Direktiva 2004/24/EC. http://agroekonomija.wordpress.com/tag/direktiva-200424ec

[2] Bal F. (1997). Moć medija. Beograd: Klio.

[3] Budak Z. (2011). EU zabranila biljne preparate. http://metro-portal.hr/eu-regulativa-zabranila-upotrebu-biljnih-preparata-u-britaniji/58332

[4] Cocker J., & Celentano A. (2010). High time we went. Crom Alternative Exchange Association. http://cromalternativemoney.org/index.php/en/media/news/codex-alimentarius-ljekovito-bilje-uskoro-zabranjeno-u-eu.html

[5] Chassy B.M. (2004). Insuring the safety of foods derived from nutritionally-enhanced plants and animals. 11th AAAP Congress, Kuala Lumpur, Malezija, 19-23, septembar 2004. Zbornik radova (1), 19-23.

[6] Džinić F., Bačević Lj. (1977). Masovno komuniciranje u SR Srbiji. Beograd: BIGZ.

[7] Durant, J. & Lindsey, N. (2000). The great GM food debate - a survey of media coverage in the first half of 1999 London, Parliamentary Office of Science and Technology, Report 138. http://www.parliament.uk/post/report138.pdf.

[8] Đelić N., Stanimirović Z. (2004). Principi genetike. Beograd: Elit Medica.

[9] Đorović B (2013). Dokaz da GM ubija. http://www.balkanmagazin.net/zdravlje/cid142-58886/dokaz-da-gm-ubija

[10] European Parliament (2012).

[11] http://www.europarl.europa.eu/sides/getDoc.do?type=TA&reference=P7-TA-2012-0075&language=EN&ring=A7-2012-0025#BKMD-3

[12] EU Reporting from Brussels. 2007 http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52007SC0032:EN:NOT

[13] ISAAA (International Service for the Acquisition of Agri-biotech Applications), (2011). Statistics on GMO farmland in the world. http://www.fooddemocracynow.org/blog/2013/feb/25/global_growth_of_gmo_crops_overblown/

[14] Kassardjian, E. (2002). Appropriation de concepts en situation d'éducation non formelle, Cas d'une exposition scientifique sur les OGM. Lyon, Université Claude Bernard, Thesis.

[15] Laibow R, (2013). Diet, Nutrition and the Prevention of Chronic Diseases. http://www.portalsvijesti.com/teme/nwo/codex-alimentarius-plan-depopulacije/

[16] Lappe F. M., Collins J.,&. Rosset P. (1998). World Hunger: 12 Myths. New York: Grove Press.

[17] Nikasinovic R., (2013). Kako uništiti svetsko stanovništvo. http://www.srpskapolitika.com/VIdeo/latinica/nikola.html

[18] OJL 106, vol 44, 17.4.2001.

[19] Pasarić S, Pasarić Z. (2013). Codex Alimentrarius - što možemo učiniti?

[20] Press (2013). EU zabranjuje i Srbiji prodaju lekovitog bilja, prirodnih lekova i meda! http://www.pressonline.rs/plus/zin/271665/eu-zabranjuje-i-srbiji-prodaju-lekovitog-bilja-prirodnih-lekova-i-meda.html

[21] Regulation (EC) No 1830/2003 of the European Parliament and of the Council of 22 September 2003 concerning the traceability and labeling of genetically modified organisms and the traceability of food and feed products produced from genetically modified organisms and amending Directive 2001/18/EC.

[22] Reuters Institute for the Study of Journalism. 'What's Happening to Our News', Oxford Media Convention 2009.

[23] Roseboro K., (2013). Will non-GMO compete with or complement organic?

[24] www.non-gmoreport.com/articles/june2013/non-gmo-organic-compete-compliment.php

[25] Stanković Ž., (2011). GMO usevi se u svetu šire, Evropa izuzetak, Ekologija magazine, http://www.ekologija.rs/gmo-usevi-se-u-svetu-sire-evropa-izuzetak

[26] Škorić, D. (2009). Genetički modifikovani organizmi (GMO) - budućnost čovečanstva ili zabluda. Časopis za procesnu tehniku i energetiku u poljoprivredi / PTEP, 13(1), 5-12.p.5.

[27] Šušnjić, Đ. (2011). Ribari ljudskih duša: ideja manipulacije i manipulacija idejama. Beograd: Čigoja štampa, str. 42.

[28] Television across Europe (2005). Regulation, Policy and Independence Reports, press releases, media coverage, available at: www.eumap.org/topics/media/television_europe

[29] The Guardian (One of the UK's leading newspapers

[30] http://www.guardian.co.uk/environment/2013/mar/27/pesticide-bees-scent-food-n...

[31] The Independent http://www.independent.co.uk/environment/green-living/exposed-the-great-gm-crops-myth-812179.html

[32] The Telegraph http://www.telegraph.co.uk/earth/agriculture/geneticmodification/8423536/Genetically-modified-cows-produce-human-milk.html

[33] The European Audiovisual Observatory.(2008)

[34] http://www.obs.coe.int/oea_publ/iris_special/2008_02.html

[35] Understanding the Logic of EU Reporting from Brussels, Analysis of Interviews with EU correspondents and spokespersons, (AIM) Working Papers 2007/3, Bochum/ Freiburg: Project. http://www.aim-project.net/uploads/media/Publications.pdf

[36] Uzogara SG. (2000). The impact of genetic modification of human foods in the 21st century: a review. Biotechnology Advances 18:179-206.

[37] Vasić, D., & Škorić, D. (2005). Propisi za obeležavanje GMO i proizvoda od njih u EU. Journal of Scientific Agricultural Research, 66(5), 165-170.

[38] WHO & UN (2013). Food and Agriculture Organization Codex Alimentarius, International Food Standards. http://www.codexalimentarius.org/

[39] Wilkinson, P., (1997). The Media and Terrorism: A Reassessment, London: Frank Cass. Introduction

ORGANIC AGRICULTURE AND SUSTAINABLE URBAN DEVELOPMENT: The Belgrade – Novi Sad Metropolitan Area Case Study

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Abstract: Sustainable agriculture plays an especially important role in sustainable urban development. Urban (intra- and peri-) agriculture contributes to reducing food miles and shaping of urban open space. Belgrade-Novi Sad metropolitan area has valuable organic production potentials based on: eco-climatic conditions in environmentally sound peri-urban areas with potentials for agro-ecotourism development, R&D, extension and infrastructure facilities and closeness to city markets and export traders. Organic production of grain and industrial crops for processing, and organically produced fruits and vegetables, honey and medicinal plants and spices have good sales prospects in the metropolitan market niches. But, small organic family farms, poorly equipped and insufficiently integrated into the value chain, still generate low profits that discourage new entrants in the sector. The authors in the paper analyze organic production sector in Belgrade – Novi Sad metropolitan area (with brief emphasis on the state of the organic sector in the world, EU and Serbia), including comparative analysis of selected organic vs. conventional family farms production efficiency and ecological sustainability, organic food market structure, consumption patterns and, particularly, potentials for diversification on organic family farms.

Key words: Organic Farming, Production Efficiency, Diversification, Organic Food Market, Sustainable Urban Development

JEL classification: Q00, Q13

UDC 631.147:711.551(497.11)

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INTRODUCTION

Urban agriculture implies presence of different production systems – from law input production systems in agricultural enclaves within the build-up city (vegetables, fruits, mushrooms, nurseries, etc.) to intensive production of fresh food products for city green markets and retail chains (meat, milk, fruits, vegetables) in the peri-urban zone. Urban surroundings and the vicinity of the market and R&D centers enable access to innovation, reduce food miles, increase food safety and quality and decrease production costs. Urban agriculture improves the environment, landscape and quality of life for the city's population and contributes to employment growth and social inclusion (Piorr et al., 2011, pp. 13,70-71). On the other hand, intensive agriculture in urban surroundings potentially causes, but also suffers from numerous ecological risks related to soil, water, air, climate, biodiversity and landscape. Pressures for agricultural land conversion and fragmentation are particularly strong in peri-urban areas. Environmentally sensitive and protected urban areas are among the most affected.

Organic agriculture as a production system that "sustains the health of soils, ecosystems and people"[92] is inevitably an integral part of sustainable urban agriculture, that should be defined as "the optimally balanced set of farming system, from organic through integrated to conventional types, satisfying a range of regional ecological, social and economic functions in any region, given its ecological characteristics and the competing objectives of stakeholders" (Tait, Morris, 2000, p. 250).

Higher urban consumers' purchasing power and changing lifestyle enable the production and sale of local, highly valued organic and other niche market products. Increasing number of emerging/reviving middle class consumers in transition countries, occupied with new lifestyle's trend[93] toward healthy food and environmental sustainability is oriented to organic food consumption.

Multifunctionality is inherent to urban agriculture, and especially to urban organic agriculture. Supply chains tend to be shorter, organic products usually are less processed and its marketing and distribution are increasingly associated with so-called community-organized agriculture initiatives (direct sale at the farm's door, box-delivery schemes, and the like), which aim to establish more direct linkages between producers and consumers (Osswald, Dittrich, 2010, p. 17). The development of mutually supportive organic agriculture and agro-ecotourism entrepreneurships on organic farms[94] in peri-urban HNV oasis may represent significant source of employment and income for small farms, vulnerable social groups and growing number of suburban newcomers.

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[92] *According to IFOAM definition, organic agriculture relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. Organic agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved, http://www.ifoam.org/growingorganic/definitions/doa/.*

[93] *Three core dimensions are usually used to construct lifestyle groups of consumers: 1) social status, 2) altitudes and preferences, which together are often referred to as "mentality", and 3) behaviour, like shopping habits, food shoices and food preparation, which are determined not only by cultural and symbolic functions but also by access to food and infrastructure (Osswald, Dittrich, 2010, pp. 18-21).*

[94] *When agro-ecotourism evolves around an organic farm, it is referred to as eco-organic tourism.*

When agro-ecotourism evolves around an organic farm, it is referred to as eco-organic tourism.[95] Eco-organic tourism activities include: accommodation in buildings built according to ecological architecture and landscape planning; on-farm consumption or selling of organic foods and beverages; educational programmes and training (e.g. organic gardening, wild herbs collection and drying; traditional food and beverage processing; use of renewable energy sources). The practice of organic certification of farmhouse structure and facilities is highly recommended as it attracts more environmentally-conscious tourists. Requirements for such farms include:

- organic agriculture production; naturalistic and didactic activities;
- natural resources tutorship (e.g. at least 5 percent of the farm must be devoted to ecological infrastructure and at least 40 botanical local species must be present in the infrastructure);
- recreational green areas;
- ecological buildings (with respect to construction materials and cleaning agents used, energy saving and waste management, and prevention of air pollution);
- tourist offers (both on-farm and in neighboring natural reserves);
- gastronomic offers (organic, seasonal and local); and sustainable transportation facilities (FAO, 2004, pp. 16-18).

Organic production of grain and industrial crops, fruits and vegetables, honey and medicinal plants and spices have good sales prospects in the market niches of Belgrade – Novi Sad metropolitan area[96]. Spatial and development planning documents and protected area management plans[97] highlight potentialities of HNV areas in peri-urban zones for the development of organic agriculture and eco-tourism (tourist belt: NP Fruška gora – Landscapes of outstanding features Avala and Kosmaj, and further towards Oplenac royal wine cellars and Arandjelovac Spa), but there are no specified proposals for eco-organic tourism development.

In the analysis below, attention is paid to: organic production sector in Belgrade – Novi Sad metropolitan area (with brief emphasis on the state of the organic sector in the world, EU and Serbia), organic vs. conventional family farms production efficiency and ecological sustainability; organic food market structure and consumption patterns, and especially to the potentials for diversification of activities on organic family farms.

[95] *Several Italian Regions (e.g. Tuscany, Emilia-Romagna, Lazio) have adopted organic agriculture as a best agricultural practice in protected areas in order to support tourism activities and provided financial and educational supports to farmers for organic management conversion (FAO, 2004, p. 18).*

[96] *Metropolitan area includes the city of Belgrade (17 municipalities), the city of Novi Sad (2 municipalities) and municipalities that gravitate to them: Beočin, Irig, Sremski Karlovci, Inđija, Ruma, Pećinci, Stara Pazova, Pančevo, Smederevo, Smederevska Palanka, Ub i Lajkovac.*

[97] *Regional Spatial Plan for the Administrative Area of the City of Belgrade (2011), Sustainable Development Master Plan for Fruška Gora 2012-2020 (2011), Spatial Plan for Landscapes of Outstanding Values Avala - Kosmaj Special-Purpose Area (Draft, 2012), Management plan for Landscape of Outstanding Values Avala 2011-2020 (PC Srbijašume, Draft, 2010)…*

DATA SOURCES AND METHODOLOGY

On-desk research was combined with field research. Results were processed using standard statistical methods. During the discussion and formulation of conclusions and suggestions, the analytical-synthetic method was used. A number of scientific papers, project results and official documents of European and national institutions, networks and organizations, relevant for organic farming and agro-eco tourism, and support politics, were analyzed and quoted. The authors also consulted national legislation and relevant spatial planning and protected areas management documents. A considerable part of data is obtained from the database of the National Association for organic production *Serbia Organica* (NASO), which, in accordance with the Law on Organic Production (Official Gazette of RS, 30/2010) includes producers, processors and distributors who are in the certification system as well as those who in the last 3 years owned the certificate for organic production. Also, the data of the Ministry of Agriculture, Forestry and Water Management (MAFWM), the Statistical Office of the Republic of Serbia (SORS) and The Republic Geodetic Authority (RGA) are used.

PRODUCTION AND MARKET OF ORGANIC PRODUCTS

World. According FiBL-IFOAM Survey 2013, organic agricultural area in the world tripled from 11 million ha to 37.2 million ha between 1999 and 2011. The countries with the largest agricultural area under organic farming in 2011 were Australia (12 million ha), Argentina (3.8 million ha) and USA (1.9 million ha). Twenty-nine percent of the world's organic land is in Europe. The EU countries with the largest organic agricultural area are Spain (1.6 million hectares), Italy (1.1 million hectares), and Germany (1 million hectares). Non-agricultural organic area (aquaculture, forests, and grazing areas), mainly for wild collection, occupy an additional 32.5 million ha (Finland 7 mill. ha, Zambia 5.9 mill. ha, India 4.5 mill. ha).

Organic agricultural land (including in-conversion areas) globally has the share in total agricultural land of 0.86%, in Europe 2.2%, in the EU 5.1%, and at the level of individual countries, the largest share of organic area in total agricultural land have Falkland islands (35.9%), Liechtenstein (29.3%) and Austria (19.7%).

Permanent grasslands cover 63% of the organic agricultural land in 2011, arable land 17%, permanent crops 7%, other agricultural land occupies 1% while for 12% there are no details. Cereals occupy 40% of the total of 6.3 million hectares of arable land, green fodder 35%, oilseeds 8%, protein crops 5%, vegetables 4% and other crops 8%. Key permanent crops on the total of 2.6 million ha of permanent crop organic land are: coffee (23%), olives (21%), nuts (11%), grapes (10%), and cocoa 9% and tropical and subtropical fruit 7%. Wild berries, medicinal and aromatic plants and wild fruits are the key organic wild collected products.

There were 1.8 million organic producers in 2011 worldwide, of which almost 290,000 in Europe. The largest number of organic producers was reported in India (547,591), Uganda (188,625) and Mexico (169,570) (FiBL-IFOAM, 2013, pp. 25-29).

According to Organic Monitor data, the global market reaches 62.9 billion USD in 2011 (in 1999 15.2 billion USD). Demand for organic products is mainly in North America and Europe; these two regions comprise more than 90 percent of sales. The countries with the largest organic markets were: USA (29 billion USD), Germany (9.2 billion USD) and France (5.2 billion USD) while the highest per capita consumption of organic products is registered in Switzerland (250.4 USD), Denmark (225.7 USD) and Luxembourg (187.3 USD) (FiBL-IFOAM, 2013, pp. 25, 29).

Processing and marketing of organic products are of crucial importance to sustainable development of the organic sector. Since the late 1990s, organic farming policy has developed from a one-dimensional area support instrument to more integrated approaches considering demand-oriented measures as well as crosscutting instruments of information, training, research, education and capacity building (Stolze and Lampkin, 2009, p. 241).

Serbia**.** Organic production in Serbia (organic and conversion areas), including areas used for the collection of wild berries, mushrooms and medicinal herbs, according to recent research (März et al., 2013, pp. 12-14) is taking place on 829,000 ha. Almost 11,100 ha of those areas is agricultural land under orchards (46.4%), field crops (41.3%), meadows and pastures (7.6%) and vegetables (4.8%). The most important Serbian organic products are fruits - plums (1,228 ha), apples (1,183 ha), and sour cherries (436 ha), and berries – raspberries (692 ha) and strawberries (53 ha). The main regions for organic fruit production are Central and Southern Serbia, where the most important organic certified cooling plants are located. The collection of certified organic wild mushrooms is also well developed, primarily in the Southwestern parts of the country[98]. Other important organic crops are cereals – maize (819 ha) and wheat (566 ha), and oilseeds – mostly soya (144 ha). Cereals are mainly produced in the region of Vojvodina. There is growing interest in producing other organic oilseeds and oils, like sunflower, pumpkins and rapeseeds as well as spices and medicinal herbs, mushrooms and various sorts of vegetables. Certified organic vegetable production takes place on 529 ha. Fresh, frozen and preserved vegetables, especially ground red peppers, are mainly exported but some fresh vegetables are also oriented to domestic market. Organic livestock breeding is still a large unused opportunity of Serbian agriculture (Katić et al., 2010, pp. 250-251), while it is encouraging tendency of a growing number of animals in conversion period (Table 1).

