

ISSN 2560-421X

UDK 33+502/504

ECONOMICS

of Sustainable Development

1



Vol. III

Niš, 2019

UDK 33+502/504

ECONOMICS OF SUSTAINABLE DEVELOPMENT
ЕКОНОМИКА ОДРЖИВОГ РАЗВОЈА



ДРУШТВО ЕКОНОМИСТА “ЕКОНОМИКА” НИШ
SOCIETY OF ECONOMISTS “ЕКОНОМИКА”, NIS

ECONOMICS

OF SUSTAINABLE DEVELOPMENT

EDITOR-IN-CHIEF:

Prof. Dragoljub Simonovic, Ph.D., University of Nish, Faculty of Economics, Serbia

ASSISTANT EDITORS-IN-CHIEF:

Zoran Simonovic, Ph.D., Institute of Agricultural Economics, Belgrade, Serbia

EXECUTIVE EDITORS:

Prof. Bojan Krstic, Ph.D., University of Nish,
Faculty of Economics, Serbia

Prof. Snezana Zivkovic, Ph.D., University of
Nish, Faculty of Occupation Safety, Serbia

Prof. Slobodan Milutinovic, Ph.D., University
of Nish, Faculty of Occupation Safety, Serbia

Prof. Sonja Jovanovic, Ph.D., University of
Nish, Faculty of Economics, Serbia



PUBLISHER: Society of Economists "Ekonomika", Nis

EDITORIAL BOARD

Prof. Tatjana Ivanova, Ph.D., Ulyanovsk State University, Russia

Prof. Marijan Cingula, Ph.D., University of Zagreb, Faculty of Economics, Croatia

Tatjana Anatoljevna Salimova, Ph.D., Mordovia State University "N.P.Ogarev", Faculty of Economics, Saransk, Russia

Prof. Zorica Vasiljevic, Ph.D., University of Belgrade, Faculty of Agriculture, Serbia

Prof. Aleksandar Grubor, Ph.D., University of Novi Sad, Faculty of Economics, Serbia

Prof. Andriela Vitic-Cetkovic, Ph.D, University of Montenegro, Faculty of Tourism and Hotel Management, Kotor, Montenegro

Prof. Velimir Stefanovic, Ph.D., University of Nish, Faculty of Mechanical Engineering, Serbia

Prof. Dragoljub Zivkovic, Ph.D., University of Nish, Faculty of Mechanical Engineering, Serbia

Prof. Slavko Bozilovic, Ph.D., University Union-Nikola Tesla, Serbia

Prof. Lela Ristic, Ph.D., University of Kragujevac, Faculty of Economics, Serbia

Prof. Jugoslav Anicic, Ph.D., University Union-Nikola Tesla, Serbia

Prof. Dejan Krstic, University of Nish, Faculty of Occupation Safety, Serbia

Prof. Danijela Despotovic, Ph.D., University of Kragujevac, Faculty of Economics, Serbia

Prof. Sanja Filipovic, Ph. D., Economics Institute, Belgrade, Serbia

Prof. Mirjana Radovanovic, Ph. D., Educons University, Sremska Kamenica, Serbia

Prof. Violeta Domanovic, Ph. D., University of Kragujevac, Faculty of Economics, Serbia

Prof. Vesna Stojanovic Aleksic, Ph. D., University of Kragujevac, Faculty of Economics, Serbia

Prof. Vladimir Micic, Ph.D., University of Kragujevac, Faculty of Economics, Serbia

Prof. Svetislav Milenkovic, Ph.D., University of Kragujevac, Faculty of Economics, Serbia

Prof. Dragana Gnjatovic, Ph.D., University of Kragujevac, Faculty of Hotel Management and Tourism, Vrnjci Spa, Serbia

María Dolores Sánchez-Fernández, Ph.D., University of A Coruña, Spain

Prof. Electra Pitoska, Ph.D., School of Management & Economics, Kozani, Greece

Prof. Mirko Markič, Ph.D., Faculty of Management Koper, University of Primorska, Koper, Slovenia

Prof. Konrad Grabinski, Ph.D., Crakow University of Economics, Crakow, Poland

Prof. Drago Cvijanovic, Ph.D., University of Kragujevac, Faculty of Hotel Management and Tourism, Vrnjci Spa, Serbia

Predrag Vukovic, Ph. D., Institute of Agricultural Economics, Belgrade, Serbia

Prof. Nikola Radivojevic, Ph.D., High Technical School of Professional Studies, Kragujevac, Serbia

Nikola Curcic, Ph. D., University Union-Nikola Tesla, Serbia

Prof. Marko Jankovic, Ph.D., Faculty of Business Economics and Entrepreneurship, Belgrade, Serbia

Prof. Ana Langović Miličević, Ph.D., University of Kragujevac, Faculty of Hotel Management and Tourism in Vrnjačka Banja, Serbia

Prof. Milovan Vukovic, Ph.D., University of Belgrade, Technical Faculty, Bor, Serbia

Ivana Karabegovic, Ph.D., University of Nish, Faculty of Technology, Leskovac, Serbia

PUBLISHING COUNCIL

Prof. Jelena Petrovic, Ph.D., University of Nish,
Faculty of Sciences and Mathematics, Serbia

Prof. Slobodan Cvetanovic, Ph.D., University of
Nish, Faculty of Economics, Serbia

Prof. Vesna Sekulic, Ph.D., University of Nish,
Faculty of Economics, Serbia

Prof. Snezana Radukic, Ph.D., University of Nish,
Faculty of Economics, Serbia

Prof. Marija Petrovic Randjelovic, Ph.D.,
University of Nish, Faculty of Economics, Serbia

Prof. Igor Mladenovic, Ph.D., University of Nish,
Faculty of Economics, Serbia

Prof. Svetlana Sokolov Mladenovic, Ph.D.,
University of Nish, Faculty of Economics, Serbia

Boban Nikolic, Ph.D., University of Nish, Faculty
of Mechanical Engineering, Serbia

Tanja Stanisic, Ph.D., University of Kragujevac,
Faculty of Hotel Management and Tourism in
Vrnjačka Banja, Serbia

Filip Djokovic, Ph.D., Singidunum Univrsity,
Belgrade, Serbia

Tamara Radjenovic, University of Nish, Faculty
of Economics, Serbia

Miloš Krstic, Ph.D., University of Nish, Faculty of
Sciences, Serbia

Vladimir Radivojevic, Ph.D., Ministry of Defense,
Serbian Armed Forces, Belgrade, Serbia

Jelena Stanojevic, M.Sc., Univeristy of Nish,
Faculty of Science, Serbia

Ernad Kahrovic, Ph.D., Department of Economic
Sciences, State University of Novi Pazar, Serbia

Lector

VLADIMIR IVANOVIĆ

Prepress & Cover:

MILAN D. RANDJELOVIĆ

Address:

“EKONOMIKA”, Society of Economists
18000 Nis, Maksima Gorkog 5/36

Phone: +381 (0)18 4245 763; 211 443
e-mail: zoki@medianis.net; ekonomika@sbb.rs
WEB: <http://www.ekonomika.org.rs>

Bank Account: 160-19452-17

Printed by:

“MEDIVEST”

18000 Niš

Copies: 200

САДРЖАЈ / CONTENT

ОРИГИНАЛНИ НАУЧНИ РАДОВИ / ORIGINAL SCIENTIFIC ARTICLE

Sonja Jovanović

GREEN HOTELS AS A NEW TREND IN THE FUNCTION OF
SUSTAINABLE DEVELOPMENT AND COMPETITIVENESS
IMPROVEMENT 1

ЗЕЛЕНИ ХОТЕЛИ КАО НОВИ ТРЕНД У ФУНКЦИЈИ ОДРЖИВОГ
РАЗВОЈА И УНАПРЕЂЕЊА КОНКУРЕНТНОСТИ 1

Snežana Radukić, Marija Petrović-Randelović, Zorana Kostić

SUSTAINABILITY-BASED GOALS AND ACHIEVED
RESULTS IN WESTERN BALKAN COUNTRIES 9

ЦИЉЕВИ ОДРЖИВОГ РАЗВОЈА И ОСТВАРЕНИ РЕЗУЛТАТИ У
ЗЕМЉАМА ЗАПАДНОГ БАЛКАНА 9

ПРЕГЛЕДНИ РАДОВИ / SCIENTIFIC REVIEW ARTICLE

Nemanja Veselinović, Martina Veselinović

TECHNOLOGICAL INNOVATION IN THE PETROLEUM
INDUSTRY – THE CASE OF NIS J.S.C. NOVI SAD 19

ТЕХНОЛОШКЕ ИНОВАЦИЈЕ У НАФТНОЈ ИНДУСТРИЈИ – СЛУЧАЈ
НИС А.Д. НОВИ САД 19

Milica Đokić

SUSTAINABLE AGRICULTURAL AND RURAL DEVELOPMENT
IN THE EUROPEAN UNION 29

ОДРЖИВИ АГРАРНИ И РУРАЛНИ РАЗВОЈ У ЕВРОПСКОЈ УНИЈИ 29

Monia Milutinović

PRIVATE WEALTH MANAGEMENT: THE CASE OF THE REPUBLIC
OF SERBIA 45

УПРАВЉАЊЕ ПРИВАТНИМ БОГАТСТВОМ: СЛУЧАЈ РЕПУБЛИКЕ
СРБИЈЕ 45

Sonja Jovanović¹
University of Niš
Faculty of Economics

P. 1-7
ORIGINAL SCIENTIFIC ARTICLE
Received: March, 30, 2019
Accepted: June, 15, 2019

GREEN HOTELS AS A NEW TREND IN THE FUNCTION OF SUSTAINABLE DEVELOPMENT AND COMPETITIVENESS IMPROVEMENT²

Abstract

The competitiveness of the hotel industry is a vital component for ensuring the sustainable development of tourism, since hotel industry is one of the largest segments of the tourism industry. One of the important prerequisites for achieving competitiveness in the tourism market is business based on the principles of sustainable development. The incorporation of the sustainability principle into all segments of tourism supply and demand becomes inevitable and increasingly acceptable. The subject of research in this paper is an analysis of the various practices that hotels are introducing into their business to meet the demands of tourists who are environmentally aware and to operate in accordance with the concept of sustainable development. Therefore, the aim of the research is to present the green construction and green business of the hotels as a challenge for the hotel industry in contemporary business conditions.

Key words: green hotels, competitiveness, sustainable development, standards.

JEL classification: Z320, Z310

ЗЕЛЕНИ ХОТЕЛИ КАО НОВИ ТРЕНД У ФУНКЦИЈИ ОДРЖИВОГ РАЗВОЈА И УНАПРЕЂЕЊА КОНКУРЕНТНОСТИ

Апстракт

Конкурентност хотелске индустрије је витална компонента за обезбеђење одрживог развоја туризма, будући да је хотелијерство један од највећих сегмената туристичке индустрије. Једна од важних претпоставки за достизање конкурентности на туристичком тржишту јесте и пословање засновано на принципима одрживог развоја. Уграђивање принципа одрживости у све сегменте туристичке понуде и тражње постаје неизбежно и све више прихватљиво. Предмет истраживања у овом раду јесте анализа различитих пракси које хотели уводе у своје пословање како би изашли у сусрет тражњи туриста који су еколошки свесни и како би пословали у складу са концептом одрживог развоја. Отуда је циљ истраживања да се прикажу зелена градња и зелено пословање хотела као изазови за хотелску индустрију у савременим условима пословања.

Кључне речи: зелени хотели, конкурентност, одрживи развоја, стандарди.

¹ sonja.jovanovic@eknfak.ni.ac.rs

² The paper is a result of research within the project 179066, funded by the Ministry of Education, Science and Technological Development of the Republic of Serbia

Introduction

The concept of sustainable development is a modern approach when creating policies and strategies of future development in all aspects of economic and social life. The incorporation of the sustainability principle into all segments of tourism supply and demand becomes inevitable and increasingly acceptable. "Nowadays, environmental practices are already part of our daily lives and are changing the way we travel. In this framework, new trends are appearing within the tourism/travel industry and leisure activity all over the world. Over the last decades, the demand of business sustainability made by customers has encouraged the rise of numerous eco-friendly practices in the tourist industry." (Leal Londoño, Hernandez-Maskivker, 2016).