[98] *International donors oriented towards rural development (as USAID Agribusiness Project of fruit production and processing development in Serbia) and investors (private organic trade companies) are very interested in the further development of organic fruit production in Central Serbia (Renko et. al., 2010, p. 59).*

Table 1. Organic plant and animal production in Serbia

	2009*	**2010****	**2011*****	**2012******
Plant production (ha)				
Cereals	400	568	731	1,386
Other crops from arable field	410	506	186	3,199
Meadows and pastures	2,290	3,800	3,733	839
Vegetables, medicinal and aromatic herbs etc.	427	309	286	530
Fruits	4,970	3,452	4,551	5,145
Crop production	***8,497***	***8,645***	***9,524***	***11,099***
Wild dried medicinal and aromatic herbs; Frozen, salted and dried wild mushrooms	***230,000***	***818,000***	***818,000***	***818,000***
Total plant production	**238,497**	**826,645**	**827,524**	**829,099**
Animal Production (heads of animals)				
Cattle, buffalos, horses, donkeys, etc.	n/a	236	1,531	2,394
Pigs, goats, sheep	n/a	49	57	983
Poultry	n/a	50	1,150	3,600
Bee-hives	n/a	320	670	4,394

Sources: März et al. Organic agriculture in Serbia. At a glance. GIZ. Belgrade., 2011, 2012**, 2013******.*

**** Filipovic, (2012).*

According to MAFWM database, in 2008, there were 224 farms, registered for production of certified organic food in Serbia. The survey data from 2012 suggest that more than 4,000 farmers are involved in organic production.

AFC/FIBL Organic Farm Survey (2010), conducted on 140 organic farms in Serbia, has shown that more than 60% of the surveyed farmers have holdings of less than six hectares and only 25% of 10-20 hectares. Every other farm with organic production hires seasonal workers. Cropping patterns change with size: farms larger than 20 ha grow cereals and oilseeds, while small farms with less than five hectares cultivate berries and other fruits. Vegetables are grown mostly on farms whose size ranges from 5 to 10 ha. The larger the farm, the bigger the area under organic production, but it never accounts for more than 15-25% of total land available. All farms having more than 5 ha, however, have land that is not cultivated and is used either as pastures or simply left fallow (März et al., 2013, p. 15).

Organic production can be a significant source of income for small farms and small-scale processing businesses in environmentally sensitive areas and for vulnerable social groups and growing number of newcomers in the suburban areas. But, poorly equipped with organic inputs and storage and packing facilities, with

low investment potential and insufficient level of integration into the value chain, they at present generate low profits that discourage new entrants. Main bottlenecks are related to a lack of storage facilities - products are available only during peak periods, when the growers flood the market. Sorting is only carried out by every second farmer and usually according to size, rarely according to quality. Products are packaged in plastic, in bulk mostly 40% lighter than 100 kg, with just some 36% of it heavier than 1 ton, without any forwarding logistics for rendering.

Organically certified agricultural product in Serbia is typically sold to wholesalers and to food processing companies, with which almost 70% of the growers conclude contracts prior to the start of the season. Direct selling e.g. on the green market is practiced only by 20% of the farmers. Due to such a system, the markup in price they obtain for their organic produce is very moderate (with 10-20% on the average) and confirms that value-addition is not generated on the farm level. Almost 90% of Serbian organic products are exported, mainly to the EU.[99] Serbia exports mainly raw organic materials, and in the future further reduction of production costs and improved efficiency in organic food processing industry might be necessary, primarily in production lines with considerable EU market potentials (soya intermediate and feed products; cereal grains and flour, cereal and potato starch; various sorts of vegetable; organic apple pectin and anthocyanin pigments, etc.) (März et al., 2013, p. 38).

The domestic market is still small and concentrated to consumers with increasing purchasing power in the metropolitan area. The market niche for organic products is highly dependent on consumers' confidence in the certification system. The operators hold individual organic certificates. Production is certified by two types of bodies:

- Certification bodies approved by the Ministry of Agriculture: only the products certified by these certification bodies can be sold in Serbia.
- Certification bodies not approved by Ministry of Agriculture: These certification bodies works in international supply chains, the products that they certify cannot be sold in Serbia.

Certification organizations that issue certificates to producers of organic food since 2012 were registered in the Accreditation Body of Serbia (ATS) in accordance with the standard LST EN 45011:2004.

Belgrade-Novi Sad metropolitan area**.** Demand for organic products in the Belgrade-Novi Sad metropolitan area is evident and reserved for a growing consumer group of greater purchasing power and higher standards in the diet. Serbian GDP per capita increased from €3,144 in 2006. to approx. €4.290 in 2011. Only in the City of Belgrade, 40% of total GDP in 2010 was realized, with GDP per capita level index of 177,8% of national average (SORS, 2012, pp. 120-121).

Market growth depends on consumers' perception that the quality of organic products continues to be higher than that of non-organic products. However, quality is

[99] *Target markets for organic products from Serbia are primarily those that do not yet show signs of saturation, and are large enough to absorb additional quantities (Italy, France, Germany, UK) (März et al., 2013, p. 34).*

a very subjective concept. It can relate to the product's attributes, such as the perception that a product is healthier, tastes better, or is simply more popular or fashionable. But it can also relate to the consumer's ethical values, seeking a better environment with less pollution or more locally produced products.

Based on the market survey done by the NASO, the average buyer of organic products in Serbia is a woman aged from 25 to 40, educated and aware of the impact of unsafe food on health (März et al., 2013, p. 31). A field research, condacted in the territory of the City of Novi Sad (January-March, 2010) found that respondents consider organic food is healthy (50% of respondents), quality (32%) and environmentally friendly (15%). They are ready to buy organic products (84% of respondents) and to pay more for certified organic food (55%) but the number of real consumers is still small (14% of respondents are regular buyers, 26% occasional buyers, and 12% buyers in exceptional occasions). Poor supply structure and unsufficient marketing are among the main reasons for not buying organic food (Vlahović et al., 2010, pp.17-18).

Organic food may be found on a small number of greenmarkets, in specialised health food stores and in several supermarket chains, mostly located in Belgrade and Novi Sad. The offer is concentrated in large retail chains and green markets. According to the survey, conducted in Novi Sad in 2011, respondents buy organic foods mainly to the green markets (40%), supermarkets (28%) and hypermarkets (21%), while in specialized shops buys only about 10% of the respondents (Vlahović et al., 2011, p. 450). Occasional (also called *medium*), consumers of organic products in supermarkets and hypermarkets are becoming an important market segment and marketing strategies focus on translation of these categories in the regular (also known as heavy) consumers as the most important segment of the organic markets (Đokić et al., 2011, p. 425).

The biggest demand is for fresh fruit, vegetables and spice plants, as well as for fruit and vegetable preparations, organic flour, oil, milk and dairy products, meat,eggs and honey. In organic production in the metropolitan areas dominate grains and oilseeds (South Banat, Srem, to a lesser extent), and there is increasing share of organic fruits (Srem, primarily on Fruska Gora slopes) and vegetables (mainly in the region of South Bačka). However, food prices generally grow several times faster than income, and price remains an important factor in consumers' preference for buying more expensive organic products. Comparative survey of market prices for some of fresh conventional and organic vegetables is given in Table 2.

Table 2. Prices of vegetables obtained from conventional and organic production, din/kg

	March 2012		March 2013	
	Conventional*	Organic**	Conventional*	Organic***
Onion	50	100	60	160
Garlic	300	500	400	-
Leek	120	200	100	160
Carrot	60	100	80	200
Celery	150	200	150	160
Potato	50	100	70	160

*Sources: * Agricultural Market Information System of Serbia, http://www.stips.minpolj.gov.rs/stips/detaljni; **TERRA'S, Subotica, http://www.terras.org.rs/index.php?&sadrzaj=terras/pijaca/organskapijaca; *** Hema-Kheya-Neye, http://www.hemakheyaneye.com/?sr_sveze-organsko-povrce-i-voce,95&sSort=price.*

Production of fresh vegetables is the fastest and most efficient model of sustainability and promotion of organic farming in peri-urban areas. Production efficiency and ecological sustainability of organic vs. conventional vegetable production was analyzed below[100], in the example of tomato, which is one of the most common vegetables and significant source of income for family farms in the metropolitan area and in Serbia as a whole (Table 3 and Table 4).

Table 3. Calculation of direct costs margin in tomato production

	RSD/ha		EUR/ha	
	Conventional production	Organic production	Conventional production	Organic production
A. Sales revenue*	1.860.000,00	2.080.000,00	16.441,60	18.386,30
B. Total direct costs**	1.449.380,51	1.560.999,01	12.811,90	13.798,56
C. Direct costs margin (A - B)	410.619,49	519.000,99	3.629,70	4.587,74

**Value of production of tomatoes first and second quality class (whith the proportion of 50%: 50% in the conventional production and 80% : 20% in organic production in favor of the first class) and value of production subsidies.*
***B - seeds, mineral fertilizers (organic and industrial), pesticides (organic and industrial); machinery operations; hoeing; manually pulling weeds; harvesting; packaging; mulch sheets, irrigation, other costs.*
Source: Own calculation based on data of Institute "Tamiš" Pančevo Agricultural Advisory Service.

[100] *Using direct costing calculation method for production efficiency analysis (Vasiljević, Subić, 2010) and French MAAP-DGER IDEA methodology for ecological sustainability evaluation (Pingault, 2001, Louis, 2003, Subić et al., 2006), of tomato production on selected family farms in the metropolitan area.*

The results obtained by the comparative analytical calculations of direct costs margin in conventional and organic tomato production indicate the following:

- Revenues are higher in organic compared to conventional tomato production by 11.8%, as well as direct costs, but with a better ratio of revenues and direct costs in organic production (1,33:1,00) than in conventional one (1,28:1,00);
- Achieved margin coverage, which reflects the gross financial result, is higher in organic farming compared to conventional for 26.39%.

According to IDEA methodology, there are nine indicators, i.e. methods for evaluation of ecological sustainability in farming. In this analysis we used three indicators related to fertilization and use of pesticides and fuels.

Table 4. Use of fertilizers, pesticides and energy in the production of tomatoes

	Conventional	**Organic**
Fertilizers		
Mineral industrial fertilizers (kg/ha)	1.250,00	-
Mineral organic fertilizers (kg/ha)	-	1.950,00
Pesticides		
Industrial pesticides (l/ha)	33,85	-
Organic fertilizers (l/ha)	-	50,00
Fuels		
Diesel D2, (l/ha)	241,58	-
Eco diesel, (l/ha)	-	278,15

Source: Own calculation based on data of Institute "Tamiš" Pančevo Agricultural Advisory Service.

Although, according to the results in Table no 5, consumption of fertilizers, pesticides and energy in organic production is higher compared to the consumption of inputs in conventional production, organic origins of these inputs to a greater extent coresponds to the principles of ecological sustainability in agriculture.

Based on the aforementioned, it can be concluded that organic tomato production in comparison with the conventional, is more profitable, environmentally friendly and socially acceptable, i.e. provide more income along with a higher level of environmental protection.

Small farms have always had important role in urban agriculture. They contribute to the creation of added value, especially on the form of local and high value niche products and provide important social, cultural and environmental services (public goods) for urban inhabitants, in build-up city enclaves as well as in the city periphery.

Belgrade-Novi Sad metropolitan area has a significant organic production potential based on: valuable eco-climatic conditions in environmentally sound peri-urban areas with potentials for agro-ecotourism development, agricultural R&D,

extension and infrastructure facilities, improved inputs supply and closeness to city green markets and retail chains, food processing companies and export traders. For the aforementioned reasons, the state and structure of small organic farms are of great importance in the Belgrade-Novi Sad metropolitan area (Table 5).

Table 5. Organic farms in Belgrade – Novi Sad metropolitan area in 2012

Legal status	**Activity**	**Products**	**Number of operators***	**(%)**
A. Natural person	Plant production	Cereals, industrial crops, fruits, vegetables, spice plants, fodder crops	26	81,2
	Livestock production	Milk (kow, sheep), meet (beef, pig, sheep, poultry), eggs	6	18,8
Subtotal A			**32**	
B. Legal entity	Plant production	Cereals, industrial crops, fruits, vegetables, spice plants, fodder crops	16	33,3
	Livestock production	Milk (kow, sheep), meet (beef, pig, sheep, poultry), eggs	1	2,1
	Processing	Cereals, industrial crops, medicinal and spice plants, fruits, soups, vinegar, tea, coffee, chocolate	11	22,9
	Import	Baby food, cereals, medicinal plants and herbs, fruit, dietetic products, dehydrated mushrooms, chocolate	20	41,7
Subtotal B			**48**	
Total A+B			**80**	

** Some of the operators perform more activities.*

Source: Summary records of authorized organizations for 2012.

The statistics, as well as author direct contact with producers and other stakeholders in the organic sector in the metropolitan area (Filipovic, 2012, pp. 8) resulted in the following main conclusions on the status and trends in the development production and marketing of organic products:

- The number of organic farms is generally still very small compared to the total number of farms (33,104 farms only in the Belgrade region - SORS, 2013, p. 8).
- Organic livestock breeding is a very poorly developed, although there is an obvious demand, mainly for milk and milk products[101].
- Production on farms owned by natural persons ends on the field and to be profitable it must be realized on larger holdings. For this reason, in this part of the sector is the small number of successful producers, who started as an enthusiast a number of years ago and have invested significant investment funds in this production over time.
- The entry of organic products on the shelves of large retail chains requires stable quantity, quality, continuity of supply and additional investment in sorting and packing. Small producers cannot meet these requirements without entering into associations. Associations provide their members savings in the inputs procurement, transport and storage and better bargaining position in placing the goods on the market and applying for grants and loans. Establishment of associations and regional centers for organic production and their active role in improving the production, sale and promotion of the consumption of organic products facilitates the entry of new producers in the sector.
- The basic preconditions for profitable organic production on small farms, in addition to greater financial support from the state, is diversification of farm activities towards the production of traditional and special local products of high value from organic materials and their direct sales within the activities related to tourism and recreation in suburban areas.

DIVERSIFICATION

Producers are promoting their organic products as a part of a healthier lifestyle. By forming the habit of consuming tasty, healthy and safe organic food, a step forward is made towards an 'organic lifestyle' - a lifestyle close to nature, which cherishes special values, including the awareness and care of health and improving one's quality of life. Higher income and dynamic and stressful way of life imply a higher need for daily/weekly recreation and contact with nature for growing number of people in big cities. If outdoor activities are combined with the purchase of healthy food for the family, directly from the farm, multiple interests of these urban inhabitants will be obviously met. On the other hand HNV areas, specially protected areas include certain restrictions for activities within their borders, including agricultural production. Organic farming is the best and easiest

[101] *"Bello organic" line of organic milk produced on organic dairy farm "Velvet" in Čurug and processed in Belgrade Milk Processing Company "Imlek" appeared on the market in early 2013, http://www.blic.rs/Vesti/Drustvo/366288/Imlek-plasirao-organsko-mleko-na-trziste.*

way to meet these legal restrictions, and when developed together with eco-tourism, offering additional opportunities for income generation and employment of usually small organic farms in the suburbs.

Belgrade-Novi Sad metropolitan area has valuable HNV oasis. Among them, according to potential for eco-organic tourism development, it can single outs NP "Fruška gora" and Landscapes of outstanding values "Avala" and "Kosmaj".

Fruska gora[102] is an island mountain in Pannonia plain with unique deposits of fossil fauna and flora and numerous protected, rare and endangered species. There are about 1500 flora species growing on the protected zone of national park. Fruška gora is also on the lists of: internationally important plant areas (IPA), internationally important bird areas (IBA), selected areas for butterflies (PBA) and on the list of potential EMERALD areas in the Republic of Serbia. Fruska Gora's foothills are covered with arable fields, vineyards, orchards, meadows and pastures which give a distinctive mosaic landscape to the Vojvodina plain, while higher ground, above 300 meters, is covered with deciduous forests. Linden covers 10,000 ha. This tree is interesting for bee pasture and more than 30,000 bee hives is placed every year.

Landscapes of outstanding values "Kosmaj" and "Avala" were put under protection with the aim to preserve and enhance: the picturesque landscape characteristics; primary values of the landscape forest structure and quality, diversity and abundance of the habitat's flora and fauna, quality of water, soil and air, cultural heritage goods and their atmosphere; the creating of conditions to enable sustainable development of tourism, recreation and agriculture, i.e. spatial planning and land utilization and the construction of facilities for these purposes.