The hotel industry represents a segment of the tourist offer that creates a great negative pressure on the environment. Because of that „it is imperative that the management of hotels take action to mitigate their impact on the environment.“ (Mbasera, Du Plessis, Saayman, & Kruger, 2016) There are different ways that business of hotel companies become environmentally friendly or that hotels carry the title of green or sustainable. „Initially green practices of operators are in the area of energy, waste and water. Later the green operators expand their green initiatives in other area such as indoor environmental quality, green materials and resources, sustainable site planning and management, community involvement, biodiversity conservation, human resources development, green transportation, noise control and toxic waste management.“ (Yusof, Jamaludin, 2014, p.502)

The subject of research in this paper is an analysis of the various practices that hotels are introducing into their business to meet the demands of tourists who are environmentally aware and to operate in accordance with the concept of sustainable development. One of the important prerequisites for achieving competitiveness in the tourism market is business based on the principles of sustainable development. Therefore, the aim of the research is to present the green construction and green business of the hotel as a challenge for the hotel industry in moderncontemporary business conditions.

Factors for improving competitiveness in the hospitality industry in contemporary business conditions

The competitiveness of the hotel industry is a vital component for ensuring the sustainable development of tourism, since hotel industry is one of the largest segments of the tourism industry. „Each hotel, regardless of its classification, may contribute to the overall performance of the local and national hospitality and tourism industry.“ (Lacap, 2014, p. 116) Therefore, consideration for factors that can contribute to improving the competitiveness of the hotel industry is reflected in the provision of a higher level of competitiveness of the destination and the overall tourism industry.

Some of the most important factors contributing to the improvement of the competitiveness of the hotel industry are: human resources, information technology, education. Some authors point out that both innovation and costs are key factors in the competitiveness of the hotel industry. (Țuclea, Pădurean, 2008)

Some authors lists some of the most important factors that will affect competitiveness in hotel industry in contemporary conditions (Črnjar, Vrtodušić-Hrgović, 2013, p. 68):

- the ability of business entities to interact in managing shared resources;
- technology and information technology;
- the ability to transform a company into an organization that is learning and its involvement in a knowledge-based economy;
- the quality of human resources that represent the center of activity in the hotel industry from the creation of products and services to their provision;
- knowledge management and human resources development to improve quality in all segments;
- quality management and continuous improvement of production of products, services, processes.

Other authors point out that marketing and human capital, both in the case of a destination, and in the case of the hotel industry, are key to improving competitiveness. It is especially emphasized that the important factors for the hotel industry are the factors and level of education and the provision of training and training for employees. (Tsai, Song, Wong, 2009)

It can be said that stronger competition stimulates innovation and improves business performance. Hotels confronted with strong competition are innovating products, improving the quality of service, introducing modern technology into their business, approaching modern trends in hotel design, specializing in a particular type of hotel, orienting towards the concept of green business.

In the continuation of this paper accent will be on green business as one of the most important factors that can contribute to improving the competitiveness of hotel companies.

Characteristics and practice of green hotels

The demand for clean areas, nature, intact areas, is growing. The interest in sustainable development within the hotel industry is becoming more pronounced. More than a hundred hotels in Hungary have received the title green hotel in the last twenty years. (Attila, 2016, p. 93) By definition *Green Hotel Association* (Green Hotels Association, 2019), green hotels are ecologically oriented facilities that save water, energy, reduce solid waste in their business and thus save money and contribute to protecting and preserving the entire Planet. Through this definition, responsibility for the environment, as well as the local community and the wider, of the entire Planet, is emphasized.

The construction and operation of hotel companies have a significant negative impact on the environment. Hotels are large consumers of energy, water, chemicals for cleaning and maintenance, generators of wastewater. Therefore, the orientation towards green construction and green business provides a friendly attitude towards the environment, approaching the objectives of the sustainable development concept, meeting the demands of an increasing number of tourists who have developed environmental awareness and appreciate this kind of business. Green design and construction of the

hotel allows not only environmentally responsible behavior, but also luxury environment and economic cost-effectiveness. (Ahn, Pearce, 2013)

„More and more modern tourists are ready to pay the price addition in order to stay in a hotel that does not harm the environment.“ (Bašić, 2015, p. 409) Access to green business allows not only cost savings and improvement of business performance, but also recognizability in the market that more and more tourists demand. Adapting hotel business to green practice, enables its differentiation in a highly competitive market and separation from other hotel offers, thus providing a competitive advantage. „The green attributes of a hotel that influence the creation of their green image are a powerful means of attracting new guests, their satisfaction and loyalty in a competitive environment.“ (Sekulić, Maksimović, 2013, p. 259)

Business in green hotels involves the automatic shutdown of electronic devices after leaving the room, time limited water flow, recycling of waste. “Green hotels are more energy efficient, recyclable, use renewable energy sources, are less harmful to the environment and are suitable for health tourism, so, besides reducing operating costs, they can operate all year round and increase competitiveness.“ (Bašić, 2015, p. 414)

Among the countries in the region, Croatia and Slovenia stand out from the most green hotels. There are several hotels in Croatia that operate according to the principles of green business. Among these hotels „is Hotel Split, a certified facility of energy class A that has its own solar power plant, rains rainwater, offers food from domestic production and controlled origin, uses biodegradable cleaning products, lighting designed in LED technology and many other elements of green tourism.“ (Bašić, 2015, p. 414)

In order for the hotel to be recognized as green, it needs to fulfill certain standards that enable it to obtain the certificate. The world’s best-known green certificates are: *EarthCheck* (won by hotels leading environmental awareness), *Green Globe* (based on Agenda 21 and sustainable development principles from the 1992 Rio Summit), the *Sustainable Tourism Eco-Certification Program*. The *Energy Star* certification is provided by hotels that support energy efficiency, *Green Key* - hotels that respect eco-standards in business, *Green Seal* – hotels that save water, energy, recycle, *Leadership in Energy and Environmental Design (LEED)* - a certificate awarded to hotels that have built green building rules during construction, the *Green Tourism Business Scheme (GTBS)* - an affiliate scheme for the United Kingdom. In Serbia, *Radisson Blu Old Mill*, part of the *Carlson Rezidor Group*, and *In Hotel* in Belgrade have the *Green Key* certification since 2015.

Table 1 shows ten hotels in te world that are rated as the best green hotels according to HotesCombined criteria.

Table 1: Top seven green hotels according to HotelsCombined

Hotel	Examples of green practice
Hi Hotel, Nice, France	This hotel has received Green Globe certification for using recycled paper, organic paint, eco-friendly cleaning products and organic food.
Hix Island House, Isla de Vieques, Puerto Rico	With a focus on nature, the Hix Island House runs on batteries charged by solar power. It also recycles rainwater, was designed to catch cooling winds and returns grey water to the environment.

Garonga Safari Camp, Phalaborwa, Africa	This hotel offer employment opportunities for locals, with potential for career development, while food and goods are sourced locally where possible. Additionally, guests are invited to offset their carbon footprint by assisting with the planting and growing of Spesbok Trees in the Eastern Cape.
Lefay Resort & SPA Lago di Garda, Gargnano, Italy	The interior design makes use of local materials, while the design of the hotel was fashioned in respect to the surrounding landscape and environment. Rainwater is collected, and the hotel has a sustainable approach to waste management.
Thala Beach Lodge, Port Douglas, Australia, Port Douglas, Australia	This resort has been awarded with one of the highest eco-tourism accreditations, <i>Eco certified – Advanced Tourism</i> .
Park Hyatt Maldives Hadahaa, Maldives	Various parts of the hotel are built over the water in the Indian Ocean in order to minimize interference with the natural environment. Park Hyatt Maldives Hadahaa has been the recipient of a silver <i>EarthCheck</i> certificate.
The Park Hyderabad, Hyderabad, India	Park Hyderabad’s stunning exterior maximizes natural light, reducing the need for electricity. Green transportation, bikes and electric cars is encouraged. The hotel fuses local culture with exceptional design and has achieved <i>Leed Gold</i> certification.
Spice Island Beach Resort, St. George’s, Grenada	The resort uses solar heating, desalination plants and all forms of energy conservation. There is a focus on maximizing the preservation of the island via community clean-ups, replanting and non-chlorinated pools. Smoking of any kind (even e-cigarettes) is forbidden in all areas of the resort which places an emphasis on body and soul renewal.
Alila Villas Soori, Bali, Indonesia	The resort is completely water efficient with rainwater optimized to meet all of their water needs. More than half of all ingredients, goods and services are purchased from the local area. Locally sourced materials such as sand stone and natural stones were used in building the resort, which incorporates a combination of indigenous volcanic rock and abundant plants to organically cool the villas.
Six Senses Con Dao, Con Dao, Vietnam	Six Senses Con Dao has been recognised as one of the world’s top eco lodges by National Geographic Traveler. Built using sustainable building materials, the structure of the resort is designed to maximize air flow to reduce the need for air conditioning.

Source: *HotelsCombined*, <https://blog.hotelscombined.com/travelling-green-the-worlds-top-eco-friendly-hotels/>

Green building orientation, which includes the use of natural materials, the use of renewable energy sources, as well as various forms of water and material recycling, are some of the most common practices of green hotels. Taking care of the employment of people from the local community, as well as encouraging agricultural production through the use of local food in the offer of these hotels, represent a sustainable practice and respect for the principles of sustainable development.

Conclusion

One of the important prerequisites for achieving competitiveness in the tourism market is business based on the principles of sustainable development. The incorporation of the sustainability principle into all segments of tourism supply and demand becomes inevitable and increasingly acceptable.

The interest in sustainable development within the hotel industry is becoming more pronounced. Green business as one of the most important factors that can contribute to improving the competitiveness of hotel companies. Hotels are large consumers of energy, water, chemicals for cleaning and maintenance, generators of wastewater. Therefore, the orientation towards green construction and green business provides a friendly attitude towards the environment, approaching the objectives of the sustainable development concept, meeting the demands of an increasing number of tourists who have developed environmental awareness and appreciate this kind of business.

Green building orientation, which includes the use of natural materials, the use of renewable energy sources, as well as various forms of water and material recycling, are some of the most common practices of green hotels. Taking care of the employment of people from the local community, as well as encouraging agricultural production through the use of local food in the offer of these hotels, represent a sustainable practice and respect for the principles of sustainable development.

References

- Ahn, Y. H., Pearce, A. R. (2013) Green Luxury: a case study of two green hotels, *Journal of Green Building*, Vol. 8, No. 1.
- Attila, A. T. (2016) The impact of the hotel industry on the competitiveness of tourism destinations in Hungary, *Journal of Competitiveness*, Vol. 8, No. 4, str. 93.
- Bašić, I. (2015) Novi trendovi u funkciji povećanja konkurentnosti hrvatskog turizma u 21. stoljeću, *Zbornik radova „Prostorno planiranje kao čimbenik razvoja u županijama“*, Rijeka: Javna ustanova Zavod za prostorno uređenje Primorsko-goranske županije, str. 409.
- Črnjar, K., Vrtodušić-Hrgović, A. M. (2013) Znanje i kvaliteta – uvjet konkurentnosti hotelijerstva Hrvatske, *Poslovna izvrsnost*, Vol. 7, No. 2, str. 68.
- Green Hotels Association (2019) <http://greenhotels.com/index.php> (17.04.2019.)
- Han, H., Hsu, L. T. J., Lee, J. S., Sheu, C. (2011) Are lodging customers ready to go green? An examination of attitudes, demographics, and eco-friendly intentions, *International Journal of Hospitality Management*, Vol. 30, No. 2, str. 350.
- HotelsCombined (2019) <https://blog.hotelscombined.com/travelling-green-the-worlds-top-eco-friendly-hotels/>, (25.03.2019.)
- Lacap, J. P. G. (2014) Competitiveness and sustainability of the hotel industry: the case of hotels in Pampanga, *Business Management and Strategy*, Vol. 5, No. 1, str. 116.
- M. P. Leal Londoño & G. Hernandez-Maskivker, Green practices in hotels: the case of the GreenLeaders Program from TripAdvisor, *Proceedings of the 7 International Conference on Sustainable Tourism (ST 2016)*, <https://www.witpress.com/Secure/elibrary/papers/ST16/ST16001FU1.pdf>
- Mbasera, M., Du Plessis, E., Saayman, M. & Kruger, M. 2016, 'Environmentally-friendly practices in hotels', *Acta Commercii* 16(1), a362. <http://dx.doi.org/10.4102/ac.v16i1.362>, (25.03.2019.)