Avala[103], the northernmost moutain in Šumadija, with its height of 506 metres dominates the wider Belgrade area. There are about 600 plant species, including medicinal plants, as well as 21 lichen species. Some of them are protected as natural rarities. There are also 8 herpetofauna species (2 of which are natural rarities), and 67 ornithofauna species (21 of which are natural rarities). Agricultural area covers about 20% of the territory of the protected area in its eastern and northeastern parts and is represented mostly by extensive agriculture.

Kosmaj[104] is a low (626 m high) and a relatively small island mountain of about 1,500 ha on the territory of Belgrade city municipalities Mladenovac and Sopot. The living world of Kosmaj mountain includes: 550 plant species, including relic, sub-endemic and rare ones; 300 fungi species; 24 herpetofauna species; 51 mammalian species, 96 bird species, and a large number of insect species. More than 70% of the mountain area is under oak and beech forest. Rural landscape – arable lands, orchards and meadows - prevails on the mountain foothill, on the territory of old and picturesque villages of Rogač, Nemenikuće, Amerić, Koraćica and Velika Ivanča.

Regional Spatial Plan for the Administrative Area of the City of Belgrade (Official Gazette of the City of Belgrade, 38/2011, p. 85) as well as Spatial Plan for Landscapes of Outstanding Values Avala - Kosmaj Special-Purpose Area (RASP, 2012, pp. 80, 100-

[102] *http://www.npfruskagora.co.rs/.*
[103] *http://www.srbijasume.rs/avalae.html.*
[104] *http://www.srbijasume.rs/kosmaje.html.*

101) provide for the development of agro-eco and rural tourism and recreation in conjunction with eco/organic fruit (and to a lesser extent vegetable, horticulture and medicinal and aromatic plant) growing and livestock breeding in environmentally preserved areas in northern parts of the Mladenovac and Obrenovac municipalities and in the southern parts of Sopot, Barajevo and Lazarevac municipalities.

Belgrade Chamber of Commerce and Fund Organic Serbia are working since 2011 on the project *Environmental ring* around Belgrade with the aims to provide a regular supply of green markets and supermarkets in Belgrade with quality organic products throughout the year, along with the development of various tourist services on organic farms and in eco-tourism facilities in the HNV areas on the city periphery.[105]

Sustainable Development Master Plan for Fruška Gora 2012-2020 defined as priorities development of mixed plant-livestock organic production on eco family farms in combination with other multifunctional activities, like manure composting, traditional food processing using organic raw materials and eco- and agrotourism. The vision of the master plan in 2022 in organic farming include:

- a number[106] of eco-farm for production of organic milk and beef, sheep and goat meat and traditional meat products, poultry and eggs, while preserving old varieties and breeds;
- 1,220 ha of organic (field, greenhouse and organic garden) vegetable production, with special emphasis on the development of multifunctional bio-garden as part of tourism offer with the involvement of women's NGOs in this area;
- The output of 61,000 m^3 of high-quality bioactive compost, using manure from above-mentioned eco-farm, suitable for application in organic production of field crops, vegetables, fruit and grapes;
- Organic farming and the collection of medicinal and aromatic plants in the Park and its protection zone, with the involvement of unskilled workers, marginal social groups and persons with no regular source of income, and the production of essential oils of pine needles, medicinal and aromatic plants (Assembly of AP Vojvodina, 2011, pp. 83, 93-120).

NGO Green Network of Vojvodina participates in several projects of developing and promoting organic production and consumption in Vojvodina province and in the City of Novi Sad,[107] while eco-organic tourist services begin to develop on ethno-tourist farms (salasi), near Novi Sad.[108]

EU-wide urban policy development agenda includes the goals of multifunctional landscapes (and production of local or high value food in a more sustainable multifunctional landscape), sustainable resource management and

[105] *http://www.agropress.org.rs/tekstovi/18362.html.*
[106] *121 dairy farms, 9 goat farms, 4 sheep farms, 7 pig farms and 2 poultry farms.*
[107] *http://www.zelenamreza.org/.*
[108] *For example, organic production of soya, fruits, vegetables and poultry combined with accommodation and meals at the farm, as well as organizing workshops for preschool and school-age children in the farm of Matic family (Brkin salaš) in Čenej, http://www.panacomp.net/ domacinstva?mesto=seoski%20turizam_cenej2.*

conservation of habitats and cultural landscape, and emphasizes the need for a new kind of multilevel, multifunctional governance to manage and fund these valuable ecosystem services (Piorr et al., 2011, pp. 13, 114-123).

Local authorities initiate sustainable tourism development process, while the success depends on the realized partnership between a wide range of stakeholders at the level of local communities, coordination between corresponding actors and policies at the national level and of cooperation and exchange of experiences with relevant international organizations (Popović et al., 2012, p. 51).

The specificity of ecotourism, especially of eco-organic tourism is the existence of a large number of SMEs, including small family farm businesses. The core issue is their efficient networking in competitive clusters with Destination Management Organization (DMO) or Destination Management Company (DMC) as a cluster leader. Building cross-sector partnerships, networks and clusters strengthens destination, allowing it to compete on a larger scale (Jegdić, 2010, p. 74).

Protected areas also, independently or within the newly established Association of National Parks and Protected Natural Resources of Serbia (2010), together with cities and regional administrations, tourist organizations and local action groups should intensify activities in the implementation of experiences of European partners in sustainable tourism development (EUROPARC Federation, 2010, pp. 12-17), both in protected areas and in their surroundings, thus contributing to sustainable development of local communities.

CONCLUSION

In Serbia, organic products are produced in only 11,722 hectares a total of 5.109 million hectares. Low purchasing power of consumers is a factor limiting demand and consumption. It is encouraging that the younger generations are motivated to spend more in these products in order to preserve health and the environment. Most of the produced organic products are exported (about 90%), mainly in the EU. Domestic demand is concentrated in the metropolitan area of Belgrade and Novi Sad. Small farms engaged in organic farming need assistance to procure the appropriate equipment and machinery and to diversify activities in order to raise production efficiency and competitiveness on the national, regional, and EU market. The forthcoming EU IPARD assistance is, therefore, a major chance for the organic sector.

REFERENCES

[1] Assembly of AP Vojvodina / Skupština AP Vojvodine. (2011), Master plan održivog razvoja Fruške gore od 2012. do 2022. godine.

[2] EUROPARC Federation. (2010). European Charter for Sustainable Tourism in Protected Areas. EUROPARC Consulting Limited.

[3] FAO. (2004), The scope of organic agriculture, sustainable forest management and ecoforestry in protected area management. Working Paper No. 18: FAO Environment and Natural Resources Service. Sustainable Development Department.

[4] FiBL & IFOAM (2013), The World of Organic Agriculture. Statistics and Emerging Trends 2013.. Frick and Bonn.

[5] Filipović, V. (2012), Stanje u organskom sektoru u Republici Srbiji za 2011. godinu. Istraživačko razvojni centar – Institut ˝Tamiš˝ Pančevo.

[6] Đokić, N., Kočić-Vugdelija, V., Berber, N. (2011), Uticaj razvoja tržišta na promociju organskih poljoprivrednih proizvoda. Ekonomika poljoprivrede, 58(3), str. 425-441.

[7] Jegdić, V. (2010), Model razvoja ekoturizma u Vojvodini. Ekonomski horizonti 12/2010, str. 63-78.

[8] Katić Branko, Savić Mirjana, Popović Vesna (2010), Organska stočarska proizvodnja – neiskorišćena šansa Srbije. Ekonomika poljoprivrede, God LVII, бр. 2 (155-352), 2010, str. 245-256.

[9] Louis, N. (2003), Construction d' indicateurs de la durabilité agricole à partir de données de comptabilités de gestion et étude exploratoire sur le systèmes de production bourguignons. UMR INRA-ENESAD CESAER, Dijon.

[10] März, U., Stolz, T., Marija, Kalentic, Emilija, Stefanovic, Jovana, Vuckovic (2011), Organic agriculture in Serbia. At a glance. Belgrade: GIZ.

[11] März, U., Marija, Kalentic, Emilija, Stefanovic, Ivana, Simić (2012), Organic agriculture in Serbia 2012. Belgrade: GIZ and National Association for Organic Production "Serbia Organica".

[12] März, U., Marija, Kalentic, Emilija, Stefanovic, Ivana, Simić (2013), Organic agriculture in Serbia 2013. Belgrade: GIZ and National Association for Organic Production "Serbia Organica".

[13] Official Gazette of the City of Belgrade, 38/2011. / Službeni list Grada Beograda, 38/2011. Izmene i dopune Regionalnog prostornog plana AP Grada Beograda.

[14] Osswald, N., Dittrich, C. (2010), Sustainable Food, Consumption and Urban Lifestyles. The Case of Hyderabad/India. In Hagedorn, K. Werthmann, C., Zikos, D., Chennamaneni, R. (eds.). Emerging megacities Discussion Papers, Volume 3/2010.

[15] Pingault, N. (2001), Une évaluation multicritère pour des politiques multifonctionnelles. Notes et études èconomiques, No 14, UMR INRA-ENESAD CESAER, Dijon.

[16] Piorr, A., Ravetz, J., Tosics, I. (2011), Peri-urbanisation in Europe: Towards a European Policy to sustain Urban-Rural Futures. University of Copenhagen/ Academic Books Life Sciences.

[17] Popović, Vesna, Milijić, S., Vuković, P. (2012), Sustainable Tourism Development in the Carpathian Region in Serbia. SPATIUM International Review No. 28, December 2012, Belgrade, pp. 45-52.

[18] RASP - Republic Agency for Spatial Planning of the Republic of Serbia/Republička agencija za prostorno planiranje Republike Srbije. (2012), Prostorni plan područja posebne namene predela izuzetnih odlika Avala – Kosmaj. Nacrt plana.

[19] Renko, N., Renko, S., Butigan, R., Vuletic, A., Schar, B., Berner, N. (2010), Deliverable No 7.1 - National report per country on the organic production on the basis of bibliography and data collection. FOCUS-BALKANS, FP7: Ecozept GbR and University of Zagreb, Croatia.

[20] Statistical Office of the Republic of Serbia - SORS. (2013), Census of Agriculture 2012 in the Republic of Serbia – First results. Belgrade.

[21] Statistical Office of the Republic of Serbia – SORS. (2012), Statistical Yearbook of the Republic of Serbia 2012.

[22] Subić J., Popović Vesna, Cvijanović D. (2006), Mikromodeli za ocenu ekološke održivosti u poljoprivredi. Ekonomika poljoprivrede, 53(4), str. 987-997.

[23] Stolze, M., Lampkin, N. (2009), Policy for organic farming: Rationale and concepts. Food Policy 34 (2009), pp. 237-244.

[24] Tait, J., D. Morris. (2000), Sustainable development of agricultural systems: competing objectives and critical limits, Futures 32 (2000), pp. 247–260.

[25] Vasiljević Zorica, Subić J. (2010), Importance of the costs calculation at the family farms in Serbia. In Tomić, D., Ševarlić, M, eds. Agriculture in late transition – Experience of Serbia. DAES, Belgrade, pp. 123-137.

[26] Vlahović, B., Tomić, D., Popović, Vesna (2010), Stanje i perspektive potrošnje proizvoda organske poljoprivrede, Četvrti forum o organskoj proizvodnji, Selenča, Zbornik radova, str. 15-20.

[27] Vlahović, B., Radojević, V., Živanić, I. (2011), Istraživanje stavova potrošača o potrošnji organske hrane u Srbiji. Ekonomika poljoprivrede, 58 (3), str. 441-456.

MARKET AND TRADE PATTERNS OF ORGANIC PRODUCTS

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Abstract: The interest in organic farming is rising and is also reflected in the market and trade for the organic products, which has increased three times in the last ten years. EU member states show need for imports of organic products, despite the significant self-production. Serbia and other Western Balkan countries can take advantage of the opportunity and place substantial amounts of organic products on the international market. The main aim of this Paper is to present the organic farming results in Western Balkan countries and market perspectives for organic products trade.

The main contribution of the Paper is that it seeks to explain the trade patterns between the European Union and Western Balkan countries of agriculture and organic products on a more detailed level of analysis than it has previously been presented in the literature, and to support the further research on the organic agriculture as a sustainable, natural alternative for the intensification of production methods and presents a production management system that promotes the recovery of ecosystems. The countries included in the analysis are: Albania, Bosnia and Herzegovina, Croatia, FYR Macedonia, Serbia and Montenegro.

Key words: Organic Products, Trade, Trade patterns, Western Balkans

JEL classification: F14, F15

UDC 631.147:339.5(497)

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INTRODUCTION

Taken together, the share of Western Balkan countries in European exports in 2010 was 1.96 percent and in the imports 0.93 percent. Thus, Western Balkan trade developments are not important from the international markets' aspect, but they seem to be decisive for the development of these countries. Without intensifying trade relations, these economies might step further away from the sound economic recovery path. Currently, 0.61 percent of the world's reported agriculture land is certified organic agriculture. There are no recent data on the extent of non-certified organic agriculture. However, it is widely known that a large part of global food production systems is non-certified organic agriculture, often at subsistence level. With respect to the quality of sustainability of organic agriculture, two observations can be made:

- Sustainability from organic systems is based on standards that advocate restrictions or bans on the input side. However, metrically measurable standards on the impact side (e.g. minimum percentage of high quality ecological areas such as hedge rows, field margins and species rich wildflower strips, or minimum of crops in a rotation) would improve the sustainability of organic agriculture even more. As they are very region specific, such standards focusing on positive environmental impacts can only be introduced in regional or national standards as has been done in Switzerland;
- Organic agriculture is a multi-targeted approach to sustainability. Unlike conventional farming, it does not focus on individual high impact measures. For example, the "no till" technique used in conventional farming efficiently prevents soils erosion but needs more herbicides and soluble nitrogen fertilizers and often promotes soil borne diseases leading to need for additional fungicidal treatments.

Organic agriculture efficiently reduces environmental risks by not using some potentially damaging technologies of intensive agriculture such as pesticides, herbicides, synthetic nitrogen fertilizers, GMO crops or veterinary antibiotics and anthelminthic. The ecological goods and services of organic agriculture are reviewed in El-Hage Scialabba and Hattam (2002), Shepherd, et al. (2003) and Stolze, et al. (2000). In this paper the analysis are concentrated on the trade flows between Western Balkan countries and the European Union. There are two major reasons behind this choice. The first is related to the desire to explore the potentially integrative role of the trade in the countries' road to full membership. The second is more pragmatic. Comparative analysis of Western Balkan countries on a detailed level of data aggregation is frequently obstructed by the redeveloping statistical systems as a consequence of the relatively slower transition process (in comparison to Central European transition economies).

The structure of this paper is as follows. The next section presents the overall literature overview, the section 3 presents dynamics of the European Union

agriculture trade with Western Balkan countries. Section 4 presents the organic farming results in Western Balkan countries and market perspectives for organic products trade. Section 5 presents conclusions.

THEORETICAL FRAMEWORK

The literature on trade patterns within the context of EU integration is relatively abundant for Central and Eastern European economies. Gains from international trade are obvious, when countries sell goods and products to each other, this exchange is almost always to their mutual benefit (Krugman, 2006). Without trade the range of possible commodity combinations which are available for consumption with pre-assigned amounts of all productive factors is given by the production-possibility curve.

The fact that some trade makes a society "potentially" better off than it would be if it were restricted to autarky is expressed by the expansion of the consumption-possibility set which would include the production-possibility set as its subset. Assuming the non-satiation of each member of the society in the consumption of each commodity, it is clear that an increase in the quantities available will imply a uniform outward shift of the utility possibility frontier. That is, the society is potentially better off in the sense that there is a way of reallocating the enlarged totals of goods so as to make every person better off. The society is able to have more of all goods with some trade. The application of welfare economics to international economics takes the form of evaluating social and individual gains from different trading situation, particularly the evaluation of gains from free trade. Opening up an economy to free trade almost always leads to redistribution of real income and satisfaction, and hence it is not possible to describe the shift in social satisfaction through a single ordinal utility function of the conventional form, such as, a single non-intersecting indifference map. Economists cannot discuss the effects of international trade or recommend changes in government policy toward trade with any confidence unless they know their theory is good enough to explain the international trade that is actually observed. Thus attempts to explain the pattern of international trade. Who sells what to whom, have been major preoccupations of international trade. In the following paragraph the trade theory will be discussed. The discussion and examples are used from several authors (Findlay, 1987; Hardwick, 1990; O'Sullivan, 2003; Qaim).

The theory of absolute advantage (Adam Smith) is the ability of an economic actor - an individual, a household or a firm - to produce some particular good or service with a smaller total input of economic resources - labor, capital, land, etc. - per unit of output than other economic actors. In analyzing the theory of trade and economic specialization, it is important to distinguish absolute from comparative advantage, since it is comparative advantage that determines the potential welfare gains from specialization and trade, and not absolute advantage. However, in the

international trade, there are trade barriers and many countries use different forms of barriers. A trade barrier is a general term that describes any government policy or regulation that restricts international trade. The barriers can take many forms, including: Import duties, Import licenses, Export licenses, Import quotas, Tariffs, Subsidies, Non-tariff barriers to trade, Voluntary Export Restraints, Local Content Requirements. Most trade barriers work on the same principle: the imposition of some sort of cost on trade that raises the price of the traded products. If two or more nations repeatedly use trade barriers against each other, then a trade war results. Economists generally agree that trade barrier s are detrimental and decrease overall economic efficiency, this can be explained by the theory of comparative advantage. In theory, free trade involves the removal of all such barriers, except perhaps those considered necessary for health or national security.