- Sekulić, D., Maksimović, N. (2013) Zeleni hoteli: značaj „zelenih” atributa za potrošače u hotelijerstvu, *Ecologica*, br. 70, str. 259.
- Tsai, H., Song, H., Wong, K. K. F. (2009) Tourism and hotel competitiveness research, *Journal of Travel & Tourism Marketing*, Vol. 26, No. 5-6.
- Țuclea, C. E., Pădurean, A. M. (2008) Competitiveness in hospitality industry: Romanian style, *Management and Marketing Journal*, Vol. 6, No. 1.
- Zeenat Begam Yusof*, Mariam Jamaludin (2014) Barriers of Malaysian Green Hotels and Resorts, *Procedia - Social and Behavioral Sciences* 153 (2014) 501 – 509, p. 502

Snežana Radukić¹
Marija Petrović-Randelović²
Zorana Kostić³
University of Niš
Faculty of Economics

P. 9-18
ORIGINAL SCIENTIFIC ARTICLE
Received: May, 15, 2019
Accepted: June, 20, 2019

SUSTAINABILITY-BASED GOALS AND ACHIEVED RESULTS IN WESTERN BALKAN COUNTRIES⁴

Abstract

Agreed upon by the United Nations, the seventeen Sustainable Development Goals (SDGs) set out a framework to tackle the world's most pressing social, economic, and environmental challenges in the lead-up to 2030. They provide a network to support business in managing risks and identifying market opportunities. The Sustainable Development Goals have the potential to accelerate innovation and economic growth. However, the ambitious goals will require new models of collaboration between companies, sectors, countries, and regions. The special attention in this paper is given to the analysis of the achieved results in the Western Balkan countries in 2018 measured by the composite indicator such as Sustainable Development Goals Index. The basic research question in the research is: Are all the Western Balkans countries lagging behind the average of the region Eastern Europe and Central Asia in achieving the sustainable development goals?

Key words: sustainable development goals, index, Western Balkan countries

JEL classification: Q53

ЦИЉЕВИ ОДРЖИВОГ РАЗВОЈА И ОСТВАРЕНИ РЕЗУЛТАТИ У ЗЕМЉАМА ЗАПАДНОГ БАЛКАНА

Апстракт

Договорени од стране Уједињених нација, седамнаест циљева одрживог развоја (СДГс) поставило је оквир за решавање најзначајнијих друштвених, економских и еколошких изазова до 2030. године. Они пружају мрежу подршке пословној заједници приликом управљања ризицима и идентификовања тржишних прилика. Циљеви одрживог развоја имају потенцијал да убрзају иновације и економски раст. Међутим, амбициозни циљеви одрживог развоја ће

¹ snezana.radukic@eknfak.ni.ac.rs

² marija.petrovic-randjelovic@eknfak.ni.ac.rs

³ zoksinis@gmail.com

⁴ The paper is part of the Project No. 179066 and No. 44007 funded by the Ministry of Education, Science, and Technological Development of the Republic of Serbia.

захтевати нове моделе сарадње између компанија, сектора, држава и региона.

Посебна пажња у овом раду посвећена је анализи постигнутих резултата у земљама Западног Балкана у 2018. години мерено композитним индикатором као што је Сустанабиле Девелопмент Гоалс Индекс. Основно истраживачко питање од којег се пошло приликом истраживања гласи: Да ли све земље Западног Балкана заостају за просеком региона Источна Европа и Централна Азија у погледу остварених циљева одрживог развоја?

Кључне речи: *циљеви одрживог развоја, индекс, земље Западног Балкана*

Introduction

Recognizing the fact that achieving the SDGs and harnessing the potential they represent is beyond the reach of any single company, the ambitions of the goals need coordination and collective efforts from entire sectors, countries and regions. Therefore, it is critical that leading companies and countries are able to develop detailed "roadmaps" to sustainable development in line with the SDGs.

In the context of sustainable development policy analysis indicators are useful in identifying trends and drawing attention to particular issues. They can also be helpful in setting policy priorities and in benchmarking or monitoring performance. The sustainable development index, as composite indicator, is formed in order to comply individual indicators into a single variable and to measure multidimensional concept which cannot be captured by a single indicator (**Joint Research Centre-European Commission, 2008**).

Basically, there are comprehensive alternatives to business that would help to change the course towards more coherent policies for sustainable development aligned with human rights principles and standards. It is important to recognize that the current problems of growing inequalities, unsustainable production and consumption are deeply connected with power hierarchies, institutions, culture and politics. Future actions and reforms which are necessary can be summarized in the following clusters (**Civil Society Reflection Group on the 2030 Agenda for Sustainable Development, 2018**):

- Turning the commitment to policy coherence into practice;
- Strengthening public finance at all levels;
- Improving regulation for sustainability and human rights;
- Better use or creation of new legal instruments;
- Refining measures and indicators of sustainable development;
- Closing global governance gaps and strengthening the institutional framework for sustainable development.

The sustainable development strategy process offers an opportunity to build on the complementarities of programmes in the economic, environmental and social spheres to improve the longterm effectiveness of government policy agendas. Greater attention should be paid to the content of national sustainable development strategies (policy dimensions, timeframes, analytical tools), governance aspects (institutions, stakeholders, local links), and the processes for improving them (indicators, targets, monitoring). There is no single method, specific entry point or ideal co-ordinating

mechanism for these strategies, which will reflect the economic, social, environmental and cultural specificities of countries" (**Organisation for Economic Co-operation and Development, 2006**).

The paper proceeds as follows. In the next section, we present and discuss the sustainable development policy and goals in the context of 2030 Agenda. The third section summarises the available empirical evidence bearing upon the sustainable development goals index in Western Balkan Countries. Finally, we emphasize the target values for each sustainable development goal by 2030 and give concluding remarks.

The Sustainable Development Policy and Goals in the Context of 2030 Agenda

The European Union (EU) is one of the leading global players in international development. Therefore, a key part of the EU's Multiannual Financial Framework (MFF) is the one reserved for action beyond EU's borders. This budget heading is called 'Global Europe' (also referred to as Heading IV). Under the current budget for the period of 2014 to 2020, over 90 billion euros are available for the external action. The lion's share of this is reserved for development cooperation. The EU has dealt with new challenges in external action mostly by creating specific initiatives and new financial instruments. Heading IV thus appears to be rather complex and fragmented compared to other headings. They also represent a significant market opportunity for business, estimated to be worth at least US\$12 trillion per year by 2030 (**WBCSD, 2018**).

The 2030 Agenda and the sustainable development goals (SDGs) will provide the framework for future European Union development policy. While it will be equally challenging for European Union development policy and for the EU's overall external funding towards the implementation of the SDGs. Mainstreaming the sustainability principle within the geographic programmes Heading IV could ensure that overall the EU takes all three dimensions of sustainability into account. In addition, thematic allocations will gain in importance for the implementation of the 2030 Agenda as well as for a general focus on global public goods. Thematic allocations tend to be cross-country, more flexible and can mobilise funds for specific issue areas (**Hackenesch et al., 2018**).

The Sustainable Development Goals Report 2018 reviews progress in the third year of implementation of the 2030 Agenda for Sustainable Development. This part of the paper presents highlights of progress and remaining gaps for all 17 Sustainable Development Goals, based on the latest available United Nations data, and examines some of the interconnections across goals and targets.

Goal 1: End poverty in all its forms everywhere (Only 45 per cent of the world's population are covered by at least one social protection cash benefit)

Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture (World hunger is on the rise again, Stunting, wasting and overweight still affected millions of children under age 5)

Goal 3: Ensure healthy lives and promote well-being for all at all ages (Births attended by skilled health personnel increased globally)

Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all (More than half of children and adolescents are not achieving minimum proficiency in reading and mathematics)

Goal 5: Achieve gender equality and empower all women and girls (Women spend about three times as many hours in unpaid domestic and care work as men)

Goal 6: Ensure availability and sustainable management of water and sanitation for all (3 in 10 people lack access to safely managed drinking water service, 6 in 10 people lack access to safely managed sanitation facilities)

Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all (4 in 10 people still lack access to clean cooking fuels and technologies)

Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all (Earning inequalities are still pervasive: men earned 12.5 per cent more than women, Youth were three times more likely to be unemployed than adults)

Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (Global carbon intensity decreased by 19 per cent between 2000 and 2015)

Goal 10: Reduce inequality within and among countries (Remittances to low- and middle-income countries represented over 75 per cent of total global remittances)

Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable (Damage to housing due to natural disasters showed a statistically significant rise)

Goal 12: Ensure sustainable consumption and production patterns (Globally by 2018, 108 countries had national policies on sustainable consumption and production, 93 per cent of the world's 250 largest companies are now reporting on sustainability)

Goal 13: Take urgent action to combat climate change and its impacts (The majority of countries have ratified the Paris Agreement and provided nationally determined contributions)

Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development (Open ocean sites show current levels of acidity have increased by 26 per cent since the start of the Industrial Revolution)

Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss (Land degradation threatens the security and development of all countries, The Red List Index shows alarming trend in biodiversity decline for mammals, birds, amphibians, corals and cycads)

Goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels (Proportion of prisoners held in detention without sentencing has remained almost constant in the last decade, Globally, 73 per cent of children under 5 have had their births registered)

Goal 17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development.

Securing a strong and well-resourced Heading IV under the next MFF ultimately depends on the role and place of development policy vis-à-vis other EU policies. The way forward is to promote a strong EU development policy. This relates to the long-term and multi-dimensional nature of sustainable development, the adherence to fundamental values as well as to key principles of aid effectiveness, and implies a move away from the EU's current damage control mode (**Hackenesch et al., 2018**).

The Sustainable Development Goals Index in Western Balkan Countries

In order to compute a global sustainable development measure, many researchers use composite index with an effort to summarise the goals stated in the SDGs. This indicator permits summarising complex and multi-dimensional realities to support decision-makers, it is easier to interpret than a broad range of different indicators, enables country comparison and country evolution assessment over time, and facilitates communication with the general public (Nhemachena et al., 2018, & Hogan et al., 2018).

The Sustainable Development Goals are at the center of the global political agenda to eradicate extreme poverty, achieve universal education, promote gender equality and ensure environmental sustainability between others. They include areas such as economic inequality, environmental sustainability, innovation, peace and justice, sustainable consumption, among other priorities. These goals are organised in 169 indicators, which give an accurate perspective on the main dimensions related with country sustainable development. To gain insight into the relative position of involved countries, it is necessary to develop a composite index that summarises the global progress in the achievement of these goals, but considering possible conflicts and trade-offs between individual goals (Guijarro, & Poyatos, 2018).

Table 1: Graph: The Sustainable Development Goals Index 2018
in Western Balkan countries

Country	Index Score	SDGs Global Rank (of 156)
Albania	68,9	62
Bosnia and Herzegovina	67,3	71
FYRepublic of Macedonia	69	61
Montenegro	67,6	69
Serbia	72,1	40

Source: Authors according to Sachs et al., 2018.

Serbia has achieved the best results in achieving the goals of sustainable development. In addition, Serbia is the only one Western Balkan country that has achieved better results than the regional average (Eastern Europe and Central Asia). It is worth mentioning that regional average score for Eastern Europe and Central Asia was 69,5 in 2018.

The Graph 1 gives an overview of the achieved results by individual goals and by country in 2018. Albania has the best results in achieving end poverty and ensure availability and sustainable management of water and sanitation for all. Also, Bosnia and Herzegovina achieves significant results on this issues, but achieves significant results in reducing inequality and combating climate change. It is characteristic for FYRepublic of Macedonia that considerable attention is paid to ensure healthy lives, promote well-being, ensure inclusive and equitable quality education, and promote lifelong learning opportunities for all. Montenegro's priority goals are those related to end poverty, availability and sustainable management of water and sanitation, and inclusive and equitable quality education as well as promote lifelong learning opportunities for all. Serbia has the best total score among selected countries, but the

best results have been achieved in the next fields: end poverty, inclusive and equitable quality education, sustainable management of water and sanitation for all, sustainable cities and communities and combat climate change and its impacts. In order to emphasize the integrated approach to the concept of sustainability, some authors have considered the key economic and ecological indicators and the need for the coordination of the economic and environmental policy (Stojanović, Radukić, & Kostić, 2015).

Some recent research has focused on the composition of a global sustainable development goals index to summarise the performance of each country regarding the achievement of the goals, considering that some of them are in conflict with others (Guijarro, & Poyatos, 2018; Luukkanen et al., 2015).



Graph 1: The Sustainable Development Goals Index 2018, by country

Source: Sachs et al., 2018.

Sustainable development has long been a central policy objective for the European Union. Achieved results and monitoring report on progress towards the SDGs in an EU context is periodically presented by Eurostat. The indicator set comprises 100 indicators and is structured along the 17 SDGs. For each SDG, it focuses on aspects which are relevant from an EU perspective. The indicator trends are described on the basis of a set of specific quantitative rules (Eurostat, 2018).

"Environmental constraints to rapid economic growth are increasingly recognized by countries, leading to a rising awareness of the need for sustainable development. Implementation of an environmental policy, however, generates significant implications for competition among countries" (Stojanović, & Radukić, 2006, p. 471).

Concluding remarks

The implementation of the 2030 Agenda is not just a matter of better policies. The effectiveness of the required policy reforms in the implementation process requires more holistic and more sweeping shifts in how and where power is vested, and it depends on the existence of strong public institutions at national and international levels. The sustainable development goals define priorities and aspirations to mobilise global efforts among governments, business and civil society.

Respecting the goals, we emphasize the target values for each of them individually: (World Bank Group, 2018).

Goal 1: By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than \$1.25 a day and reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions.

Goal 2: By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.

Goal 3: By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births and by 2020, halve the number of global deaths and injuries from road traffic accidents.

Goal 4: By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes. By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training.

Goal 5: End all forms of discrimination against all women and girls everywhere and enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women.

Goal 6: By 2030, achieve universal and equitable access to safe and affordable drinking water for all. Support and strengthen the participation of local communities in improving water and sanitation management.

Goal 7: By 2030, ensure universal access to affordable, reliable and modern energy services, increase substantially the share of renewable energy in the global energy mix, and double the global rate of improvement in energy efficiency.

Goal 8: Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 percent gross domestic product growth per annum in the least developed countries. Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high- value added and labour- intensive sectors.

Goal 9: Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well- being, with a focus on affordable and equitable access for all. Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries.

Goal 10: By 2030, progressively achieve and sustain income growth of the bottom 40 percent of the population at a rate higher than the national average. Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard.

Goal 11: By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries.

Goal 12: Implement the 10- Year Framework of Programmes on Sustainable Consumption and Production Patterns, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries. By 2030, achieve the sustainable management and efficient use of natural resources.

Goal 13: Strengthen resilience and adaptive capacity to climate- related hazards and natural disasters in all countries. Integrate climate change measures into national policies, strategies and planning.

Goal 14: By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land- based activities, including marine debris and nutrient pollution.

Goal 15: Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems.

Goal 16: Strengthen relevant national institutions, including through international cooperation, for building capacity at all levels, in particular in developing countries, to prevent violence and combat terrorism and crime.

Goal 17: Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection.

As global business faces new and complex challenges and opportunities, science-based approach for the realization of the Sustainable Development Goals needs systems transformation. The main research results show that not all countries are lagging behind the average of the region Eastern Europe and Central Asia in achieving the sustainable development goals. In addition, Serbia is the only one Western Balkan country that has achieved better results than the regional average.

Albania has the best results in achieving end poverty and ensure availability and sustainable management of water and sanitation. Bosnia and Herzegovina achieves significant results in reducing inequality and combating climate change. It is characteristic for FYRepublic of Macedonia that considerable attention is paid to ensure healthy lives, promote well-being, ensure inclusive and equitable quality education, and promote lifelong learning

opportunities for all. Montenegro's priority goals are those related to end poverty, availability and sustainable management of water and sanitation, and inclusive and equitable quality education as well as promote lifelong learning opportunities for all. Serbia has the best total score among selected countries. Namely, the significant progress has been achieved in the next fields: end poverty, inclusive and equitable quality education, sustainable management of water and sanitation for all, sustainable cities and communities and combat climate change and its impacts.

In closing, it is important to state that while the sustainable development goals are well-grounded in theory, the economic reality of the Western Balkan countries shows that there is still a lot of continued effort in the long run for their achievement. Data unavailability for some of the SDGs indicators in some countries presented a limitation to the research and future efforts should focus on collecting data for the other countries in order to permit a wider application.

References

- Civil Society Reflection Group on the 2030 Agenda for Sustainable Development (2018). *Spotlight on Sustainable Development 2018, Exploring new policy pathways How to overcome obstacles and contradictions in the implementation of the 2030 Agenda Report*.
- Eurostat. (2018). *Sustainable Development in the European Union: Monitoring Report On Progress Towards the SDGs in an EU Context*. Luxemburg: Publications Office of the European Union.
- Guijarro, F., & Poyatos, J. (2018). Designing a sustainable development goal index through a goal programming model: The Case of EU-28 Countries. *Sustainability*, 10(9), 3167. DOI:10.3390/su10093167.
- Hackenesch, C., Bergmann, J., Keijzer, N. & Koch, S. (2018). EU budget reform: Opportunities and challenges for global sustainable development (Briefing Paper 4/2018). Bonn: German Development Institute / Deutsches Institut für Entwicklungspolitik (DIE). DOI: 10.23661/bp4.2018.
- Hogan, D. R., Stevens, G. A., Hosseinpoor, A. R., & Boerma, T. (2018). Monitoring universal health coverage within the Sustainable Development Goals: development and baseline data for an index of essential health services. *The Lancet Global Health*, 6(2), e152-e168. DOI: 10.1016/S2214-109X(17)30472-2
- Joint Research Centre-European Commission. (2008). *Handbook on constructing composite indicators: methodology and user guide*. OECD publishing.
- Luukkanen, J., Kaivo-oja, J., Vehmas, J., Panula-Ontto, J., & Häyhä, L. (2015). Dynamic Sustainability. Sustainability Window Analysis of Chinese Poverty-Environment Nexus Development. *Sustainability*, 7(11), 14488-14500. DOI:10.3390/su71114488.
- Nhemachena, C., Matchaya, G., Nhemachena, C., Karuaihe, S., Muchara, B., & Nhlengethwa, S. (2018). Measuring baseline agriculture-related sustainable development goals index for Southern Africa. *Sustainability*, 10(3), 849. DOI:10.3390/su10030849.

- Organisation for Economic Co-operation and Development. (2006). *Sustainable Development Studies: Good Practices in the National Sustainable Development Strategies of OECD Countries*.
- Petrović-Randelović, M., Radukić, S., & Kostić, Z. (2018). Foreign direct investment, economic sovereignty and technology transfer in the context of sustainable development. *Economics of Sustainable Development, Vol.2*. pp. 1-10.
- Sachs, J., Schmidt-Traub, G., Kroll, C., Lafortune, G., Fuller, G. (2018). *SDG Index and Dashboards Report 2018*. New York: Bertelsmann Stiftung and Sustainable Development Solutions Network (SDSN).
- Stojanović, B., & Radukić, S. (2006). EU Environmental Policy and Competitiveness. *Panoeconomicus*, 53(4), 471-485.
- Stojanović B., Radukić, S., & Kostić, Z. (2015). Level of sustainable development in the Republic of Serbia in the context of economic and environmental indicators. *Regionalni razvoj i demografski tokovi zemalja jugoistočne Evrope*, Faculty of Economics, University od Niš, pp. 51-60.
- United Nations. (2018). *The Sustainable Development Goals Report 2018*. New York.
- WBCSD. (2018) <https://www.wbcsd.org/Programs/People/Sustainable-Development-Goals/SDG-Action-Policy>.
- World Bank Group. (2018). *Atlas of Sustainable Development Goals 2018 from World Development Indicators*. Washington, DC 20433. DOI: 10.1596/978-1-4648-1250.

Nemanja Veselinović¹*University of Niš**Faculty of Economics***Martina Veselinović²***University of Belgrade**Faculty of Organizational Sciences*

P. 19-28

SCIENTIFIC REVIEW ARTICLE

Received: February, 22, 2019

Accepted: April, 15, 2019

TECHNOLOGICAL INNOVATION IN THE PETROLEUM INDUSTRY – THE CASE OF NIS J.S.C. NOVI SAD

Abstract

The petroleum companies strive to develop continuous technological innovation with the aim to gain a competitive advantage. Technological trends and their effects on the business of the company NIS j.s.c. Novi Sad will be presented in this paper. NIS j.s.c. Novi Sad stands for one of the leading vertically integrated energy companies in Southeast Europe. The subject of the paper is the observation of technological trends of the company NIS j.s.c. Novi Sad with a special view on innovation of the company NIS j.s.c. The aim of the paper is to identify characteristics, importance and reach of the designed and implemented technological innovations of the company NIS j.s.c. Novi Sad, and to propose directions which the company should take into account while making future strategic moves. The case study method will be used in this paper as research methodology.

Key words: *technological innovation, petroleum industry, competitive advantage*

JEL classification: *O32*

ТЕХНОЛОШКЕ ИНОВАЦИЈЕ У НАФТНОЈ ИНДУСТРИЈИ – СЛУЧАЈ НИС А.Д. НОВИ САД

Апстракт

Нафтне компаније настоје да развијају континуиране технолошке иновације у циљу стицања конкурентске предности. Технолошки трендови и њихови ефекти на пословање компаније НИС а.д. Нови Сад ће бити представљени у овом раду. НИС а.д. Нови Сад представља једну од водећих вертикално интегрисаних енергетских компанија у југоисточној Европи. Предмет рада је праћење технолошких трендова компаније НИС а.д. Нови Сад са посебним освртом на иновације компаније НИС а.д. Нови Сад. Циљ рада је да идентификује карактеристике, значај и досег пројектованих и имплементираних технолошких иновација компаније НИС а.д. Нови Сад, као и да предложи правце које компанија

¹ nemanjaveselinovic@gmail.com

² martinaveselinovic@gmail.com

треба да узме у обзир приликом прављења будућих стратешких потеза. Метод студија случаја ће се користити у овом раду као методологија истраживања.

Кључне речи: *технолошке иновације, нафтна индустрија, конкуритивна предност*

Introduction

The entire history of the petroleum industry could be described as very challenging, as adaptation and innovation were the main drivers of the petroleum industry development. Firstly, most of the largest private petroleum companies established a downstream business – refining oil products. Afterwards, they started steadily to get into upstream activities, such as exploration and production, with a desire to diversify their products and diminish the risk of price and supplies instability. Openness to innovation and state-of-the-art technology have always been present in the petroleum industry. Technological development has continuously been affecting all stages, from upstream to downstream activities.

Oil and gas companies are developing and implementing new technologies to boost their efficiency and competitiveness, which results in gaining higher returns. Moreover, they are investing in different products, such as renewables and hydrogen. Companies are supporting the energy shift to a greener, cleaner use of energy. The proportion of green products of oil and gas companies is still small because their commercial success is less tenable. The petroleum industry is not in the collision with neither the advent of renewables nor global emissions restraint. Also, oil and gas companies operate by the specific electrified transportation and the current pattern of energy use and demand.

The pressure for advanced technologies is continuous, and the chances for further development are enormous. On the one hand, the key industry players will adapt and survive, while, on the other hand, smaller players should use their chances on the market since there are new niches opening up. These industry players should utilize and make the most of technological innovations with the aim to become greener and more flexible. Advanced technologies are forming the industry's main activities, connecting closely not only old and new methods, but also products. Also, they allow the use of previously inaccessible resources, and their presence results in improvements in efficiency and productivity. Another positive effect is the reduced impact of operations and products on the environment.

Technological innovation and their effects on the business of the company NIS j.s.c. Novi Sad will be presented in this paper. NIS j.s.c. Novi Sad stands for one of the leading vertically integrated energy companies in Southeast Europe. The subject of the paper is the observation of technological trends of the company NIS j.s.c. Novi Sad with a special view on innovation of the company NIS j.s.c. The aim of the paper is to identify characteristics, importance and reach of the designed and implemented technological innovations of the company NIS j.s.c. Novi Sad, and to propose directions which the company should take into account while making future strategic moves. Main questions in this paper are: what is innovation, what is the typology of innovation, which technological innovations are developed in this company, which effects these technological innovations and development have on the business of the company, are technological innovations necessary to make progress in the petroleum industry. The case study method will be used in this paper as research methodology.