Yield increases resulting from the so-called *"Green Revolution"* have slowed and are currently linked to soil degradation (Kaiser, 2004), which is considered a threat to food supply stability. Pimentel, et al. (1995) calculated a loss of nearly a third of the world's arable land to erosion within the last 40 years with an on-going loss of more than 10 million ha per year. Bellamy, et al. (2005) found massive losses of carbon in soils across England between 1978 and 2003. Their estimates ranged from 0.5 to 2 g soil carbon per kg soil per year with all but 8 percent of the investigated cropland affected by erosion – a factor the authors identified as the main reason for losses in soil carbon and therefore in soil fertility. This highlights that current land use practices are not sustainable. Reganold, et al. (1987), in comparing soils from organic and conventional farms in Washington, USA, found organic fields had topsoil's 16 cm deeper and a higher organic matter content which resulted in soils less prone to erosion. A long-term Swiss field experiment on loess soil that began in 1978 (Mäder, et al., 2002) found the aggregate and percolation stability of both bio-dynamic and organic plots were significantly higher (10 to 60 percent) than conventionally farmed plots. This also affected the water retention potential of these soils in a positive way and reduced their susceptibility to erosion. Soil aggregate stability was strongly correlated to earthworm and microbial biomass, important indicators of soil fertility (Mäder, et al., 2002). The long-term application of organic manure positively influenced soil fertility at the biological, chemical and physical level, whereas the repeated spraying of pesticides appeared to have negative effects. Compared to stockless conventional farming (mineral fertilizers, herbicides and pesticides), repeated measurements of aggregate stability in plots with livestock-based integrated production (mineral and organic fertilizers, herbicides and pesticides) found 29.4 percent higher values while in organic and bio-dynamic plots(organic fertilizers only), it was 70 percent higher (Siegrist, et al., 1998). The Swiss long-term study underlines the importance of using manure, by means of organic agriculture, as a good practice for soil quality preservation (Fließbach, et al. 2007). Similar results were obtained under on-farm conditions in the Netherlands in a polder soil, which is considered prime agricultural land for Dutch arable crop production (Pulleman, et al., 2003). The Rodale farming systems trial, that began in 1981 in Pennsylvania, USA, compared manure and legume-based organic agriculture systems to a conventional system based on mineral fertilizers (Hepperly, et al., 2006). It found the organic and conventional systems had similar soybean and maize yields whereas the

organic system showed an impressive increase in soils carbon of 574 kg per ha in the legume-based and 981 kg ha-1 in the manure-based system. Soil macro fauna, such as worms, ants and termites that are actively involved in the build-up of soil structure, have positive effects on water infiltration, drainage, water-holding capacity and soil aeration (Giller, et al., 2003). These and other beneficial soil biota helps process nutrients from residues for plant uptake while also creating stable organic matter. Several field studies found earthworms and other soil fauna such as carbides, spiders and staphylinides were more abundant in organic fields than conventional ones (Pfiffner and Niggli, 1996; Pfiffner, 1997; Pfiffner and Mäder, 1997; Birkhofer, et al., submitted). A more diverse food and micro-landscape (weeds and soil structure) and the absence of potentially toxic pesticides are the main factors favoring macro fauna in organic systems.

DEFINITION

Organic farming: this is a type of agricultural production that excludes the use of chemical synthetic pesticides and genetically modified organisms. The Reg. (EC) No 834/2007 defines organic production as an overall system of farm management and food production that combines best environmental practices, a high level of biodiversity, the preservation of natural resources, the application of high animal welfare standards and a production method in line with the preference of certain consumers for goods produced using natural substances and processes. The organic production method thus plays a dual societal role: on the one hand providing for a specific market responding to a consumer demand for organic products, and on the other hand delivering public goods, which contribute to the protection of the environment and animal welfare, as well as to rural development.

IFOAM (2011).defines organic farming according to four principles:

- health (it should sustain and enhance the health of soil, plant, animal, human beings and the planet as one and indivisible);
- ecology (it should be based on living ecological systems and cycles, work with them, emulate them and help sustain them);
- fairness (it should build on relationships that ensure fairness with regard to the common environment and life opportunities);
- care (it should be managed in a precautionary and responsible manner to protect the health and well-being of current and future generations and the environment).
- Organic agriculture is a system that uses less intensive practices. It is, therefore, expected to deliver far more ecological goods and services than conventional agriculture, even in its modified forms such as integrated farming or minimum tillage. Furthermore, organic agriculture efficiently reduces environmental risks by not using some potentially damaging technologies of intensive agriculture such as pesticides, herbicides, synthetic nitrogen fertilizers, GMO crops or veterinary antibiotics and anthelminthic.

The ecological goods and services of organic agriculture are reviewed in El-Hage Scialabba and Hattam (2002), Shepherd, et al. (2003) and Stolze, et al. (2000). In broad terms, organic agriculture can be described as increased diversification on both farm and regional scale. It is a system that leads farmers and rural communities to economic independence from expensive agricultural inputs through their use of participatory seed-breeding systems; natural bio-control agents; soil fertility management through recycling, nitrogen fixation and green manure; and habitat management as a prevention strategy against pests, diseases and weeds.

AGRICULTURAL TRADE OF WESTERN BALKAN COUNTRIES

The EU is the main trading partner for the WB countries, over 75% of the exports from Albania went to the EU-27, in Montenegro less than 40% of the country's total imports arrived from the EU-27, while this was true of over 60% of imports into Albania and Croatia. Manufactured goods excluding machinery and vehicles are generally the most important product category in trade Manufactured goods excluding machinery and vehicles made up by far the largest category of exports for all the WB countries except Croatia in the latest year for which data are available. This category of goods accounted for almost 62% of exports from Albania, almost 59% of exports from Montenegro. The largest category of goods exported from Croatia in 2009 was machinery and vehicles (29.7%) as it was for the EU-27 (41.5%). Manufactured goods excluding machinery and vehicles had also generally the highest share in imports. Most of the WB countries recorded that close to 30% of their imports fell into this category in the latest year for which data are available.

Table 1: International trade in goods, totals(million EUR)

	Exports		Imports		Balance	
	2000	2009	2000	2009	2000	2009
EU 27	849740	1094411	992695	1199196	-142956	-104785
HR	5188	7458	11327	15144	-6139	-7686
ME	461	277	974	1654	-514	-1377
MK	1178	1925	2105	3616	-927	-1691
AL	348	784	1587	3699	-1238	-2915
BA	908	1920	2928	5670	-2019	-3750
RS	1680	5630	3606	6691	-1926	-1061

Source: EUROSTAT (2011): Counties profile WB, available from: http://europa.eu/rapid/pressReleasesAction.do?reference=STAT/08/88&format=HTML&aged=0&language=EN&guiLanguage=enEurostat (online data codes: ext_lt_intertrd, ext_lt_maineu and cpc_etmain).

Deficits on external trade in goods in most of the Western Balkan countries The EU-27's exports of goods to the rest of the world grew by almost 30% between 2000 and 2009. Every enlargement country apart from Montenegro saw exports grow faster than the EU-27 over recent years. In Albania, Bosnia and Herzegovina, and Serbia exports more than doubled over recent years. Only in Montenegro did exports fall (by almost 40%) between 2005 and 2009. The EU-27's imports of goods grew by just over 20% between 2000 and 2009. The EU-27's trade in goods deficit in 2009 was just under 5% of total trade (exports and imports combined), a decrease from almost 8% in 2000. In both 2000 and 2009 the deficit in Albania was over 60% of total trade. The biggest change in this measure were in Serbia, which saw its deficit reduce from 36% of total trade to 9% between 2000 and 2009, and Montenegro, which recorded an increase from 36% to 71% between 2005 and 2009.

Table 2: Breakdown of imports of goods,2009(% of total imports)

	Food and Drink	Raw materials	Energy	Chemicals	Machinery/ vehicles	Other manufa. products	other
EU 27	6.1	3.9	24.2	9.4	28.5	24.6	3.2
HR	9.7	2.0	16.9	12.4	28.5	30.5	0.1
ME	23.0	3.0	12.6	10.1	21.6	29.7	0.0
MK	12.1	2.7	7.4	11.3	21.6	31.5	13.4
AL	14.6	3.3	15.3	8.3	20.2	35.7	2.5
BA	16.4	4.0	13.0	10.8	25.5	30.2	0.2
RS	7.2	3.8	16.1	17.0	26.6	29.2	0.1

Source: EUROSTAT (2011): Counties profile WB, available from: http://europa.eu/rapid/pressReleasesAction.do?reference=STAT/08/88&format=HTML &aged=0&language=EN&guiLanguage=en, Eurostat (online data codes: ext_lt_intertrd, ext_lt_maineu and cpc_etmain).

Table 3: Breakdown of exports of goods,2009(% of total exports)

	Food and drink	Raw materials	Energy	Chemicals	Machinery and ehicles	Other manufa. products	Other
EU 27	5.7	2.5	5.2	17.9	41.5	23.6	3.5
HR	12.0	6.4	12.8	9.7	29.7	29.4	0.0
ME	14.5	9.2	3.0	4.3	10.0	58.9	0.1
MK	17.9	3.6	1.1	4.5	5.3	41.5	26.1
AL	3.9	18.1	10.2	0.5	3.4	61.8	2.0
BA	5.1	21.8	8.9	3.4	16.7	43.9	0.1
RS	22.1	5.2	4.8	8.0	15.2	43.1	1.6

Source: EUROSTAT (2011): Counties profile WB, available from: http://europa.eu/rapid/pressReleasesAction.do?reference=STAT/08/88&format=HTML&aged=0&language=EN&guiLanguage=enEurostat (online data codes: ext_lt_intertrd, ext_lt_maineu and cpc_etmain).

The EU-27's exports of goods were equal to just over 9% of the gross domestic product (GDP) in 2009. In Albania, and Montenegro the share of exports in GDP did not exceed the EU-27 value. In all the other Western Balkan countries the figure for exports as a percentage of GDP was much higher, in particular in Iceland and the former Yugoslav Republic of Macedonia, where exports equaled over one third of GDP in the latest year for which data are available. The EU-27's imports were equal to just over 10% of GDP in 2009. Imports to each of the Western Balkan countries were equivalent to a higher proportion of the GDP than in the EU-27, most notably in the former Yugoslav Republic of Macedonia and Montenegro, where imports were equal to more than one half of GDP in the latest year for which data are available.

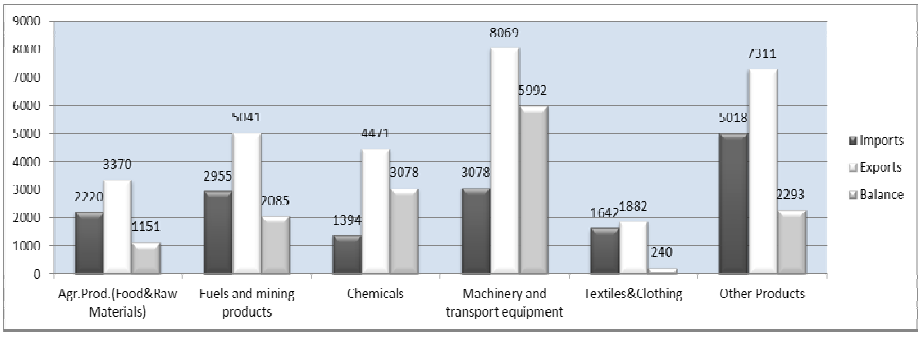

Figure 1: Western Balkans trade with the World and EU27(2011)

Source: EUROSTAT (2011): Counties profile WB, available from: http://europa.eu/rapid/pressReleasesAction.do?reference=STAT/08/88&format=HTML&aged=0&language=EN&guiLanguage=en, Eurostat (online data codes: ext_lt_intertrd, ext_lt_maineu and cpc_etmain).

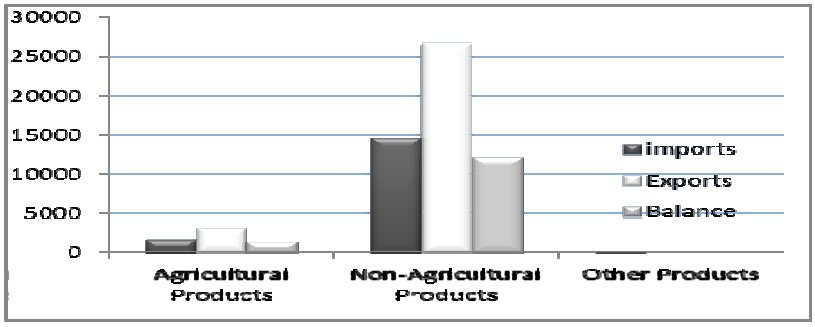

Figure 2: Western Balkans agricultural trade with the World and EU27(2011)

Source: EUROSTAT (2011): Counties profile WB, available from: http://europa.eu/rapid/pressReleasesAction.do?reference=STAT/08/88&format=HTML&aged=0&language=EN&guiLanguage=enEurostat (online data codes: ext_lt_intertrd, ext_lt_maineu and cpc_etmain).

Beside EU as a main trade partner of WB countries, is CEFTA as a modern, comprehensive trade agreement - very important for the cooperation and development of these countries. Chapter VI of the Agreement sets out a number of new trade topics to be addressed by the Parties. The Parties have agreed to a combination of specific commitments and evolutionary clauses in areas such as services, investment, government procurement and protection of intellectual property. In summary, the main objectives for each topic are:

- Services: a progressive liberalization and mutual opening of the services market.
- Investment: ensuring stable and equitable treatment of investors and complementing the trade liberalization gains with investment opportunities.
- Government procurement: a progressive and effective opening of the governments' procurement markets by May 2010.
- Protection of Intellectual Property: ensure adequate and effective protection of intellectual property in accordance with international standards, in particular with TRIPS.

These new topics are challenging, not only to the CEFTA Parties, but to all countries and trading blocs throughout the world. The CEFTA Parties have sought technical assistance to identify options available to them to meet the commitments undertaken and to ensure that their policies can adapt to the dynamic environment in which they must operate. They are co-operating closely with the EU and the WTO as appropriate on different aspects. In the table below are shoved the trade flows for 2011:

Table 4: Export and Import CEFTA, 2011

Exports		Imports	
Intra CEFTA	7241409	Intra CEFTA	6792189
Row	22252946	Row	48825420
EFTA	482248	EU	30198365
Turkey	608949	EFTA	872409
Russia	1306051	Turkey	1701982
China	212247	Russia	5099573

Source: EUROSTAT (2011): Counties profile WB, available from: http://europa.eu/rapid/pressReleasesAction.do?reference=STAT/08/88&format=HTML&aged=0&language=EN&guiLanguage=en, Eurostat (online data codes: ext_lt_intertrd, ext_lt_maineu and cpc_etmain).

Table 5: CEFTA Trade volume, 2009-2011

	2009	2010	2011
CEFTA	11.274.273	12.595.999	14.035.306
Rest of the World	55.285.090	62.173.288	71.019.142
Agricultural products			
CEFTA	3.231.098	3.540.203	3.807.670
Rest of the World	6.539.601	6.903.745	7.899.418
Non-agricultural products			
CEFTA	8.043.175	9.055.796	10.227.636
Rest of the World	48.745.489	55.269.543	63.119.724

Source: EUROSTAT (2011): Counties profile WB, available from: http://europa.eu/rapid/pressReleasesAction.do?reference=STAT/08/88&format=HTML&aged=0&language=EN&guiLanguage=enEurostat (online data codes: ext_lt_intertrd, ext_lt_maineu and cpc_etmain).

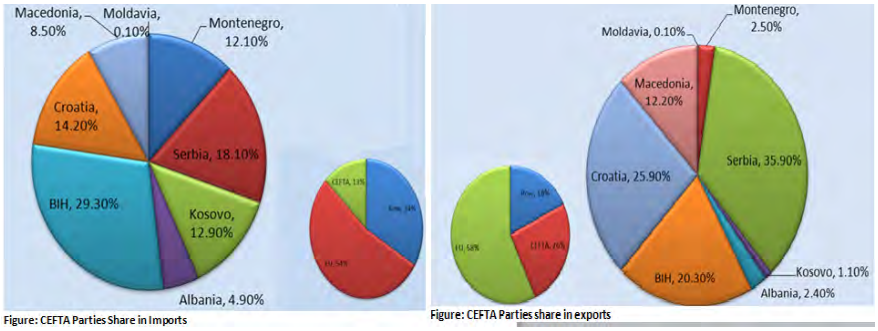

Figure 3-4: Exports/Imports of WB countries with CEFTA Source: CEFTA Parties 2011

Sources: EUROSTAT (2011): Counties profile WB, available from: http://europa.eu/rapid/pressReleasesAction.do?reference=STAT/08/88&format=HTML&aged=0&language=EN&guiLanguage=en, Eurostat (online data codes: ext_lt_intertrd, ext_lt_maineu and cpc_etmain).