Theoretical background

Technological trends come from different innovations which enable higher productivity, efficiency and profit. It is necessary to conduct continuous innovations in the petroleum industry in order to be competitive in the market. So, it is imperative to start with the concept of innovation. The word innovation is originally derived from the Latin noun *innovatus* and appears for the first time in print in the fifteenth century. Innovation can be defined as new combinations of new or existing knowledge, resources, equipment, and other factors (Schumpeter, 1934). Also, Drucker (1985) describes innovation as the specific entrepreneurial instrument, which entrepreneurs exploit as an opportunity for a dissimilar business or service.

There are different typologies of innovation in the literature. Schumpeter (1934) recognized five types of innovation:

1. new products,
2. new production methods,
3. exploitation of new markets,
4. new ways to offer products and
5. new ways of business organization.

To classify innovations, certain criteria could be used, such as the nature of innovation and the type of innovation (Stošić, 2013). A vital attribute of every innovation, the degree of novelty, depends on such criteria. According to the criterion of the nature of innovation, there are two broad types of innovation: radical and incremental innovations (Stošić, 2013). Incremental innovations are small improvements, while radical innovations require new products, services, processes etc. Moreover, incremental innovations are a result of constant improvements to products and processes, while radical innovations are based on new concepts, which strive to technological revolutions and a significant economic influence.

According to the same criterion, OECD classifies following types of innovation (Stošić, 2013):

1. application of scientific breakthrough,
2. essential technical innovation,
3. technical improvement or change,
4. transfer technique to another sector,
5. adaptation of the existing product to the new market.

According to the criterion of the type of innovation, there are two types of innovation (Stošić, 2013): product/service innovation and process innovation. According to the same criterion, OECD classifies following types of innovation (sub-criteria – technical variables):

1. product innovation – use of new materials, use of new intermediates, new functional parts, new features,
2. process innovation – new production techniques, a higher degree of automation, new organization (with regard to new technologies).

According to the same criterion, OECD classifies following types of innovation (sub-criterion – the market) (Stošić, 2013):

1. novelty for the world or national economy,
2. novelty for the company.

Some types of innovation from the field of management are product innovation, process

innovation, organizational innovation, management innovation, production innovation, commercial innovation and service innovation (Trott, 2017; Stošić, 2013). Schmoookler (1966) made the difference between technological product and technological production by defining how to create, improve and produce products. Likewise, product innovation and process innovation were mentioned as types of technological innovations in the Oslo Manual (2005). Levi – Jakšić, Marinković and Obradović (2005) note that technological innovations consist of technological product innovation and technological process innovation. They also mention technological innovation in the area of information technology.

Technological innovation can be defined as conceiving and producing “a new solution to a real or perceived need (invention)”, as developing “this solution into a viable and producible entity (realization)”, as successfully introducing and supplying “this entity to the real or perceived need (implementation)” (Mentz, 1999). So, product technological innovation could be the outcome of production and commercialization of new products/services or improved products/services. Process technological innovation refers to the use or adoption of a new production process or an improved production process. It is recommended that all companies should develop both types of innovations at the same time, with the aim of increasing price and technological competitiveness. Certainly, all innovations must have a particular degree of novelty, both technological and non-technological innovations.

The essence of innovation is the necessity of linking the technical capabilities and the needs of the market (Levi – Jakšić, Marinković & Obradović, 2005). It is necessary to determine the needs of the market and the technical assets that can satisfy these needs. Since there is a strong correlation between market performance and new products, innovations contribute to the business in multiple ways: by capturing and retaining market shares, increasing profitability and sales growth and so on (Tid, Bessant & Pavitt, 1997). New products are a good indicator of a substantial capability because the environment has the feature to frequently change (Tid, Bessant & Pavitt, 1997). This could confirm that the long-term trend for continuous innovations is obligatory for all companies worldwide, which want to retain the market share and penetrate the market. Every company depends on its results, and with the help of technological innovations companies can achieve different kinds of results, such as financial, environmental, etc.

According to the Oslo Manual, firms can eco-innovate by acquiring and implementing cleaner, greener technologies. So special attention is given to innovations regarding their contribution to environmental performance. In many countries, eco-innovation is regarded as a very significant factor which helps to solve environmental problems, including climatic, energy and natural resource security issues (Diaconu, 2011). Eco-innovation can be considered as a potential source of competitive advantage for companies on the market (Diaconu, 2011). This term refers to a more favorable ecological influence of production processes or the use of goods. Other terms could also be used for eco-innovation, such as: “environmental innovation”, “innovation for sustainable development” or “sustainable innovation” (Diaconu, 2011). The concept of eco-innovation is connected with diverse concepts, such as eco-efficiency, cleaner production methods, and eco-design (Diaconu, 2011).

However, eco-innovation can be expressed as 1) the decrease of environmental risks, pollution and resource consumption; 2) goods, manufacturing processes or business models; 3) green technologies; 4) radical and systemic or incremental (Diaconu, 2011). Technological eco-innovations refer to products or processes which contribute to the betterment of

environmental conditions by incorporating technological progress. Also, they can be analyzed by using mechanisms and impacts these products and processes make. Considering mechanisms, technological eco-innovations are: 1) small and stable changes to products or processes; 2) re-designing, by making substantial changes of the existing products or processes; 3) using alternatives with the same functional characteristics, but which operate as replacements of existing products; 4) creating, designing and introducing of new products or processes (Diaconu, 2011).

Research methodology

To analyze the current technological innovations of the company NIS j.s.c. Novi Sad, online research has been conducted. All data gathered from the website of the company and annual reports will be presented through one method: case study method.

Case study method is well established in social sciences. It could provide information in the practice what has worked well, what has been attained and what have been main questions and problems. It is necessary to examine a real-life current phenomenon with this kind of research methodology. It is recommended to use several sources of evidence (Yin, 2009). Also, it is very hard to come to generalizing conclusions and has been often criticized when you use only one case study in research (Tellis, 1997). It was discussed that the relative size of the sample used does not convert a single or manifold case into a macroscopic study (Hamel et al., 1993; Yin, 2009). The single case could be regarded as satisfactory, in case of achieving established objectives for the study. Results of single case studies could not be statistically generalizable, but could be analytically generalizable (Welsh & Lyons, 2001).

Main research

As previously mentioned, the subject of the paper is the observation of technological trends of the company NIS j.s.c. Novi Sad. NIS provides the energy for making progress to the people of the Balkan region, by using responsibly natural resources and latest technology. Innovations are the basis of the business philosophy of NIS, and they are especially expressed through the application of new and clean technologies, which is in accordance with the leading position in guarding the environment. On the road of transformation from a typical oil and gas company into a comprehensive energy system, NIS has invested more than 15 million euros which make them the leader in investment and innovation in Serbia.

This research is based on information gathered on the Internet, from the company's website and annual reports. Also, the case study method was chosen as an appropriate method to present the results of the research. The petroleum industry is specific because of its vast impact on the environment, high costs of equipment, unstable prices, etc. Consequently, the idea of this research was to show which trends one big Southeastern oil and gas company follows and to propose directions which can enable oil and gas companies to be more profitable and eco-friendly.

Case study

Aware of responsibility as only Serbia's oil and gas exploiter and extractor, NIS is led by innovations in daily operations and at the same time investing in new technologies and new production capacities. To ensure company's continuous growth and better living conditions in the environment, NIS is proactive in the implementation of technologically innovative projects:

1. Bottom of the Barrel Plant;
2. Cogeneration – mini-power plants and TE-TO Pančevo;
3. Amine Plant.

1. Bottom of the Barrel Plant – The construction of a deep processing plant with delayed coking technology is a crucial project for the second phase of modernization of the Oil Refinery in Pančevo. Bottom of the Barrel Plant represents one of the prime investments in Serbia in the following period, as the total volume of investments will amount to more than 300 million euros. New plants will start operating in the third quarter of 2019 when NIS refinery will produce more high-quality fuels, as well as coke, a product that has been imported to Serbia so far.

With the realization of the project “Bottom-of-the-Barrel”, the oil refinery in Pančevo will be one of the most contemporary refineries in Eastern Europe. Also, after the construction and commissioning of new plants, optimal utilization of the refinery's capacity is expected and the efficiency of oil processing in NIS is expected to increase to 99.2% in 2019 from the currently 86%.

This means that high-sulfur oil will cease, and at the other hand, the project will enable increasing of production of high-quality gasoline, liquid petroleum gas, diesel fuel and liquid petroleum gas, thus brighter petroleum products which are more eco-friendly. The structure of production of petroleum products on the new facility is expected to be: LPG will increase for 14%, gasoline 12%, heavy diesel 26%, light diesel 27%, coke 21%. Regarding the rest of the production outcome, its average price before the project is 168 USD/t while expected average price after the project will be increased on 432 USD/t. This shows that NIS will ensure higher EBITDA than in the current period. With higher EBITDA the company is going to get more investment funds for new ecology projects.

The basis of the whole process contains two reactors, in which the rest after heating is undergoing the coking process, with additional separation of white derivatives. After the coking process, the process of hydraulic cutting, drilling and unloading of coke into the transport and loading system is carried out. Also, the project predicts the construction and installation of equipment for cutting and drilling coke, transportation lines and distinct storage systems for coke.

By modernizing its refinery in Pančevo and using modern technologies, NIS will further improve environmental protection. The rudimentary ecological aspect of this project is the fact that NIS will finish with the production of masses with a high content of sulfur, which means that in the Serbian market there will be no fuels that in combustion cause the emission of significant amounts of sulfur compounds in the atmosphere. Thanks to the “Bottom-of-the-Barrel” project, the ecological situation in the entire region will improve. As for the coke production technology itself, state-of-the-art technology solutions and technologies will be used to ensure careful treatment of the environment and the minimal use of energy resources.

The requirements of Directive 1999/32/EC on the reduction of sulfur content in certain

liquid fuels will be met in that case also. It became the first energy plant in Serbia with the IPPC (International Plant Protection Convention) integrated permit, which confirms that the production process in the Refinery is fully aligned with European standards in the field of environmental protection. With the constant modernization of the Oil Refinery in Pančevo, NIS has enabled the production of European-quality fuel in Serbia, which contributes to the energy stability of the country. The implementation of the "Bottom-of-the-Barrel" project enables to NIS retaining the position of a regional leader in the petroleum product market and offering its customers more high-quality fuel.

The similar facilities in surroundings exist in Refinery Rijeka in Croatia where starting activities of production are planned for 2022. From the fact that NIS's starting date of production is scheduled for 2019, we can conclude that NIS can gain a competitive advantage.

2. Cogeneration – Cogeneration represents mini-power plants which boost the company's efficiency. NIS demonstrates its ecological responsibility, but also the increase in efficiency at work, by launching mini-power plants on petroleum fields in Serbia, which produce electricity that is sold on the Serbian and regional markets through low-quality gas. So far, NIS has built 14 mini power plants in oil fields in Serbia, with a total capacity of 14 MW, which is, for example, sufficient to supply 20,000 average households.

Cogeneration is based on the production of electricity and thermal energy from gas that was not previously used because it contains a high degree of carbon dioxide and nitrogen. The process of converting this gas into electricity has a particularly ecological dimension, as this reduces the emissions of harmful gases into the atmosphere since this gas was previously burnt on the flare. It is in line with the energy and contemporary environmental trends, regarding rationalizing energy consumption and reducing pollution. As NIS is, together with the Electric Power Industry of Serbia, the only producer of electricity in the free market in our country, increasing capacity in electricity production is a big step for all consumers in Serbia.

Also, NIS is constructing Power and Heating Plant (TE-TO) Pančevo. In the second quarter of 2018, the construction of a thermal power plant in Pančevo began, with a total power of 1400 GWh, which is sufficient for the annual supply of 230,000 households. The plant will function by using the gas-steam cycle, therefore also on the principle of cogeneration, which is the energy and ecologically best solution in the production of electricity from natural gas. TE-TO Pančevo will primarily produce electricity to meet the needs of the Pančevo Oil Refinery for technological steam and electricity, while a significant surplus of electricity will be distributed to the Serbian electric power system. TE-TO Pančevo represents combined gas-fired power plant with a combined production of electric and thermal energy. With the realization of the project TE-TO Pančevo, Serbia gets another guarantor of energy stability and security in the supply of electricity.