ORGANIC PRODUCTS AND MARKET

Globally, organic production has been developing for many years. In 2009, 35 million ha of cultivable land were organically certified, and continued to rise to 37 million ha in 2010, compared to 29 million ha in 2005. In EU farmland under organic cultivation increased in the same period from 6 million ha to over 8 million ha, equivalent to a growth of 8-10% per year.

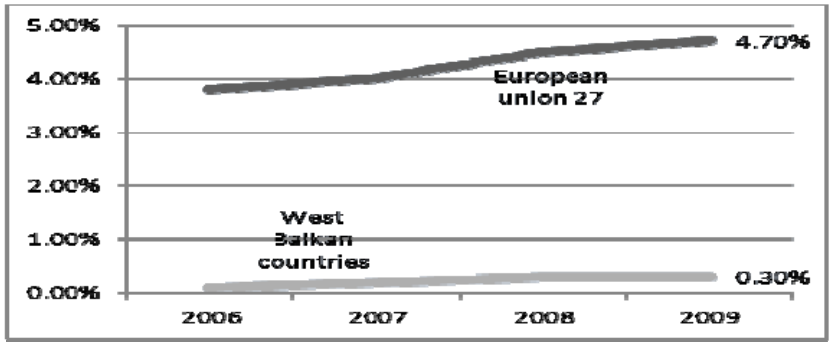

Figure 5: Share of utilized agricultural area for organic farming

Sources: EUROSTAT (2011): Counties profile WB, available from: http://europa.eu/rapid/pressReleasesAction.do?reference=STAT/08/88&format=HTML&aged=0&language=EN&guiLanguage=en, Eurostat (online data codes: ext_lt_intertrd, ext_lt_maineu and cpc_etmain).

Such expanding acreage is a response to the growing demand for organically produced food products with current retail sales value of €18 billion, as opposed to €11 billion in 2003. As consumption of organic food products in the EU grew faster than production, imports from third countries have increased proportionally. Definite figures on imports from non-EU countries do not exist, since the EU's Harmonized System Codes of traded products does not distinguish between the conventional and organic. However, increasing imports over the past ten years may be gauged by the number of registered importers of organic produce into the EU, which in 200912 increased from less than 500 to well above 3,000.

Although organic farming in the Balkans is still fragile, it is already an important driver for the development of the primary sector thanks to the dynamism of its new stakeholders and chains of production, the consolidation of legal frameworks and a significant overhaul of traditional objectives in food and local production systems. Goals in organic food production are: Croatia 8% agricultural land organic by 2016; Serbia 8 certification agencies recognized by the MA; Bosnia and Herzegovina grass-roots initiatives recognized by sectorial policies; Montenegro and ecological state with a slow start for organic farming; Albania olive growing-an opportunity realized for launching the sector; Macedonia 2% of agricultural land organic. These trends suggest that target markets for organic products from Serbia are primarily those EU countries that do not yet show signs of saturation, and are also large enough to absorb additional produce. These are Italy, France, UK, and Germany in particular.

Demand is growing much faster than classic food production. It is this trend which propels economies to translate organic food manufacturing potentials into export opportunities.

ORGANIC LAND, CERTIFIED PRODUCERS AND PRODUCTS

At the regional level, *Croatia* turns out to be the country with the strongest sector in terms of agricultural land allocated to organic production. The surface area used for organic farming exceeded 1% of the total between 2008 and 2009 and in 2010 there were over 1,000 certified producers.

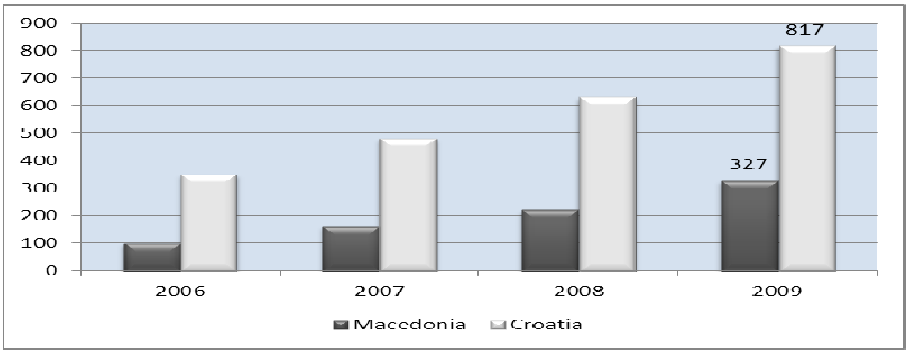

Figure 6: Agriculture land in Macedonia and Croatia under organically certified annual crops, ha 2006-2009

Source: MAFRD - HR (2011), Action Plan for Development of Organic Agriculture in Croatia from 2011 to 2016, 2011, Zagreb, MAFWS - MK (2009), National Program for Agriculture and Rural Development 2010-2014, Skopje.

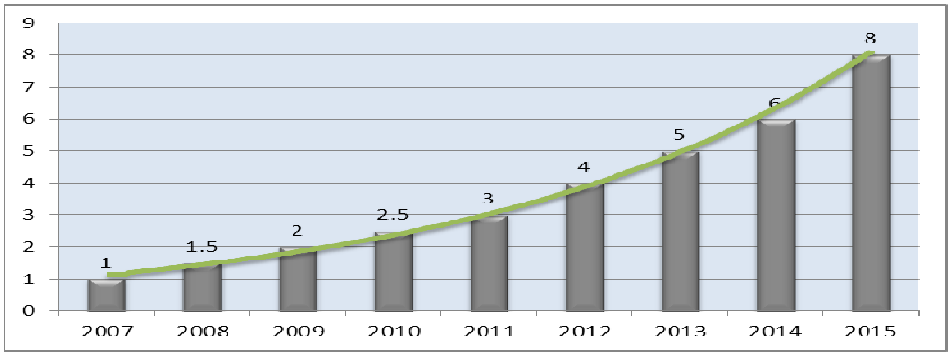

Figure 7: Projection of organic production in Croatia as % of total agricultural production, 2007-2015

Source: MAFRD - HR (2011), Action Plan for Development of Organic Agriculture in Croatia from 2011 to 2016, 2011, Zagreb

Macedonia and Serbia follow Croatia, both in terms of the hectares of agricultural land allocated to organic production and the number of producers.

Despite structural weaknesses in both countries, growth between 2006 and 2011 was encouraging, as well as the increasing attention to the sector from both private investors and institutions.

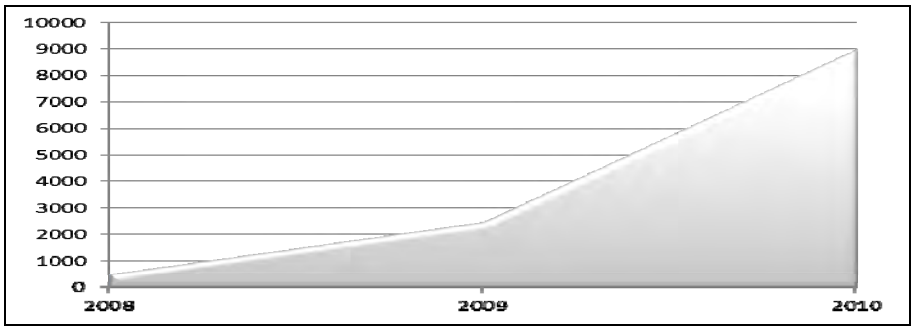

Figure 8: Areas under organic production FYR Macedonia

Source: MAFWS - MK (2009), National Program for Agriculture and Rural Development 2010-2014, Skopje.

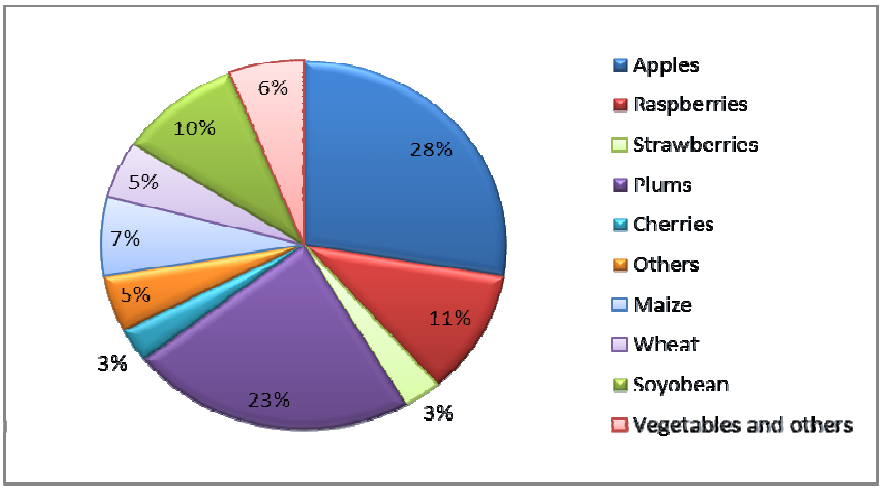

Figure 9: Structure of organic crop production in Serbia, (2010)

Source: März U., Stolz T., Kalentić M., Stefanović E., Vučković J. (2011), Organic agriculture in serbia at a glance 2011, giz, Belgrade

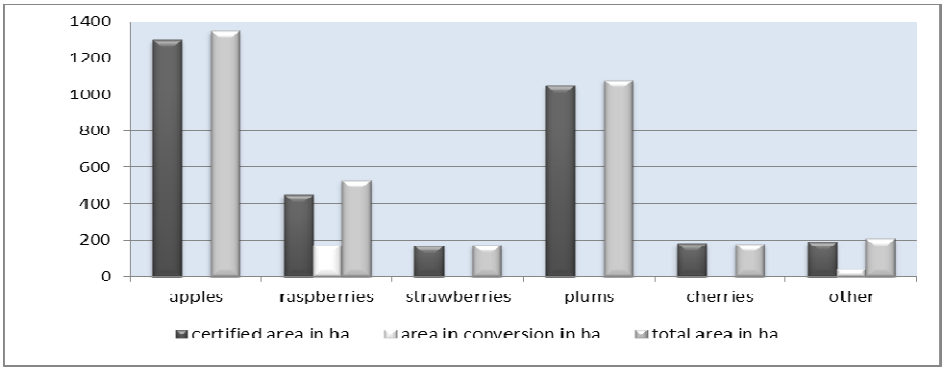

Figure 10: Agriculture land in Serbia under organically certified annual crops, ha (2010)

Source: MäRZ U., STOLZ T., KALENTIĆ M., STEFANOVIĆ E., VUČKOVIĆ J. (2011), Organic Agriculture in Serbia at a Glance 2011, GIZ, Belgrade

In Albania, despite a fairly long history (the organic movement started in 1997) and favorable climate conditions, organic production has not yet reached the results that had seemed achievable in the short term. Although the number of certified producers is slowly growing, the surface area dedicated to organic production is still limited. Bosnia Herzegovina and Montenegro, albeit for different reasons, still show some serious structural limitations: in Bosnia the 'pioneers' of organic production are just under 50 units and in Montenegro the amount of land allocated to organic production is extremely limited. In both countries, as well as in Albania and to a slightly lesser extent in the rest of the region, the actual land formation, mainly characterized by mountainous areas, has led to a rapid and significant growth in the harvesting of wild plants.

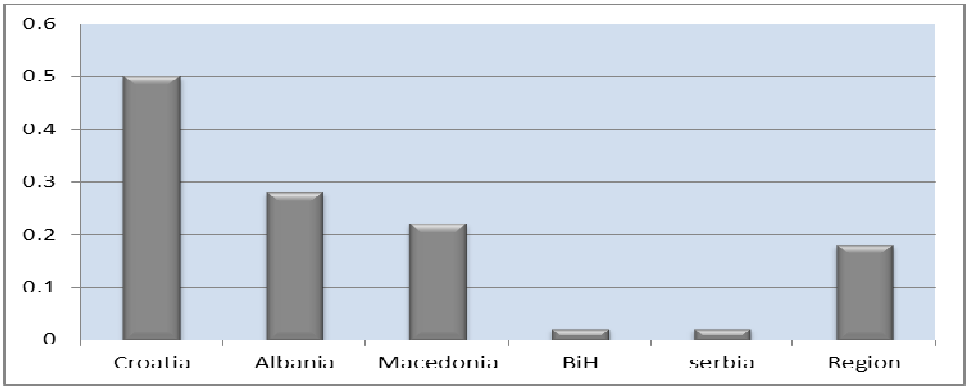

Figure 11: Organic farming in the Western Balkans, 2006 (% of agricultural land)

Source: [7, 10, 17, 18, 19, 20, 34, 35]

Table 6: Organic production in the WBC: certified farmers and land

Country	Year	Total UAA (ha)	Organic surface (ha)	Wild harvest areas (ha)	Certified farmers
Albania	2010	1,122,000	284	251717	137
BIH	2009	2,136,000	691	220,000	39
Croatia	2010	1,289,000	23,000	N/a	1,125
Macedonia	2010	1,064,000	5,228	N/a	562
Montenegro	2010	516,000	3,561	101,801	67
Serbia	2009	2,065,000	8,500		130

Source: Eurostat (online data codes: ext_lt_intertrd, ext_lt_maineu and cpc_etmain)., FAOSTAT database: http://faostat.fao.org/default.aspx, MAFRD - HR (2011), Action Plan for Development of Organic Agriculture in Croatia from 2011 to 2016, 2011, Zagreb, MAFWS - MK (2009), National Program for Agriculture and Rural Development 2010-2014, Skopje., März U., Stolz T., Kalentić M., Stefanović E., Vučković J. (2011), Organic Agriculture in Serbia at a Glance 2011, GIZ, Belgrade, Mitrev S., Study on the Sustainable Development of Organic Agricultural Production in the Eastern Planning Region, Report for the Center for Development of East Planning Region, Stip.

The most significant produce common to almost all the countries of the region is that of small fruits (cherries, strawberries, raspberries, blueberries and blackberries), aromatic and medicinal herbs and some types of cereals. Fruit and vegetable production is significant in Croatia and is growing, for some forms of cultivation, in Albania, Macedonia, Montenegro and Serbia In the livestock sector, the most determined steps forward have been made by Croatia, Macedonia and Montenegro mostly in sheep and goat farming. Whereas for honey, which shows some examples of excellence in Bosnia Herzegovina and especially in Macedonia, the tradition is strong in the entire region and the development prospects for organic production within this niche are significant.

Table 7: Agricultural products and processed foods

Country	Main products	Main processed foods	Type of trade
Albania	Aromatic and medicinal herbs, small fruits, olives	Juices and jams, olive oil	Export
Bosnia Herzegovina	Cereals, aromatic and medicinal herbs, small fruits, mushrooms, honey	Flours	Export
Croatia	Cereal, fruits and vegetables, aromatic and medicinal herbs, olives, griped	Juices and jams, olive oil, wine, essential oils	Export internal market
Macedonia	Cereals, fruits and vegetables, milk and sheep meat, honey	Jams, juices, cheese	Export
Montenegro	Aromatic and medicinal herbs, fruit, sheep meat, sheep and goat milk	Jams, juices, cheese	Export
Serbia	Small fruits, fruit and vegetables, mushrooms, cereal	Juices and jams	Mainly export

Source: Eurostat (online data codes: ext_lt_intertrd, ext_lt_maineu and cpc_etmain)., FAOSTAT database: http://faostat.fao.org/default.aspx, MAFRD - HR (2011), Action Plan for Development of Organic Agriculture in Croatia from 2011 to 2016, 2011, Zagreb, MAFWS - MK (2009), National Program for Agriculture and Rural Development 2010-2014, Skopje., März U., Stolz T., Kalentić M., Stefanović E., Vučković J. (2011), Organic Agriculture in Serbia at a Glance 2011, GIZ, Belgrade, Mitrev S., Study on the Sustainable Development of Organic Agricultural Production in the Eastern Planning Region, Report for the Center for Development of East Planning Region, Stip.

ORGANIC MARKET AND TRADE

At the regional level the internal market of organic products is still limited by a slow-growing demand, due to both the lack of purchasing power by a large proportion of consumers and to a limited awareness of the values and benefits of organic produce. A major role is also played by a deep-rooted skepticism based on the conviction that purchasing directly from the farmer or through informal relational channels - which is still a wide-spread habit - is more than enough to guarantee quality and healthiness, despite now guarantee of the products being organic. It is no surprise then, that organic consumption has taken off mainly in large cities, where incomes are higher and information circulates more easily. This is especially true for the younger generations in that they have weaker ties to the countryside and greater difficulties in reaching a trusted farmer and in re-establishing networks that allow them to keep up informal commercial channels. It is mostly *the educated classes* and high earners that support the organic market, as well as young families, returned emigrants who discovered the benefits of

organic production while abroad for work or study purposes and the tourist sector. Croatia, for instance, during the summer peak season registers the effects of the influx of tourists on the consumption of organic products. What should also be noted is that the classic organic consumer is not always consistent: beside a limited group that purchases organic products systematically, is a larger group that approaches the sector only on an occasional basis.