In October 2017, a contract was signed on the construction of a power plant with the Chinese company "Shanghai Electric Group". TE-TO Pančevo will start operating in the fourth quarter of 2019, and the investment in this facility will amount to more than 195 million dollars. The construction of the TE-TO Pančevo jointly is realized by the companies "Gazprom Energoholding", a specialized company (100% daughter company of PJS Gazprom) for the management of Gazprom Group companies in the electricity and NIS. Also, NIS is planning the project named "Windpark" in municipality Plandište, which should be finished until April 2020. "Windpark" contains usage of wind energy to produce electricity. In this way, NIS shows usage of green technology.

3. Amine Plant – As a company that follows the latest trends in the field of green energy and the use of renewable energy sources, in 2016, NIS launched the Amino Natural Gas Purification Plant, which uses less favorable gas for the production of high-quality energy for industrial and household use. The ecological significance of the Amine Plant is to prevent the release of carbon dioxide from natural gas into the atmosphere. The Amine Plant is intended to increase the quality of domestic natural gas, which is achieved by removing carbon dioxide and other gaseous substances, but at the same time, it affects the increase in production volume. The investment in the construction of this modern plant amounts to more than 30 million euros.

HiPACT (High-Pressure Acidgas Capture Technology) is the technology used in the Amine Plant. It is one of the most effective methods among the existing methods in the process of gas processing. The use of this technology enables the savings of heat and electricity, as well as consumables up to 25% compared to the technologies that were used earlier, which additionally increased the efficiency of the business. The plant works on the principle of treating natural gas with the amine, a chemical compound that effectively binds and removes impurities, such as carbon dioxide and hydrogen sulfide from natural gas. This means that carbon dioxide and other gas substances are extracted from domestic natural gas. The process of carbon dioxide separation is carried out in two phases: through amine washing, which involves the removal of acid gas, and drying during which the water is removed from natural gas.

In addition to increasing the quality and volume of natural gas production, the Amine Plant has a distinctive ecological significance. The process of processing in this plant is such that it completely prevents the carbon dioxide from reaching the atmosphere. This is achieved by not extracting carbon dioxide from the purified gas in the atmosphere, but dried carbon dioxide is imprinted in pre-prepared wells belonging to the company. This also contributes to the reduction of the greenhouse effect, which is a common phenomenon in gas processing processes. The Elemir plant is the first and only HiPACT plant in Europe, while in the world this technology is still only applied in Japan, and NIS has thus confirmed itself as a pioneer in the application of state-of-the-art technologies both in Serbia and in Europe. The implementation of this project allows NIS to attain a twofold result. On the one side, a substantial enhancement in the quality of domestic natural gas and in the production volume can be achieved, while the environmentally friendly production points to NIS as to a socially responsible company which takes care of its environment, on the other hand.

Conclusion

Being a leader in business means being a leader in innovation, investment and care for people and the environment. There are different types of innovations in the literature which could be recognized in the business and technological development of NIS. Product technological innovation represents an outcome of production and commercialization of either new products/services or improved products/services, while process technological innovation corresponds to the use or adoption of a new production process or an improved production process. Considering the NIS company, there is not only a visible trend of improving already existing products and processes, but also a trend of introducing brand new product and process technologies.

In the case study analysis there are three main innovations of NIS: Bottom of the Barrel Plant, cogeneration (mini-power plants and TE-TO Pančevo) and Amine Plant. Owing to these technological innovations, NIS has become one of the largest and the most successful companies in this region and can be the role model for other oil and gas companies. As the only company in Serbia engaged in the exploration and production of oil and gas in Serbia, NIS is persistently investing in new technologies and new production capacities, which enable the growth of the company, and better quality of the environment and people. Generally, it is desirable to introduce innovations which can contribute to higher profitability and technological competitiveness.

The petroleum industry is specific for many reasons, such as high costs of equipment, fierce competition on the market, unstable prices, regulations etc. Companies should pay attention to important facts during the decision-making process, because wrong decisions can be too costly, especially for smaller companies. It is risky, but still necessary for all the companies in this industry if they want to retain their share of the market and stay profitable. Only by following contemporary technological trends in this industry, a company can make progress and penetrate the market.

Technical capabilities and the needs of the market should be taken into account while deciding on introducing new or improved technologies in the company. As there is a strong correlation between market performance and new products (Tid, Bessant & Pavitt, 1997), these technological innovations contribute not only to NIS, but also to the government, the environment and people. So, technological development can lead to higher satisfaction of numerous stakeholders. There are different benefits in the form of improved financial and environmental performance and effects. The business of oil and gas companies is thought to be in the collision with the environment, global emission restraint and so on, but this case shows the opposite. The main limitation of the research is that the case study is based only on one company, so results cannot be generalized. In future research, more companies should be included to get an overall picture of the petroleum system and applied innovations.

Technological trends currently present in NIS lead to better financial performance and additional opportunities for gaining a superior competitive advantage. Also, technological innovations enhanced the company's efficiency, reduced the costs of production, improved already existing products and processes, and many other effects are expected to be realized. NIS provides oil, gas and energy stability in the region with the help of the latest technological innovations. Furthermore, these technological innovations are aligned with the contemporary world trends, and they represent eco-innovations which reduce the negative impact on the environment and people. To increase the efficiency of the business, it would be desirable if NIS could continue with the diversification of its business portfolio. It would ensure more benefits for all stakeholders, such as society, global political organizations, shareholders etc. Oil and gas companies should strive to develop alternative sources of energy.

References

- Diaconu, M. (2011). Technological innovation: Concept, process, typology and implication in the economy. *Theoretical and Applied Economics*, 18(10), 127-144.

- Drucker, P. F. (1985). *Innovation and entrepreneurship: Practice and principles*. New York: Harper & Row.
- Hamel, J., Dufour, S., & Fortin, D. (1993). *Case study methods*. Newbury Park: Sage Publications.
- Levi-Jakšić, M., Marinković, S., & Obradović, J. (2005). *Menadžment inovacija i tehnološkog razvoja*. Belgrade: Faculty of Organizational Sciences.
- Mentz, J.C. (1999). *Developing a competence audit for technological innovation*. Unpublished master's thesis, University of Pretoria, Pretoria, South Africa.
- OECD Eurostat (2005). *Oslo Manual: Guidelines for collecting and interpreting innovation data*. 3rd ed., Paris: Organization for economic co-operation and development publishing.
- Pennings, P., Keman, H., & Kleinnijenhuis, J. (2006). *Doing research in political science*. 2nd ed. London: SAGE Publishing.
- Schumpeter, J.A. (1934). *The theory of economic development: An inquiry into profits, capital, credits, interest, and the business cycle*. Piscataway: Transaction Publishers.
- Stošić, B. (2013). *Menadžment inovacija – Inovacioni projekti, modeli i metodi*. Belgrade: Faculty of Organizational Sciences.
- Tellis, W. (1997). Introduction to case study. *The Qualitative Report*, 3(2), 1-14.
- Tidd, J., Bessant, J., & Pavitt, K. (1997). *Managing innovation: integrating technological, market and organizational change*. Trowbridge, Wiltshire: Redwood Books.
- Trott, P. (2017). *Innovation management and new product development*. 6th ed. London: Pearson Education.
- Welsh, I., Lyons, C.M. (2001). Evidence-based care and the case for intuition and tacit knowledge in clinical assessment and decision making in mental health nursing practice: an empirical contribution to the debate. *Journal of Psychiatric & Mental Health Nursing*, 8(4), 299-305.
- Yin, R.K. (2009). *Case study research: design and methods*. 4th ed. London: SAGE Publishing.
- <https://www.nis.eu>

Milica Đokić¹
 University of Nis
 Innovation center

P. 29-43
 SCIENTIFIC REVIEW ARTICLE
 Received: February, 12, 2019
 Accepted: May, 15, 2019

SUSTAINABLE AGRICULTURAL AND RURAL DEVELOPMENT IN THE EUROPEAN UNION

Abstract

The agricultural and rural development are issues of great significance in the European Union, which is not surprising considering the fact that around 90% of the EU territory are intermediate and predominantly rural regions. Therefore, the sustainable agriculture and development of these areas are the main priorities of the member states' Common Agricultural Policy. Adopting measures and practices that will contribute to the productivity growth, while meeting the needs of society and preserving the environment, is an imperative. In order to monitor the effects of implemented measures and to respond properly to the changes, a comprehensive set of indicators has been developed, covering all three dimensions of sustainable agricultural and rural development: economic, social and environmental. They provide a solid information base for defining policies and appropriate strategies, adapted to the characteristics and requirements of a particular area.

Key words: sustainability, The EU Common Agricultural Policy, rural development, sustainability indicators

JEL classification: O13, O44, Q56, R11

ОДРЖИВИ АГРАРНИ И РУРАЛНИ РАЗВОЈ У ЕВРОПСКОЈ УНИЈИ

Апстракт

У Европској Унији питања аграрног и руралног развоја су од велике важности, што и не чуди ако се узме у обзир чињеница да око 90% територије ЕУ чине рурална и средње рурална подручја. Стога, одржива пољопривреда и развој ових подручја су главни приоритети Заједничке аграрне политике њених чланица. Усвајање мера и пракси које ће допринети расту продуктивности, али уз истовремено задовољавање потреба друштва и очување животне средине је императив. Како би се пратили ефекти примењених мера и адекватно одговорило на промене, развијен је обиман сет показатеља којима су обихваћене све три димензије одрживог аграрног и руралног развоја: економска, социјална и еколошка. Уз помоћ њих добија се добра информациона основа за дефинисање политика и одговарајућих стратегија, прилагођених карактеристикама и захтевима појединих подручја.

Кључне речи: одрживост, Заједничка аграрна политика ЕУ, рурални развој, индикатори одрживости

¹ milica91nis@hotmail.com

Introduction

Given the large share of rural areas in Europe and huge number of people involved in this sector, rural development is an important segment of the European Union (EU) policy. Predominantly rural regions occupy more than half of the EU territory (52%), include 23% of the EU population and account for 21% of the employment (EC: Directorate - General for Agriculture and Rural Development, 2013). Those figures are even more significant when regions classified as intermediate are taken into account as well.² Thus, even 90% of the EU territory is covered by predominantly rural and intermediate regions, which encompass slightly more than half of the population and provide more than 50% of the employment. However, these numbers vary considerably from country to country. While in some member states more than 80% of the area is predominantly rural, others do not have these types of region on their territory at all.

Ever since the establishment of the European Economic Community in 1957, the forerunner of today's European Union, agricultural development has been one of the most important issues in the integration. For this reason, from the very beginning, the Common Agricultural Policy (CAP) has been created as a comprehensive policy on agricultural management, agricultural product market and rural development. As circumstances have changed over time, goals and measures of the CAP have been adjusted to emerging needs, so the CAP has undergone some significant reforms. It has always tended to address the current problems – whether if it is market protection and increasing agricultural production, direct payments and measures aimed at improving conditions in rural areas, or promoting sustainable development.

Through the years, it has become clear that economic progress should be achieved with responsible behavior towards the environment, adequate use of natural resources and preservation of the ecosystem. Accordingly, the main CAP objectives have been directed towards the protection of the environment, food safety, preservation of natural resources and sustainable rural development. Particular emphasis is being placed on the production of healthy, high-quality agricultural goods, organic production methods and the use of renewable resources, while preserving biodiversity, reducing environmental pressure and implementing innovations.

The need for measuring sustainable agricultural and rural development has emerged as the subject of sustainable development has become more important and widespread in scientific studies, as well as in the policies of governments and international integrations. Many authors and institutions have tried to give their own perception about the problem and therefore defined various indicators of sustainable agricultural and rural development. Although not significant, there are some differences among them. In order to overcome difficulties due to diversity and large number of indicators, to enable comparison between different countries and regions and to monitor results at the international level, the EU authorities have developed a set of uniform indicators. They provide necessary information pointing out the key areas which need improvement, while helping policy-makers in the decision-making process and monitoring the results of the actions taken.