In the period 2008-2011, the demand for organic products grew in almost all countries, albeit at a contained pace because of the economic crisis that brought salaries down, and thus had negative implications on consumption. Overall, the rise in demand is shown by the increase in attention to the sector by different distribution channels. Nevertheless, most of the products for sale - organic as well as for other niche consumer demands, such as macrobiotic and gluten-free - still rely on imports from other European countries, i.e. Germany, Italy and Spain. Local products, except in the case of Croatia where the range is greater, are generally limited to flour, pasta, fruit juices, jams, honey and herbal teas. Fresh products, although growing, are still limited. Organic products are gaining space on the shelves of large organized distributors: in almost all countries commercial chains, a limited number of organic products is also available in most chemists, especially herbal infusions and, in some specialized personal care chains, such as the German group Dm *Drogerie Markt*, which promote an assortment of teas, juices, jams, biscuits, pasta and other 'dry' products. Direct sales are still limited because of the small number of certified farms. Road-side vendors, to be found mainly in busy areas during the summer months, generally still sell traditionally-farmed produce, often linked to informal commercial channels. Croatia is an exception, followed by Macedonia and Serbia, where direct sales are growing also thanks to the increase in the number of organically certified farms and rural tourism. Online sales and box schemes - meaning the purchase of baskets with items proposed by the producer - are also very limited. The first initiatives of this kind were launched by farms, such as *Eko Sever* in Croatia, and associations, like *Terras* in Serbia. Among the sales channels, restaurants should not go unmentioned, as they are often the expression of important social and cultural trends. Organic food is used especially in some high level restaurants and in those offering vegetarian and macrobiotic cuisine: it is not by chance that a combination of organic-vegetarian is one of the most recurring. There are organic and vegetarian restaurants and cafés in Belgrade, Novi Sad, Ohrid, Sarajevo, Skopje, Zagreb and other cities. In many cases, the supply of technical aids authorized for organic farming, such as fertilizers and plant defense products, is also limited. The difficulties in procuring such products through traditional distribution channels constitute an additional barrier to the development of the sector.

- As consumption of organic food products in the EU grew faster than production, imports from third countries have increased disproportionally. Definite figures on imports from non-EU countries do not exist, since the EU's Harmonized System Codes of traded products does not distinguish between the conventional and organic. However, increasing imports over the past ten years may be gauged by the number of registered importers of organic produce into the EU, which in 2009 increased from less than 500 to well above 3,000. Within Europe, the largest consumers of organic food are

Germany, France, Italy and the UK. Country reviews such consistently confirm the following trends:

- In Germany, the retail value of organic products has been fluctuating for years, with an annual growth of some 10%, reaching the value of over € 6 billion in 2010, compared to 3.5 billion in 2004. Commodities with the highest rate of growth in the past years were milk and dairy products, vegetables and fruits. Market growth in Germany in the last five years was led by supermarket chains, where 54% of the total value of organic produce is sold. Specialized organic food supermarkets also exist, but in terms of overall turnover they have fallen behind general outlets;
- In Italy, retail sales of organic foods exceed € 1.5 billion. Organic food sections in supermarkets were introduced just three years ago, only to surpass the sales in grocery shops by 2009;
- In UK retail sales of organic foods have been slow to grow, amounting to EUR 2 billion in 2010, unlike France, who saw the highest annual growth in the value, from EUR 3 billion in 2009 to 3.5 billion in 2010;
- In 2010, Austria had retail sales of organic produce amounting to almost EUR 1 billion, Spain achieved EUR 0.9 billion, Sweden and Denmark both had EUR 0.8 billion, and retail values in the Netherlands stood at € 0.66 billion. It seems that these countries have reached a plateau, or at least a temporary saturation, with regard to sales of organic products. In the past years, growth fluctuated between -3 and +5%;
- Despite Switzerland's limited population, organic food turnover in 2010 exceeded €1 billion. On a per capita basis, this figure is the highest in all Europe, currently at EUR 152.5, followed by Denmark with the total organic food turnover of EUR 0.8 billion, which is EUR 142 per capita;

Organic food markets in Central and Eastern European EU countries are still emerging, and organic food is mostly produced for export. The Czech and Polish markets were the fastest to develop, growing 4 to 5 times in the period from 2006 to 2010 – from EUR 27 million to 107 million and from EUR 15 million to 85 million, respectively. Bulgarian and Romanian organic markets are waking slowly but steadily, with annual market values of EUR 6 million and 20 million respectively, while Hungary was the only whose market lost pace and had a sluggish growth, reaching EUR 25 million in 2010 . These trends suggest that target markets for organic products from Serbia are primarily those EU countries that do not yet show signs of saturation, and are also large enough to absorb additional produce. These are Italy, France, Germany, and UK.

Product opportunities in Germany and in other EU countries After spending many years in the "green" ecological niche, organic food and beverages entered mainstream markets and became part of the global megatrend in lifestyle, health, and sustainability. For this growing consumer group, organic food is a way to provide healthy food for themselves and their families, to support smaller food manufacturers and farmers, and to protect the environment. Increasingly the aspect of rationality is added to the concept, with the result that the ideal product is not

only organic but also seasonal and produced locally, or at least regionally. However, people adhering to the prevalent lifestyle are not likely to sacrifice their pleasure and enjoyment, so organic products must be available to the same extent, and in similar convenient packages and outlets, as conventional food. While the trend to organic food is strong, the level of its market penetration in all European countries is still relatively low. It grew in the past not only as a factor of increasing demand, but also of its availability. Market penetration for eggs, baby foods, potatoes, fresh milk and cereals is high not only because of exceptional demand, but also because the industry was able to provide adequate organic supplies at tolerable prices. Considering the expectations of consumers of organic food and current market penetration, it is evident that major supply gaps exist. These refer to organic meat, organic fish, fruits, to some extent to vegetables as well, and even to milk and cereals. Generally, direct imports of meat to the EU are difficult since the market is strictly regulated, and even under the relaxed trade regimes foreseen by the SAA, meat will not be freed from import restrictions. Producing organic meat and dairy products usually involves the issue of organic feed, which depends on organically produced fodder cereals and oilseeds. Within the vegetable sector, supply of organic carrots and zucchini has already reached a penetration rate exceeding 20%, but that of onions and peppers is still below 10%. In the fruits sector, organic table grapes already occupy substantially more than 10% of the market, while apples and berries have yet to reach 5%. Germany is the most important destination for marketing organic products from Serbia, since its share in the European organic food market is 31%, followed by France (17%), United Kingdom (10%) and Italy (8%). In addition to being a large consumer (EUR 74 per capita) and organic food producer (1 million ha under organic farming), Germany is also a large importer of such products. Depending on product type, shares of imports range from 2% to 95% of the value of local produce on the market, for the products that can be produced in Germany. Fruits and vegetables are the most import organic product category on the four mentioned European markets. Organic carrots are the most sold vegetable in Germany, and since local production cannot meet the demand, 48% of total consumption of organic carrots is supplied from imports. Furthermore, imports of organic tomatoes (80%) and peppers (90%) also have high shares due to large consumption throughout the year, and out of season as well, when local fresh products are not available. Organic potatoes are one of the most important products in Europe by volumes of consumptions and imports. In Germany, the share of potatoes is 4.7% of the organic market, and 28% is imported.

Table 8: Share of some products in total retail value of sold organic foods at the most important EU markets

No	Product	Germany	Denmark	France	UK	Italy
1	Milk and dairy products	15&	32%	15%	31%	18%
2	Fruit and vegetables	22%	23%	17%	23%	25%
3	Bread, flour and pastries	11%	15%	10%	n/a	7%
4	Eggs	5%	6%	6%	3%	8%
5	Baby food	5%	n/a	5%	8%	5%
6	Fresh meat	4%	6%	7%	5%	n/a
7	Poultry	n/a	n/a	7%	2%	n/a
8	Wine	n/a	n/a	10%	n/a	n/a
9	Beverages	11%	n/a	5%	8%	10%

Source: EUROSTAT (2011): Counties profile WB, available from: http://europa.eu/rapid/pressReleasesAction.do?reference=STAT/08/88&format=HTML&aged=0&language=EN&guiLanguage=en, Eurostat (online data codes: ext_lt_intertrd, ext_lt_maineu and cpc_etmain).

This can be a chance for producing and exporting potatoes from Serbia for example, as since in April 2012 the European Commission lifted a ban on importing this product from Serbia, which was in effect for several years due to the presence of bacteria causing ring rot. In addition to vegetables, organic protein crops, primarily soybean, used for feeding organically raised livestock, also have high shares of import in Germany and can be an important export items for Serbian producers. This is especially important given that as of 2015 Germany will have to enforce the law that feed for organically grown livestock must be of 100% organic origin (95% currently allowed).

CONCLUSIONS

Thus, Western Balkan trade developments are not important from the international markets' aspect, but they seem to be decisive for the development of these countries, as agriculture makes from 15-50% of their production structure and employment. Without intensifying trade relations, these economies might step further away from the sound economic recovery path. Moreover, developing commercial circuits largely for export results in the modern channels and organizational structures of the internal markets became important need for the economy of countries.

Organic cultivation has to invest much more in the promotion of an integrated approach with direct sales, farmers' markets, new forms of distribution (such as box schemes) and rural tourism. The absence of coordination is not only to be seen in relation to the chains of production, but also as an essential shortcoming

in the harmonization of policies. The move towards the European Union and its Common Agricultural Policy should in fact be seen as a chance to promote an integrated approach in which agricultural policies are coordinated along with those for energy, the environment and tourism, in order to respond coherently to a growing (and necessary) demand for sustainability in the management of land.

Other complex factors involved in the development of organic farming concern the need to spread the principal techniques of production (composting, biological controls, biological anti-parasite treatments, biological fertilization, etc.) and improve administrative and management skills. In this regard a fundamental role can be played by the extension services and by those universities and research centers that are taking an increasing interest in the sector. Even with their still limited buying power, consumers in South East Europe are showing a slowly growing interest. In this sense, it is particularly important to spread the awareness that organic production offers an alternative to the current methods of production and consumer models. Organic farming takes into account the whole ecosystem, favors methods which defend the natural fertility of the oil and respect its timing. It promotes the biodiversity of the environment in which it operates, excluding the use of synthetic chemical and GM products, and is concerned for the health of the consumer.

Information and greater awareness are decisive elements also for influencing policy decision-making. The task of identifying priorities and strategies for the development of this sector cannot be only left to the governments, but must also be shared by all those involved in the chain of production: producers, workers, intermediaries, distributors, retailers, consumers, inspectors, certifying bodies, associations, NGOs and experts in the category. A complex network of participants who, as this paper intends to show, are trying to organize themselves in a more effective way in WBC too**.**

REFERENCES

[1] ARCOTRASS (2006): Study on the State of Agriculture in Five Applicant Countries.

[2] http://ec.europa.eu/agriculture/analysis/external/applicant/index_en.htm

[3] Bellamy, P.H.; Loveland, P.J.; Bradley, R.I.; Lark, R.M. & Kirk, G.J.D. (2005). Carbon losses from all soils across England and Wales 1978–2003. Nature, 437, 245-248.

[4] Birkhofer, K.; Bezemer, T.M.; Bloem, J.; Bonkowski, M.; Christensen, S.; Ekelund, F.; Fließbach, A.; Hedlund, K.; Mikola, J.; Robin, C.; Mäder, P.; Setälä, H.; Tatin-Froux, F.; Van der Putten, W.H. & Scheu, S. (2007): Improving internal nutrient cycling and conservation biological control through long-term organic agriculture. Ecological Applications.

[5] Buturac and Teodorović, (2012) .Organic Agriculture in Serbia - At a Glance

[6] El-Hage Scialabba, N.E. & Hattam, C. (2002). Organic agriculture, environment and food security. Environment and Natural Resources Service Development Department. The Food and Agriculture Organization of the United Nations, Rome.

[7] EC Council Regulation 834/2007 of 28 June, 2007, on organic production and labelling of organic products and repealing Regulation (EEC) No 2092/91, Brussels.

[8] EUROPEAN COMMISSION (2010e), Commission Opinion on Montenegro's application for membership of the European Union, Commission Staff Working Document, Brussels.

[9] EUROSTAT (2011): Counties profile WB, available from: http://europa.eu/rapid/pressReleasesAction.do?reference=STAT/08/88&format=HTML&aged=0&language=EN&guiLanguage=en

[10] Eurostat (online data codes: ext_lt_intertrd, ext_lt_maineu and cpc_etmain).

[11] FAOSTAT database: http://faostat.fao.org/default.aspx

[12] Fließbach, A., Oberholzer, H.-R., Gunst, L., Mäder, P. (2007): Soil organic matter and biological soil quality indicators after 21 years of organic and conventional farming. Agriculture, Ecosystems & Environment 118, 273-284.

[13] Giller K.E.; Bignell, D.; Lavelle, P.; Swift, M.; Barrios, E.; Moreira, F.; van Noordwijk, M.; Barios, I.; Karanji, N. & and Huising, J. 2003. Soil biodiversity in rapidly changing tropical landscapes:scaling down and scaling up. In Bardgett RD, MB Usher, and DW Hopkins (eds) Biological Diversity and Function in Soils. Cambridge University Press, New York.

[14] Hepperly, P., Douds Jr., D., Seidel, R. (2006): The Rodale farming systems trial 1981 to 2005: long-term analysis of organic and conventional maize and soybean cropping systems. In: Long-term field experiments in organic farming. Raupp, J., Pekrun, C

[15] IFOAM, Bonn - V 3.0 23/02/2012. Research Institute of Organic Agriculture (FiBL), Frick, and International Federation of Organic Agriculture Movements

[16] Kaiser, J. 2004. Wounding earth's fragile skin. Science, 304, p 1616-1618.

[17] Krugman, R. P ., Obstfeld M., (2006). International Economics – Theory & Policy, A Glossary of Political Economy Terms copyright , Auburn University

[18] MAFRD - HR (2011), Action Plan for Development of Organic Agriculture in Croatia from 2011 to 2016, 2011, Zagreb

[19] MAFWS - MK (2009), National Program for Agriculture and Rural Development 2010-2014, Skopje.

[20] März U., Stolz T., Kalentić M., Stefanović E., Vučković J. (2011), Organic Agriculture in Serbia at a Glance 2011, GIZ, Belgrade

[21] Mitrev S., Study on the Sustainable Development of Organic Agricultural Production in the Eastern Planning Region, Report for the Center for Development of East Planning Region, Stip.,

[22] Mäder, P., Fließbach, A., Dubois, D., Gunst, L., Fried, P., Niggli, U. (2002): Soil fertility and biodiversity in organic farming. Science 296, S.1694–1697.

[23] O'Sullivan & Sheffrin S.M., (2003): "Economics. Principles & Tools"

[24] Pfiffner, L. & Niggli, U. 1996. Effects of biodynamic, organic and conventional production systems

[25] on ground beetles (Col. Carabidae) and other epigaeic arthropods in winter weat. Biological, Agriculture and Horticulture 12, 353-364.

[26] Pfiffner, L. und Luka, H. (2003): Effects of low-input farming systems on carabids and

[27] epigeal spiders - a paired farm approach. Basic and Applied Ecology 4: pp. 117-127.

[28] Pimentel, D., Harvey, C., Resosudarmo, P., Sinclair, K., Kurz, D., McNair, M., Crist, S. Pulleman, M.; Jongmans, A.; Marinissen, J. & Bouma, J. 2003. Effects of organic versus conventional, arable farming on soil structure and organic matter dynamics in a marine loam in the Netherlands. Soil, Use and Management 19, 157-165.

[29] Reganold, J., Elliott, L. and Unger, Y. (1987): Long-term effects of organic and conventional

[30] farming on soil erosion. Nature330, 370-372.

[31] Shepherd, M.; Pearce, B.; Cormack, B.; Philipps, L.; Cuttle, S.; Bhogal, A.; Costigan, P. & Unwin, R.

[32] 2003. An Assessment of the Environmental Empacts of Organic agriculture.

[33] (http://www.defra.gov.uk/science/project_data/DocumentLibrary/OF0405/OF0405_909_TRP.doc).

[34] Siegrist, S.; Staub, D.; Pfiffner, L. & Mäder, P. 1998. Does organic agriculture reduce soil erodibility? The results of a long-term field study on loess in Switzerland. Agriculture, Ecosystems and Environment 69, 253-264.

[35] Stolze, M.; Piorr, A.; Haring, A. & Dabbert, S. 2000. The Environmental Impacts of Organic agriculture in Europe – Organic agriculture in Europe: Economics and Policy, vol. 6.