² In 2010 the European Commission agreed on a new typology of predominantly rural, intermediate and predominantly urban regions

The Common Agricultural Policy reform – from traditional agriculture towards sustainable rural development

Agriculture and development of rural areas have been the subjects of interest among all member states since the foundation of the Union, covered by the CAP. During all these years, the CAP has undergone numerous changes, some of which have radically affected the direction of further actions and the EU budget. In the middle of the last century, the agricultural sector in Europe was undeveloped, and while revenues in other sectors grew, in agriculture they stagnated. One of the main concerns of the Community was to provide enough food, so subsidies to farmers were given in the form of high support prices, along with strong market protection. However, such measures led to overproduction, and resulted in large surpluses of agricultural goods, some of which were subsidized for export, while the rest had to be stored within the Community, causing high costs. Over the time, number of member states had increased, the EU territory became more diversified and rural areas development began to depend more on other sectors, not just agriculture.

Under the pressure of international organizations, reduction of the price support and liberalization of the agricultural market were inevitable. At the same time, food safety and environmental protection issues became the center of attention. Numerous attempts to change existing goals and measures and introduce new ones had not given desired results until 1992 and the first radical reform of the CAP - McSharry reform - which set the basis for strong rural development policy and determined the further direction of agricultural development. The introduction of direct payments to farmers, instead of the earlier price support, was a major change. It was followed by a rural development plan which involved farms restructuring and agro-environmental protection. In order to adjust the CAP to the EU enlargement, but also to encourage member states to promote growth, new reform - Agenda 2000 - was carried out in 1999. It was primarily focused on increasing the competitiveness of the agricultural sector and improving rural areas. The agricultural sector continued to receive support through direct payments, but these were conditioned by fulfillment of certain environmental requirements. This reform introduced ecological principles to agriculture, which represented a significant step towards sustainable development. Agenda 2000 was focused on the development of multifunctional, sustainable agriculture and rural areas (Božić, Bogdanov, Ševarlić, 2011). Rural development policy was established as the second pillar of the CAP, complementing direct payments and market measures, in the first pillar. The CAP reforms that followed focused on improving competitiveness of the agricultural sector and rural development, and on the measures which promoted food safety, animal protection and conservation of the environment.

The current CAP continues in the same direction. In order to respond to the biggest economic, environmental and territorial challenges, three main long-term objectives have been defined in the CAP 2014-2020 (EC, 2013):

1. Viable food production,
2. Sustainable management of natural resources and climate action and
3. Balanced territorial development.

Promoting sustainable agriculture and adopting environmentally friendly practices is crucial, especially because agricultural production exerts a huge pressure

on the environment, having a negative impact on human health, animals and plants, endangering their survival. Therefore, the EU agricultural sector is expected to attain a high level of safe and quality food production, while preserving natural resources. Accordingly, the current CAP implies that a large part of the funds intended for farmers is allocated only if they implement appropriate agricultural practices, that are not harmful to the environment.

The CAP also provides a framework for rural development with six common priorities that member states should include into their national programs, based on the need of their territories (EC, 2013):

1. Fostering knowledge transfer and innovation in agriculture, forestry and rural areas,
2. Enhancing farm viability and competitiveness of agriculture in all regions, and promoting innovative farm technologies and sustainable management of forests,
3. Promoting food chain organization, including processing and marketing of agricultural products, animal welfare and risk management in agriculture,
4. Restoring, preserving and enhancing ecosystems related to agriculture and forestry,
5. Promoting resource efficiency and supporting the shift towards a low carbon and climate resilient economy in agriculture, food and forestry sectors,
6. Promoting social inclusion, poverty reduction and economic development in rural areas.

Although the common goals are set, it is not possible to define one single approach that would guarantee a success in achieving sustainability in each country. The heterogeneity of the EU territory has to be taken into account. Therefore, member states are expected to define their own development programs following the given framework, while choosing the measures and strategies for their implementation. This way, each member will be able to put together a set of measures which will respond to the demands and the specifics of the agriculture and rural areas within national borders.

The concept of sustainable agriculture and rural development

In general, sustainable development is defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987). It involves three dimensions: environmental, economic and social. Within agricultural and rural development, these three segments can be described as follows. The environmental dimension refers to the use of natural resources in a way that will not reduce their availability and quality in the future. It also includes protection of rural areas, conservation of biodiversity and the environment, while preventing the use of chemicals and substances harmful to the environment. The economic dimension is related to the efficient use of resources, improvement of the production of raw materials and final agricultural products and the competitiveness of rural areas. Good farming structures, modern technology implementation and rural population employment are some of the important segments in this sphere. The social dimension implies taking care

of the rural population. It emphasizes the need of maintaining an appropriate working and living conditions and engaging the entire communities in the development, in order to improve quality of life and prevent depopulation of rural regions.

Given that the concept of sustainable agriculture has become widely accepted several decades ago, there are a number of definitions, among which exist minor differences, due to the focusing on different values, priorities and objectives, usually depending on the spatial context. Some authors see sustainable agriculture as "the result of a management strategy which helps the producers to choose hybrids and varieties, a soil fertility packages, a pest management approach, a tillage system, and crop rotation to reduce costs of purchased inputs, minimize the impact of the system on the immediate and the off-farm environment, and provide a sustained level of production and profit from farming" (Francis, Sander, Martin, 1987). Edwards (1987) gave a definition of lower input/sustainable agriculture as "integrated systems of agricultural production that are less dependent on high inputs of energy and synthetic chemicals, and more dependent on intensive management than conventional monocultural systems. These lower-input sustainable systems maintain or only slightly decrease productivity, maintain or increase net income for the farmer, and are ecologically desirable and protective of the environment." Others, discussing sustainable agriculture, focus on the ability of agricultural systems to maintain productivity of crops over the longer period of time (Ikerd, 1993). Some emphasize the factors of sustainability, such as flexibility, which is the ability of agriculture to adapt to future changes (Gafsi, Legagneux, Nguyen, Robin, 2006). Despite the diversity in conceptualization of sustainable agriculture, consensus has been reached on its three basic characteristics: maintenance of environmental quality, stable plant and animal productivity and social acceptability (Rasul, Thapa, 2004).

The complexity of the agricultural and rural sustainability is significant because of the mentioned dimensions and different levels it can be monitored at, from the individual field to the global extent. Particular soil treatments, crop rotation, grazing and cropping practices, pest management and variety of cultivated crops would be the main factors of sustainability at the field level. Appropriate use of resources, living and working conditions may be the key determinants of sustainable rural households and farm business. At the national level, the sustainability might be affected by pressures on the use of agricultural land from non-farming sectors, while at the global level, climate conditions and changes, international terms of trade and distribution of resources also become important determinants (Hayati, Ranjbar, Karami, 2010). National policies and proposed measures significantly influence behavior at the farm level, as well living conditions in rural areas. World market trends and international interventions can also have a huge impact on the lower levels, particularly in the case of undeveloped countries and those where agricultural production is largely dependent on exports. Furthermore, economic, social and environmental goals are often not interrelated, and desired results in one segment are many times attained at the expense of another. Practices that help achieve sustainability in one dimension are not compatible with the sustainability in others. Many farmers, for example, in order to get higher yields, choose aggressive soil treatments and methods which not only degrade the soil and pollute the air, but also disrupt the balance of the ecosystem and threaten the survival of entire species. Focusing primarily on the economic results is usually followed with very hard work and long working hours, so the quality of life is being a matter of concern too. In many low income countries, especially

overpopulated, where the population pressure is huge, farmers attempt to cultivate land that is not suitable for agriculture. In these cases, achieving short-term economic goals is done at the expense of the environment and long-term ecosystem sustainability. Therefore, agricultural and rural sustainability is largely dependent on what happens at higher levels and on interactions between three components (Norman et al., 1997). The concept of sustainability emphasizes the need to find a proper balance between the three dimensions so further progress towards sustainable agriculture and rural development requires taking into consideration all three spheres, their interrelation and mutual impact when making and implementing policies.

Creating the concept of integrated rural development has made a stronger connection between agriculture and other sectors of the EU economy, as well as society in general, while the concept of sustainability has provided an even better basis for a holistic approach to the problem. The EU rural development policy provides support to the rural areas to deal with current economic, environmental and social challenges. In order to preserve Europe's rural heritage and improve conditions in these regions, a huge attention is dedicated to the protection of biodiversity, preservation of natural landscapes, rational use and management of natural resources, mitigation of climate changes and consequences. Adopted CAP measures promote development of agricultural practices that do not damage the environment and help save rural landscapes. This is achieved by directing the funds to the rural policy procedures that encourage sustainable agricultural practices and by applying sanctions on individuals or households that do not obey the environment protection regulations. The functionality of the EU agriculture and the future sustainability of rural areas include a complex and multidimensional set of interactions between food production and processing, land use and rural economy, environmental management and human health, with which a wide range of scientific, economic, social and educational policies are strongly connected (Tilman, Cassman, Matson, Naylor, Polasky, 2002).

The concept of agricultural multifunctionality

When it comes to sustainable agriculture and rural development, the multifunctionality of agriculture is often regarded as an important segment, particularly within the EU. The term is not precisely defined, and its interpretation can vary depending on the territory and the context, but it is generally based on the idea that the role of agriculture cannot be limited only to the production of food. In addition, agricultural activity can also shape the landscape, provide environmental benefits, sustainable usage of natural resources, preservation of biodiversity and contribute to the socioeconomic viability of rural areas (OECD, 1998).

The concept of multifunctionality implies that the agricultural sector, besides its primary role of producing food, has other functions that cannot be ignored. Definition of multifunctionality used by the OECD associates multifunctionality with particular characteristics of the agricultural production process and its outputs: i) the existence of multiple commodity and non-commodity outputs that are jointly produced by agriculture and ii) some of the non-commodity outputs may exhibit the characteristics of externalities or public goods, such that the markets for these goods function poorly or

are non-existent (OECD, 2000). Those non-commodity outputs can be divided into three major groups (Majkovič, Borec, Rozman, Turk, Pažek, 2005). The first one is a group of "new" activities that are more or less related to agriculture, such as: agro-tourism, social services, care activities, etc. Besides them, agricultural production and other associated functions can result in externalities, both positive and negative. Maintaining the cultural heritage, preserving the landscape and providing job opportunities are some examples of the positive effects of agricultural activities, while water and air pollution, soil erosion and destruction of biodiversity appear as negative ones.

Multifunctionality and sustainability of agriculture are interconnected and partly overlap. Both concepts indicate multiple roles of agriculture, including its market and non-market outputs, as well as social and environmental functions. The concept of sustainability emphasizes the importance of maintaining a certain level of resources and welfare over time, extending the perspective to future generations, and therefore is resource-oriented approach. On the other hand, the concept of multifunctionality is considered as an activity-oriented. It looks at the production process of agricultural goods and its contribution to the achievement of societal goals (EC, 2001). The significance of agricultural multifunctionality is recognized by the policymakers in the EU long time ago, as written in the Agenda 2000: "The fundamental difference between the European model and that of our main competitors lies in the multifunctional nature of agriculture in Europe and in the role it plays in the economy and environment, in society, and in the conservation of the countryside; hence the need for maintaining agriculture all over Europe and protecting farmers' income" (EC, 1997).

Indicators of sustainable agricultural and rural development in the European Union

One of the most important issues related to sustainable agriculture and rural development is how it can be measured. Since it is a comprehensive, multi-dimensional concept, it is difficult to give one single indicator or determine precisely how much some practices are sustainable. Over the past decades, as concerns for the environment were rising and the concept of sustainability became widespread, a number of environmental indicators and methods for assessing the sustainability of the agricultural and rural sector has increased. Precise measurement of agricultural sustainability is not possible, but when specific parameters or criteria are selected, it is possible to determine whether certain trends are stable, moving up or down (Pretty, 1995).

Although many authors have proposed definitions and classifications of the indicators, in order to be standardized and suitable for wider use, they had to be formulated at the institutional level. Therefore, certain organizations and integrations, such as the United Nations (UN) and the Organization for Economic Cooperation and Development (OECD) defined their lists of sustainability measures for agriculture and rural sector. Such indicators, globally or regionally accepted, have enabled a comparison between different countries, provided the basis for further international initiatives and have become a policy instrument which puts pressure among countries to achieve better results (Hayati, Ranjbar, Karami, 2010). Development of indicators requires a "systems approach" that would cover

more than one environmental sphere or theme, and which would try to integrate the full range of interactions between agriculture, environment and social-economic conditions (Piorr, 2003). They are usually grouped within three mentioned segments - the environment, economy and society. The greatest attention is dedicated to the environmental dimension, which is expected considering the enormous impact of the agriculture on the environment. Thus, the largest number of parameters is defined within this sphere.