[36] Qaim M, ( ) "INTERNATIONAL TRADE IN FOOD AND AGRICULTURAL PRODUCTS -THEORY AND POLICY", University Gottingen

KNOWLEDGE SYSTEM FOR ORGANIC FARMING IN THE REPUBLIC OF MACEDONIA

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Abstract: Organic farming is a land use system with high potential as it can contribute to addressing severalchallenges Macedonian economy and society faces, such as unemployment, poverty, set-aside farmland, loss of biodiversity.Organic agriculture combines the ancient practical knowledge of the farming with today's scientific results. Therefore, main purpose of this paper is to research and explain the need for establishing organic farming knowledge system in the Republic of Macedonia. This kind of knowledge system is not a set of general technical practices to be implemented everywhere but is an ongoing and complex context-specific adaptation of its practices by local actors.In this paper we want to explore key processes within organic farming knowledge systems, since the value of this paper will be in showing the importance of creating knowledge system in organic farming achieved through the vision and enterprise of individuals and local entitiesoperating with support of the government. Research methodology is based on literature review and comparative analysis. In the first part of this paper, we will discuss the potential actors of the organic farming knowledge system and their possible implications, as well as the most important knowledge devices.In the second part will be presented and analyze situation in the Macedonian organic production. Third part will describe possible model for creation of organic farming knowledge system in the Republic of Macedonia. Results will show that only systematic approach will enable easier access to information and help farmers in implementing the complete organic product process, "from land to table".

Key words: Organic Agriculture, Knowledge System, Integration, Farmer Networks, Republic of Macedonia

JEL classification: Q01, Q12, Q19

UDC 005.94:631.147(497.7)

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INTRODUCTION

Today's agriculture is involved in a vast societal movement, linked to the framework and the values associated with sustainable development. To make a success of this transformation, agriculture will have to become both integrated into its environment, and organic (Walker, 2006 et al, pp. 3.). This transformation depends largely on the mobilization of knowledge and know-how.

The continuing development of organic farming all over the world is valid prove that there is a need for transition to sustainable agro-food model.Organic farming brings a complex radical change and innovation based on new values of economically viable, environmentally sound andsocially fair agriculture. This attributes make organic farming a land use system with high potential to contribute in addressing severalchallenges our society faces, such as poverty, loss of biodiversity, water pollution or climate change.This particular land, or even better, nature use system involves not only substantially distinct production technologies, but alsonew approach to farm management, farmers' collective organisation and to market strategies. As a result of these interactions, itbuilds on a new knowledge base and proposes alternative knowledge processes tothose of conventional agricultural system.Namely, unlike many other agricultural innovations which are mostly result of science and technology development and delivered to farmers ascomparatively standardised ready to use knowledge, organic agricultureemerged as informal movement started by farmers and environmentalsits.Their mostsubstantial contribution hasprobably been knowledge of production and delivery basedprimarily on social learning and other knowledge devices (information flaw, farmers'experiments, farming networks, innovations and technology transfer). In fact, benefits of organic farming are only possible if basedupon an innovative knowledge system that links a diversity of actorsalong the food chain across regions, borders, sectors, professions and disciplines. Therefore, transition to thissustainable agriculture model depends on establishing new efficient knowledge and learning system, that is not a set of general technical practices to be implemented everywhere.Organic farming is an ongoing and complex context-specific adaptation of its practices by local actors.It is tightly linked toa process of trial-and-error by organic farmers and consumers, and it is theoutcome of their inventions and innovations.Local, in the context of organic farming means also that production processes arestrongly connected with the local environment and local knowledge, preserved by one generation of farmers and passed on to the next generation.In fact, researches confirmed that most of organicfarming knowledge has not been developed through the formal education system or by conventionalscience (Summer, 2008, pp.207-223.).This is most certainly true for the creation, accumulation and dissemination of organic farming knowledge in the Republic of Macedonia, where major knowledge base has been created, developed, tested, protected, passed down and expanded upon by practitioners in the field. Exchange of all gain knowledge is mostly trough only one communication model-organic farmers communicating with other organic farmers, which in many cases are also family related.

Although in its bear essence organic agriculture shares the use of naturally occurring biological processes with ancestor methods, it must be pointed out that it

has capacity to absorb as much technological and science advancements, as conventional agriculture (Ingram, 2007, pp. 298-312). In fact, in order to meet sustainability goal, technological and scientific innovations are more than needed in the domain of improving soil fertility, using natural regulation and diversity to prevent pests and diseases in crops and livestock, using little additives in processing (Niggli et al, 2008, pp.17). Additionally, the need to strengthen organic farmers' positions among other farmers, policy makers and other food system agents, represents is other broad opportunity for science-based solutions. In this sense, the organic farming knowledge system includes many actors, itsinstitutions and organizations and is therefore a result of an intensive social learning process.

Thepaper discuss the potential actors of the organic farming knowledge system and their possible implications and focuses in particular on organic farmeras, as they appear to be the centralactors in Macedonian organic farming system. Additionally, in thispaper are given key knowledge devices within organic farming knowledge systems, likesocial learning, information flaw,and farmers'experiments, farming networks, innovations and technology transfer.The intention is to better understand the relevanceof these aspects for the design of functional knowledge systems, with emphasis to the organic farming system in the Republic of Macedonia. In the face of global change, marketfluctuations and policy changes, it is imperative for society to build resilient knowledge systems that will strengthen the agro-ecosystem as well as the integrity of the socioeconomic system. Wehypothesize thatsocial learning, information flaw, farmers'experiments, farming networks, innovations and technology transfer can happen among all actors and thus arevital processes for building knowledge systems resilience. At the end, we propose a model for knowledge system in the Republic of Macedonia.

MAIN KNOWLEDGE ACTORS AND KNOWLEDGE DEVICES INVOLVED INORGANIC FARMING KNOWLEDGE SYSTEM

Simplified to maximum, we can say that agricultural knowledge system is a collection of actors, involved in production, research, education and advice services, with almost equal importance and role. Being that sustainability is main attribute of organic agriculture, organic farming knowledge system has one particular feature. Namely, unlike any other sector of the economy, in the agriculture, on daily bases, happens, the major interface between humans and the environment. For this reason, the role of farmer as an actor is crucialin the organic farming knowledge system.This is also true because engaging in organic production means experimenting new techniques, introducing different management of labor time and investing efforts in different management of space, adapting and refining solutions to change, comparing different options with farmers that have similar conditions, and making appropriate choices. This can only be achieved through farmers' participation in research and its application. This on-farm research component generates new knowledge that will benefit all

farmers, thus, it needs to be circulated. The establishment of cooperation between farmers is instrumental in helping them to exchange the generated knowledge and become a stronger and more independent. In addition, this knowledge-exchange provides a critical mass and sets an end to the isolation of farmers. Most importantly, various forms of cooperation and information exchange between organic farmers are the actual foundationof the organic farming knowledge system, regardless if it's institutionalized or not. Another reasons to put farmer in the center of organic farming knowledge system is the fact that organic sector, especially in developing countries, is represented by small (individual) farmers. Major reason they converted to organic production in most cases is because it does not require drastically change in their farming practice, and offers options for risk reduction, especially regarding market risks. This implies that they are still not very educated or informed and that any help is more than welcomed. As for the large agricultural producers, other than some isolated cases being converted driven by a strong personalphilosophy of commitment to environmental protection or social welfare, they still remain committed to high input conventional farming.

Along with the organic farmer, organic farming knowledge system has other four main actors with an interest in developing organic agriculture(Dockès et al, 2005, pp. 25):

- Research
- Extension services
- Education and training
- Support systems.

In almost all countries the research, extensionand educational organizations, as actors of the knowledge system are pretty much stable and static. Differences between countries occur in the structure of the system, its organization and governance (e.g. under a public or privatestructure), as does in the level of centralization or decentralization. Particularity of the organic farming knowledge system are the support systems, as they can be highly fragmented and subject toa dynamic process of emerging new structures and actors. Within this broad group of actors in organic farming knowledge system, it is inevitable to mention local NGOs and private sector. In fact, most pioneer organic projects were initiated by local NGOsor the private sector, though often with foreign links. One of the great strengths of this actor is thepersonal motivation and expertise of key individuals.A common conclusion of local NGOs is that they can achieve a lot on their own, but sooner or later they realize that it is desirable to forge links with local and national government, that are of crucial importance for the straight of the knowledge system.

Other actors in the organic farming support system are the organicentrepreneurs and SMEs that are involved mainly in rural tourism, local resource based activities(wood, water, etc.), organic food processing and social services.Actors in this group are among the majordrivers of innovation, because they have to adapt their internal organization and technologiesto comply with rules and standards of organic production.

Cooperatives and organic farmers associationsas actors in the knowledge support systemare often a major conduit for the flow of knowledge andinformation. Organic farmers associations and cooperatives often provide inputs, input-relatedtechnical adviceas well asadvice related to products.

The media and journalists (professional journals and, increasingly, web-sites) are important for the exchange of information and ideas in, andabout organic farming. The mass media shapesfood discourses in society at large and mobilizes consumers' attitudes in terms of food quality and safety,values, alternative food networks and environment protection, so they are also valuable supportive actor in the organic farming knowledge system.

Also commercial service providers (veterinarians, plant and soil laboratories, brokers in the landmarket, providers of farm management software) and especially (fiscal) accountants and bankscan be important actor on providing sources for know-how on certain aspects of the organic farming related to knowledge and innovation.

Other than above mentioned actors in organic farming knowledge system, the actors who probably will be intensely interested in the development of organic food and farming systems are future generations, who clearly do not have a voice yet. To meet future generations' need for healthy food they have to be educated about the need to maintain healthy soil and a food chain which enables fair distribution of food. Additional information about environmental sustainability of organic farming as compared to both conventional and many traditional farming systems are also more than welcomed.

Last, but not least, it must be pointed out that biological diversity in agriculture is of immanent importance for the existence, primarily because it meets the basic needs for food. With evolution and society development, new types and specie with better quality has been createdand many types and breeds as genetic resource were destroyed.In this sense, we must bear on mind that there are other „silent actors" in the organic knowledge system. They are represented by a number of species of plants and animals, that have moral right to survive and exist and not be destroyed anderadicated, and therefore their characteristics and specifics need to be research, studied and shared within the society(Vilkka, 1997, pp.186).

In the knowledge system of organic agriculture, there are many so-called knowledge devices that initiates process of knowledge creation and exchange and in this paper are presented those that are closely related with the specific adaptation of practices by local actors, Namely, in this section will be presented social learning, information flow, farming networks, innovation, experimentation and technology transfer, as a knowledge devices for cumulating knowledge capital and establishment of organic farming knowledge system, and we well give some comparative experiences.

Social learning can be seen as process of conformation to already and social acceptable roles and practices, as well as being a creative process where new knowledge is generated within and facilitated by a social structure. It can't be considered in sense of imitation and/or reproduction, but as learning by a collective that may engage in concerted action which leads to considering active learning

process that is defined, structured, flexible and seeking improvement and change in existing state. This approach, viewed from a perspective of knowledge, contribute learning through active participation in practice where all actors are involved. Therefore, it is not a simple knowledge transfer but primarily a process where knowledge is found in and built from practice with sharing.

Information flowis a key input into organic farming systems. It's a resource that can be used by local actors (like farmers) as a part of solving a management or technical problem or to help the farm remain profitable. Also, the information is relevant if it's improving farmer's situation. Therefore, information has meaning if used in combination with previous experience to enhance knowledge. Thus, information received may result in an increase or change farmer's knowledge. Providing of information can be done via seminars, discussion, field days, workshops, newsletters or mass media such as internet, radio, television or magazines, newspapers or web sites. There's number of examples for information flow needs for organic farmers. In addition we mention some of them, such as (Petersen & Hurley, 2001, pp.3):

- Wisconsin dairy farmers who were unable to find information on sustainable practices produced their own knowledge of their production system and transmitted in horizontal information exchange networks that they developed locally and regionally.
- Canterbury organic producers had converted from "old style" low-input farming by using printed material, in particular newsletters and magazines from organic and industry associations. Information was obtained from discussion groups, seminars, field days, conferences, consultant and informal networks.
- Christchurch organic grower claimed to have learnt by trial and errors. Printed information and professional advice were not appropriate and they develop their own system by observation.

Farming networks facilitate innovation and knowledge in terms of social links, exchange and sharing. Through networks, innovation and knowledge is disseminated and reaches legitimization in broader society, new markets and policy field. In knowledge creation, farming network is multidimensional and it is a collective process with wide range of actors involved such as scientific staff, agricultural adviser, management adviser, cooperative, agricultural teacher etc.Studies in variousparts of the world confirm the role of farmer networks in the growth of organic agriculture(Assouline and Just, 2000 etc.).

Innovation is key competences of organic farmers to build flexible organic farming knowledge system. Innovation doesn't take place independently from technical innovation but is precondition, concomitant or consequence of technical innovation. Therefore, innovation in organic farming knowledge system is needed in way of institutional innovations that will require organization and institutionalization of organic knowledge infrastructure and more particularly on the interface between the users and the producers of knowledge using different facilitation techniques at different levels of the system.

Experimentation in the context of knowledge systems build up local knowledge and develop innovation. They shaped agricultural development and lead to implementation of the worldwide agricultural systems and they are common elements in the daily life of farmers. Experiment can be provoked by external change and emerging problem, they can be stimulate by personal interest and curiosity, or can be deliberate trials to effect desired future change (Kummer et al, 2010, pp. 38).

Experimentation is important in the organic farming knowledge system because organic farming is developed by farmer grassroots organizations, where farmers themselves were responsible for advances and innovation. The lack of advice and formal research in the initial phase of organic farming brings forth the assumption that organic farmers have developed a culture of experimentation.

Technology transfer involves the transfer of research findings to farmers and the aim is to encourage innovation and improve profitability of the system. An early model was the Linear Diffusion model in which scientists developed technology which is transferred to mangers by extension agents (Rogers, 2003, pp. 57). The new technology is first adopted by innovative farmers and growers and later by the broader farmer community.

ORGANIC AGRICULTURE IN THE REPUBLIC OF MACEDONIA

In the Republic of Macedonia, first steps for organic production are dating from the late 90^{-thies}, took by severalfarmers, supported by foreign donors. In 1999 were created the initial draft legal basis for organic production. At the end of 2000 was completed first draft law on organic production in consultation with European experts in organic production. In 2001, the Government adopted the draft Law on Organic Production and launched the project to support“Local initiatives to organic farming”, as part of a program to support environmental NGOs. In the same year was founded first association of organic farmers in Macedonia. In 2003, encouraged by the success of the ecological project ”Local initiatives to organic farming”, the decision was made to start a new project, completely devoted to the development of organic farming. It began cross-border cooperation in organic agriculture with Bulgaria, Croatia, Greece and Switzerland in the field of education and training, study visits, issuing leaflets and so on. Along with these events, the Law on Organic Production passed the parliamentary procedure in 2004 and decision was took for preparation of 12 other legislative acts in order to complete the national legislation. In December 2004, was adopted first by-law and established the Coordination and Advisory Committee on Organic Agriculture.In March 2005 was adopted the second act, the Program for Promotion of organic farming. In June 2006 were adopted three regulations governing standards for organic agricultural production (crop production, animal production, processing), and was established the National Association of producers of organic products,”Biosan”.

In 2007 was adopted a National strategy and Action plan for development of organic farming in the country and were completed all necessary bylaws. In 2008 was formed theFederation of Macedonian producers of organic products, as a national umbrella organization that unites and coordinates regional associations of organic producers. In 2009, was accredited the first Macedonian certification body, and adopted a new Law on Organic Agriculture, which entered into force in 2010. The new Law on Organic Agriculture regulates the production, preparation, processing, finalization, storage, transportation, distribution, advertising, sale, labeling and control of organic products.By the end of 2010 were adopted regulations regarding manufacturing, control, certification bodies and their power, packaging, transport and storage of organic products, and the content and layout of the national logo for organic products. For compliance with Regulations (EC) 834/2007 and (EC) 889/2008, the integration of rules and procedures laid down in Regulation (EC) 1235/2008 concerning the import of organic products from third countries into the national legal framework, and Regulation (EC) 710/2009 laying down detailed rules on organic production of aquaculture animals, in 2011 were adopted three rulebooks, including: Rulebook for growing aquatic animals and Rulebook on the form and content of the certificate of the product, production process, preparation and circulation of organic products in the Republic of Macedonia. Macedonia Law onOrganic Agriculturehas been amended from 2011in the area of penal provisions.

Asoutlinedinthe sectiondevoted to thehistorical developmentof organicfarmingin the country, it can be concludedthat the history oforganicfarming inthe Republic of Macedoniaisshort, butencouraging. From modest 4-5producersof organicagriculturalproductsin 1998, in 2011, there are780registeredand certifiedoperatorsin organicfarming in the Republic of Macedonia(Table 1.).

Table 1. Totalarableland(ha) andnumberoforganic farmers in the Republic of Macedonia intheperiod2005-2012

Year	Total certificated production area /in ha	Number of farmers
2005	266,00	50
2006	509,42	102
2007	714,47	150
2008	1029,00	226
2009	1373,83	321
2010	5228,00	562
2011	6580,92	780
2012	4663,08	576

Source: Organic production capacities:http://www.mzsv.gov.mk/?q=node/220

As shown it the Figure 1.it is evident that organic farming in the Republic of Macedonia has positive trend, both regarding certified production area and number of operators.

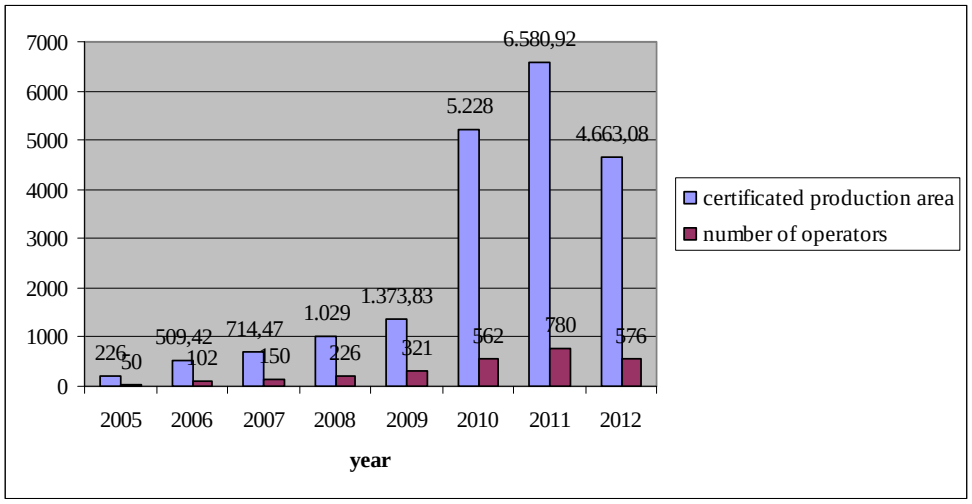

*Figure 1: Numberofcertifiedorganicoperatorsandarea underorganicfarmingin the Republic of Macedonia(**ha**) in2007-2012*

Source: Organic production capacities, http://www.mzsv.gov.mk/?q=node/220

In termsofstructure, from thedatapresentedin Figure 2., we cansee thatin 2011, biggest share from organicplantproduction, nearly 55% goes to cereals,followed byfodder cropswith15%. Fruitsget15%, vineyardsandpruningcropsaccount forapproximately1-4% of the totalorganicproduction, andoilseed cropsandindustrialcropswith1-2%.

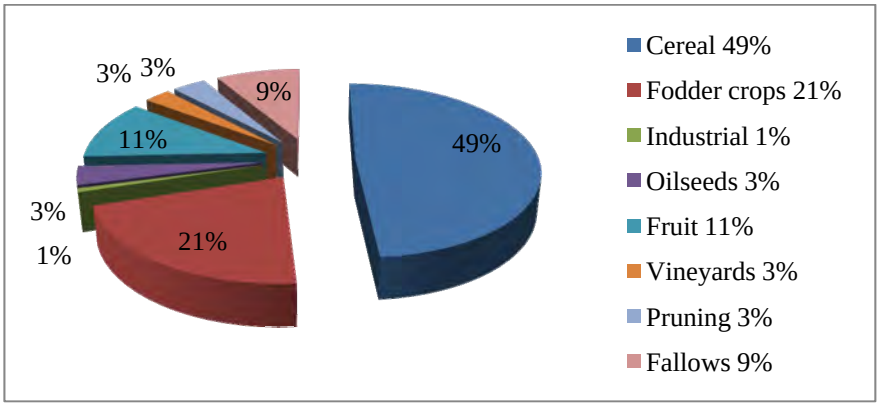

*Figure 2: Structureoforganicplantproductionin the Republic of Macedoniain 2012(**in %**)*

Source: Organic production capacities, http://www.mzsv.gov.mk/?q=node/220

As seenfrom the structure of Macedonian organic sector presented in Table 2., the most significantincrease in thearea underorganicagriculturalproducts are shownincereals(from2.999,8ha. in 2010to3.670,41ha. 2011), andorganic fruit production(from334,2ha. in 2010 to 971,12ha. in 2011). There is alsosubstantialprogressin the developmentof organiclivestock production. The numberoforganic cattle breedhas increasedfrom2.559headsin 2010 to5.221head in2011,the numberofsheepheadsfrom 98,798in 2010 to113,904headsin2011 andthe numberofgoatsincreased from3.048in 2010 to5.133heads2011.

Table 2**:** Plant and animal organic production in the Republic of Macedonia for the period 2009-2012

Organic vegetable production												
	2009 year			**2010 year**			**2011 year**			**2012 year**		
	In conversion	Organic	Total/ in ha	In conversion	Organic	Total/ in ha	In conversion	Organic	Total/in ha	In conversion	Organic	Total/in ha
Cereal	501,52	166,35	667,87	3.292	378	3.670	3.292	378	3.670	1.345,12	899,24	2.244,36
Fodder crops	101,04	82,05	183,09	724	261	985	724	261	985	435,87	552,13	988
Industrial	12,31	31,32	43,63	33	5	38	33	5	38	17,34	15,19	32,53
Oilseeds	63,78	/	63,78	150	9	159	150	9	159	86,33	73,42	159,75
Fruit	137,48	73,55	211,03	764	207	971	764	207	971	424,12	78,78	502,9
Vineyards	46,25	13,92	30,17	11	30	41	11	30	41	80,27	46,5	126,77
Pruning	84,22	58,64	142,86	193	71	263	193	71	263	111,52	46,16	157,68
Fallows	7,99	56,81	64,8	406	47	453	406	47	453	282,04	113,93	395,95
Organic livestock production												
	In conversion	Organic	Total/ in ha	In conversion	Organic	Total/ in ha	In conversion	Organic	Total/in ha	In conversion	Organic	Total/ in ha
Bovines	180	197	377	2.522	37	2.599	3.810	1.411	5.221	712	1.981	2.693
Ships	21.844	208	22.052	92.523	6.275	98.798	63.670	50.234	113.904	28.160	45.551	73.711
Goats	791	248	1.039	2.470	578	3.048	2.084	3.049	5.133	412	2.605	3.017

Source: Organic production capacities, http://www.mzsv.gov.mk/?q=node/220

Financialsupport for thedevelopmentoforganic farmingin the countryfollows the trendof increasingcapacities (Figure 3). Theprojectedfundsforsupporting organic farming in 2012 amounting to 130,000,000 MKD were fully realized. Measures of this program provideinc reased financial support o f30% of organic production compared to regular production, as well as additional support forthe process in gandtrade oforganicproducts, followed bycoverageof50% of the cost ofcertificationfor organicproduction.

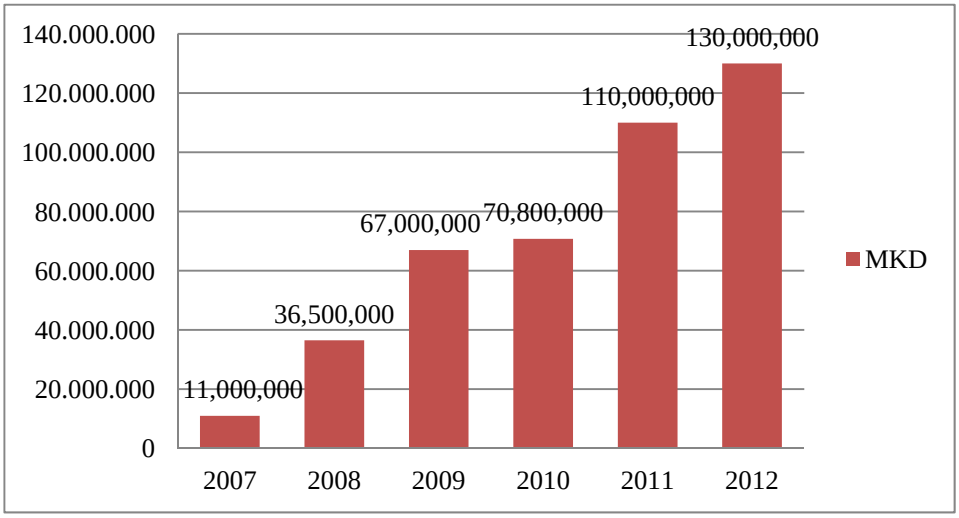

Figure 3: Financialsupportfor organicfarming inthe Republic of Macedonia for the period 2007-2012, (in MKD)

Source: Facts and numbers, http://www.mzsv.gov.mk/?q=node/220

MODEL FOR CREATING ORGANIC FARMING KNOWLEDGE SYSTEM IN THE REPUBLIC OF MACEDONIA

As it was elaborated earlier, Macedonian organic farming is strongly supported by the government, and therefore, we believe that organic farming knowledge system should be integral part of the national agricultural knowledge system (AKS), and its extension services, asits modus operandi.

The Macedonian AKS, as a part of former Yugoslav federation ASK,is dating back from 1960s, when was primarily aimed to transfer scholarly work on agricultural advice and extension. Thatsystem was driven by centralized agricultural policy, intended to coordinate knowledgeand innovation transfer in order to accelerate development and modernization of Macedonian agriculture. The result was strong integration of public research, education and extension bodies, mainly coordinated and controlledby the Ministry of Agriculture. That AKS was highly functional, and indeed, up until late 80^{-es} of the last century, contributed greatly to development of Macedonian agriculture, especially in transferring of knowledge about new production, crop rotation and crop protection techniques, animal welfare and use of mechanization. In the early 1990s, the country become independent and went througheconomic transition that caused rather drastic changes of the agricultural sector, including the AKS. Namely, research, extension

and education in Macedonian agricultural sector have undergone a deep restructuring, transformedby the trend towards liberalization, accompanied also with the large scale introduction of computers. In this existing AKS we propose organic farming to be introduced as socalled “system innovation”, with participatory, or “side by side“ network approach towards all actors and knowledge devices in organic farming knowledge system. Expected outcome is to have a set of organic farmingactors and/or persons, as well as links and interactions between them, engaged in the generation, transformation, transmission,storage, retrieval, integration, diffusion and utilization of organic farming knowledge and information, with thepurpose of working synergistically to support decision making, problem solving and innovationin organic agriculture. (Röling & Engel, 1991, pp. 63.). This approach should also enable existing AKS to propose and develop practical ideas to support innovation, knowledgetransfer and information exchange between actors in organic farming. Incorporation of organic farming into existing Macedonia AKS as a “system innovation” will introduce operational techniques that will reflect the manner in which development and innovation in organic agriculture actually occurs today: often through diffuse networks of actors who are not necessarilyfocused on traditional research and development. This will enable the AKS toencompass and influence the complexity of knowledge and innovationprocesses in the organic agriculture sphere and will help organic farmers to become more compatible with broader sustainability goals. Additionally, having the organic farming as a “system innovation” will for sure help the existing AKS to address the more complex reality of modern agriculture, as well as theemergence of a new paradigm based on sustainable development rather than on productivism.

In this model the four sets of actors act upon the knowledge of organic farmers andgenerate innovations in response to problems and opportunities, desired outcomes, systemdrivers and regulative policies and institutions (Figure 1). However, as the left-hand side of Figure 4. shows, problems are not simply given by the context. Rather, they are framed indifferent ways by specific paradigms. The same is true of material inputs and knowledge, whichare also shaped by paradigms. Such differences are important in framing research priorities,societal choices and public accountability.

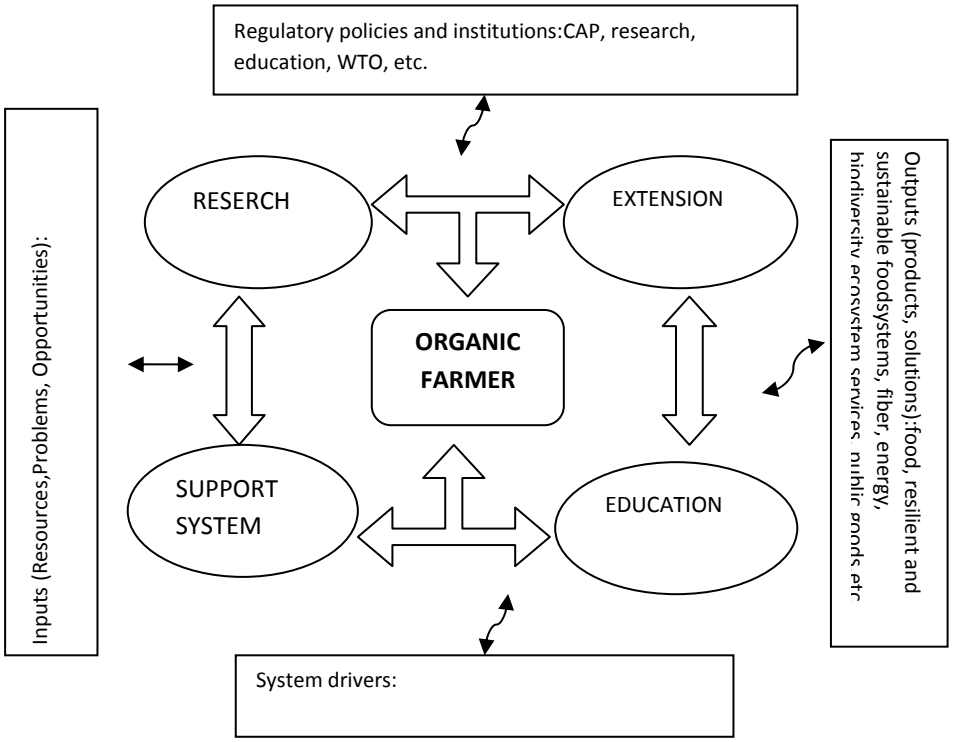

Figure 4. A model of an organic farming knowledge system

Source: Adapted by Dockès et al. 2005

The emphasis in this AKS is introducing organic farming both as economic, social and environmental innovations into themodel and is influenced by paradigm shifts (that parallel those that are occurring in researchand innovation policies) towards network driven multi-actor innovations and even a step further-towards Life Long Learning.

CONCLUSION

Organic agriculture in the Republic of Macedonia is one of the fastest growing agricultural sectors, with double-digit annual growth in land under organic cultivation, value of organic products and number of organic farmers. Most of the success has been achieved through the vision and enterprise of individuals and local farming groups operating with great support of the Government, both in terms of subsidies and legal framework. The problem with governmental support is that the integrity and motivation ofa purely government-driven initiative can attract criticism and the concentration of too muchinfluence in the hands of politicians and civil servants, which in democratic societies is perceived as undesirable. Never the less, state support for organic agriculture in Macedonia is significant and therefore, the organic agriculture knowledge system must bebuilt up within the national agricultural knowledge system. Accepting organic farming as "system innovation"will transform existing Macedonian agricultural knowledge system towardsmore participatory model of functioning.We firmly believe that proposed model for organic farming knowledge system in the Republic of Macedoniawill gather tacit and local knowledge and willestablish organic farmers as more autonomous "knowing agents" both at farm and food-chain and in the same time will induce process of transdisciplinary co-production of knowledge among farmers and all other actors of the knowledge system.

REFERENCES

[1] Assouline, G. and F. Just (eds.) (2000) Making agriculture sustainable: The role of farmers' networking and institutional strategies. Final report. European Research Project DG XII Environment and Climate Program.

[2] Blanc, Julien (2009) Family farmers and major retail chains in the Brazilian organic sector: Assessing new development pathways. A case study in a peri-urban district of Sao Paulo. Journal of Rural Studies 25(3): 322-332.

[3] Dockès, A, T.Tisenkopfs and B. Bock (2011): WP1 Reflection paper on AKIS. Collaborative Working GroupAgricultural Knowledge and Innovation Systems.Institute for Rural Development Research at Johann Wolfgang Goethe University,Frankfurt/Main (DE).

[4] Ingram, M. (2007) Biology and beyond: The science of "back to nature" farming in the United States. Annals of the Association of American Geographers 97(2): 298-312.

[5] Kummer S., Aigelsperger L., Milestad R., Chowdhury A., Vogl C., "Knowledge systems, innovation and social learning in organic farminag-An overview".European IFSA Symposium, 4-7 July 2010, Vienna (Austria)

[6] Niggli, U., A. Slabe, O. Schmid, N. Halberg and M. Schlüter (2008) Vision for an Organic Food and Farming. Research Agenda to 2025. Organic Knowledge for the Future. Technology platform ORGANICS, IFOAM Regional Group European Union (IFOAM EU Group).

[7] Petersen K., Hurley E., (2003)"Information needs of organic farmers", Institute of Natural Resources, College of Sciences, Massey University.

[8] Rogers, E. M. (2003).Diffusion of innovations (5th ed.). New York: Free Press

[9] Röling, N. G., & Engel, P. G. H. (1991): IT from a knowledge system perspective: concepts and issues. Paper presented at the European Seminar on Knowledge Management and Information Technology, Wageningen.

[10] Sumner, J. (2008) Protecting and promoting indigenous knowledge: environmental adult education and organic agriculture. Studies in the Education of Adults 40(2): 207-223.

[11] Vilkka, L. (1997). The intrinsic value of Nature. Value Inquiry Book Series No. The University of Helsinki, Finland,pp. 168.

[12] Walker, B. and D. Salt (2006) Resilience thinking. Sustaining ecosystems and people in a changing world. Island Press, Washington DC.