Sustainable agriculture is time and space-specific concept (Zhen, Routray, 2003). For this reason, the indicators of sustainable agriculture and rural development must be suitable for a particular area. In order to facilitate the monitoring of agriculture and rural development sustainability within the EU and comparing results between member states, the EU authorities have defined a specific set of indicators. They had to meet certain criteria (EC, 2001):

- Policy-relevance,
- Conceptual soundness,
- Definition at an appropriate level of aggregation,
- Effectiveness,
- Statistical validity,
- Analytical soundness,
- Technical feasibility and
- Cost-efficiency.

The environmental protection and rural development issues had to be included into the CAP in an appropriate way, so that set goals could be achieved. To give desired results, adopted measures had to be directed at specific problems, supported by reliable data and their effects regularly evaluated. At the beginning of 2000, the European Commission published the communication "Indicators for the Integration of Environmental Concerns into the Common Agricultural Policy" in which it emphasized the connection and influence of the agricultural sector on the environment and defined goals for monitoring the integration of environmental concerns into the CAP. The Commission relied on indicators and the framework defined by the OECD, adapting it to the agricultural system of the Union. A set of 35 indicators was proposed. Two years later, the IRENA operation (Indicator Reporting on the Integration of Environmental Concerns into Agriculture Policy) was launched by joint efforts of DG Agriculture and Rural Development, DG Environment, Eurostat and DG Joint Research Centre, and the European Environment Agency (EEA) to further develop agri-environmental indicators. The goal was to adapt the proposed list of indicators to different geographical levels and available data and to respond to the individual needs of member states.

Indicators were based on the DPSIR model (Driving force - Pressure - State - Impact - Response). DPSIR concept is a framework developed by the EEA to describe and understand relationships between the origins and consequences of environmental problems (EEA, 1999). This model is based on the previous frameworks presented by OECD - the first Pressure-State-Response (PSR) model and later Driving Force-State-Response (DSR) model (OECD, 1999). In the agriculture, DPSIR model was used to indicate the key issues in the relationship between the agricultural sector and the environment, and to point out major causes and consequences of these relations. The linkage was observed within main agri-environmental segments - water, land use and soil, climate change and air quality, and biodiversity and landscape. At the center of the DPSIR model is the *state* of the agricultural environment - the current state and how it has changed over time. State indicators point out all undesirable changes that need to be prevented,

as well as desirable conditions that should be maintained. Then, it is necessary to identify *pressures* that have led to those undesirable changes in the state or environmental benefits, resulting from agricultural activities. Therefore, the *impact* on the environment can be negative or positive. The third step is to connect those pressures and processes with the *driving forces* in the economy, which are directly influenced by agricultural policy. In the end, it is necessary to monitor how society *responds* to these problems and to check if the agri-environmental measures are helpful and give desirable results. Further work on overcoming problems and constraints in the development indicators resulted in a set of 28 indicators for monitoring the integration of environmental concerns into the CAP.

Table 1. Agri-environmental indicators suggested by the European Commission

Domain	Sub-domain	No.	Title
Responses	Public policy	1	Agri-environmental commitments
		2	Agricultural areas under Natura 2000
	Technology and skills	3	Farmers' training level and use of environmental farm advisory services
	Market signals and attitudes	4	Area under organic farming
Driving forces	Input use	5	Mineral fertilizer consumption
		6	Consumption of pesticides
		7	Irrigation
		8	Energy use
	Land use	9	Land use change
		10.1	Cropping patterns
		10.2	Livestock patterns
	Farm management	11.1	Soil cover
		11.2	Tillage practices
		11.3	Manure storage
	Trends	12	Intensification / extensification
		13	Specialization
		14	Risk of land abandonment
	Pressures and Risks	Pollution	15
16			Risk of pollution by phosphorus
17			Pesticides risks
18			Ammonia emissions
19			Greenhouse gas emissions
Resource depletion		20	Water abstraction
		21	Soil erosion
		22	Genetic diversity
Benefits		23	High Nature Value farmland
		24	Renewable energy production
State / Impact	Biodiversity and habitats	25	Population trends of farmland birds
	Natural resources	26	Soil quality
		27.1	Water quality – Nitrate pollution
		27.2	Water quality – Pesticide pollution
	Landscape	28	Landscape - state and diversity

Source: European Commission (2006) Communication from the Commission to the Council and the European Parliament - Development of agri-environmental indicators for monitoring the integration of environmental concerns into the common agricultural policy {SEC(2006) 1136}, COM/2006/0508 final/

Agri-environmental indicators have to assess positive and negative effects of agriculture and should be sufficiently differentiated to be able to capture regional differences in environmental conditions (COM, 2000). Further, they should provide information: on the state of the environment in agriculture; on the wider context, particularly concerning the diversity of the EU's agri-ecosystems; for understanding and monitoring the linkages between agricultural practices and their effects on the environment; to support the global assessment process of agricultural sustainability; to assess the extent to which agricultural and rural development policies promote environmental friendly farming activities and sustainable agriculture (EC, 2006). Agri-environmental indicators are particularly significant for the formulation of policies and appropriate strategies. They contribute to this process in several ways (Piorr, 2003). Firstly, they give relevant information about the current conditions and trends in the environment to decision-makers and the general public, that are important for agricultural and rural development. Then, they provide a better understanding of the environmental consequences of policy measures and farmers' activities and guidelines for further initiatives, and the formulation of national and global development strategies. In addition, indicators enable monitoring and evaluation of the adopted measures' effectiveness and progress in achieving the set goals.

Although the environmental dimension often gets the most attention, the remaining two should not be neglected. For sustainable development of agriculture and entire rural areas, balance and coherence of all segments - economic, social and environmental - is necessary. According to the EU institutions, the core issues of the concept of sustainability are: maintenance (protection, renewal) of a combination of various forms of capital stocks, with a view to sustaining well-being, efficiency of the transformation process (avoiding inefficiency, promoting efficiency) and intra- and intergenerational equity (EC, 2001). Therefore, sustainable agriculture and rural development should respond to these requirements at the sectoral (agriculture) and territorial (rural areas) level.

The basis of the EU sustainable agricultural and rural development policy is the preservation of sufficient stocks of natural, human and financial capital. Thus, parameters that indicate the state of various types of capital and variations in capital stocks are at the beginning of the sustainability indicators list. These indicators are especially important since resources must be reasonably used, considering the uncertainty of substitution between different types of capital, of future demand and possibilities to increase efficiency of the transformation process. In the economic and social dimension they refer to human and man made capital. The number and age of people employed in agriculture, and education and training level of household owners, show quantitative and qualitative aspects of available human capital. Farmers' fixed assets and stocks in agriculture and farmers' fixed assets outside their core activity indicate the state of man made capital. Flow indicators complement the state indicators, pointing out the changes in stocks of different forms of capital. With regard to human resources, those parameters show the evolution of the number of people employed in agriculture and their agricultural education and skills. In relation to the man made capital, they describe the change in fixed assets and stocks in agriculture, the change in farmers' fixed assets outside their agricultural core activity and identify the rate of renewal of farm capital.

Table 2. Economic and social indicators of sustainable agricultural and rural development in the European Union

Sustainable agricultural and rural development		Economic dimension	Social dimension
	Stocks	State and flow indicators on stocks (quantity and quality)	
Efficiency	<ul style="list-style-type: none"> • Output indicators (quantity and quality) • Competitiveness and viability indicators 	<ul style="list-style-type: none"> • Indicators on employment • Indicators on institutional efficiency 	
Equity	<p>Over space:</p> <ul style="list-style-type: none"> • Indicators on the viability of rural communities and the maintenance of a balanced pattern of development including the agricultural sector's contribution 	<p>Over space/sectors:</p> <ul style="list-style-type: none"> • Indicators on access to resources / services and opportunities <p>Social groups:</p> <ul style="list-style-type: none"> • Indicators on equal opportunities <p>Ethics:</p> <ul style="list-style-type: none"> • Labor conditions • Animal welfare indicators 	

Source: EC: Directorate-General for Agriculture (2001) A Framework for Indicators for the Economic and Social Dimensions of Sustainable Agriculture and Rural Development

Different forms of capital are used to provide various market and non-market outputs. In order to evaluate the efficiency of that transformation process, a group of efficiency indicators is created. Efficiency indicators in the economic sphere reveal the quality and quantity of the output, as well as sector competitiveness and production viability. Output indicators refer to the quantity of food and non-food outputs, the share of organic production and products carrying registered name, infringements on residues/contaminants legislation, food demand and productivity of different factors of production (capital, labor, land), as well as energy efficiency. Since agricultural production can be long-term sustainable only with renewable resources and a certain level of competitiveness, viability and competitiveness indicators are equally important. They show added value, composition of farm household income, farms' own resources, public stocks and farmers' terms of trade, for purchasing raw materials and selling agricultural goods. The viability of the current structure of the agricultural sector is specified by indicators of change in own resources of farms and financial stress. Social group indicators are focused on institutional efficiency, which refers to the regulatory framework, informal relationships and steering mechanisms, and providing employment opportunities.

Equity indicators are related to different issues and can be territorial, demonstrating whether economic and social development between rural and other areas is balanced or not, and sectoral, which show if development between sectors is balanced. Economic indicators are numerous. One group of these refers to population and indicates the total number, gender and age structure, evolution and skills of people in rural areas. Economic

indicators of production show GDP, the share of agriculture and food industry in GDP, while in the field of employment, they illustrate the size and structure of the working population, agriculture and food industry employment in total (rural) employment, labor pressure and unemployment in these regions. A particular segment of economic parameters is the one with infrastructure indicators which reveal the number and the size of towns in rural areas, distance to urban centers and circumstances in transport, health and telecommunications sector services. The social dimension involves parameters of equity over sectors and space. They indicate a living standard in agricultural and rural communities, such as distribution of income, poverty rate and jobless households, along with education level and working hours of social groups. Finally, the last group of social indicators refers to the ethical concerns of society and demonstrates labor conditions and animal welfare.

The study of sustainability level of rural development in the EU countries for 2000-2012 period, conducted by Siudek, Czarnecki and Vashchyk (2016), showed that there are large disparities between member states by all the three dimensions. In terms of economic development, according to the synthetic index, Central and Eastern European countries (Lithuania, Romania, Slovakia, Poland and the Czech Republic) had the lowest results, while the Western and Southern Europe (Luxembourg, the Netherlands, France, Malta and Slovenia) were the most successful. Surprisingly, ecological conditions were the worst in the United Kingdom, Spain and France, as well as in Malta and Poland. On the other hand, the highest progress within the environmental dimension was achieved in the Scandinavian region (Finland and Sweden) and Latvia. Regarding social development, the research pointed out that countries which joined the EU recently - Romania, Croatia, Poland and Lithuania – had the worst results, while socially the most developed rural areas are those in the Benelux, Denmark and Sweden. The overall degree of rural sustainability was the lowest in Latvia and Romania, as well as in some old EU members like the UK, Luxembourg, the Netherlands and France. On the contrary, Hungary, Bulgaria, Italy, Greece and Ireland were the winners when it comes to sustainability of rural areas. The study also indicated that better environmental conditions were not necessarily related to higher economic development, as it might be expected. Besides that, economic condition was not the major cause of unsustainable rural development in the EU, but the environmental component which had the strongest impact.

Conclusion

Agriculture has always been one of the most important parts of the EU economy and a major force of rural development. Economic progress and globalization process have brought many positive changes to the agricultural sector in the EU, increasing the productivity and diversification. However, that success has often implied aggressive methods and practices that led to air and water pollution, soil erosion, destruction of natural habitats and disturbance of the ecosystem balance. Through the years, as the multifunctionality of agriculture has grown, it became clear that its role in the economy cannot be restricted only to the production of food. Considering the strong impact on the environment and a wide range of positive and negative effects on rural communities, long-term sustainability of agricultural activities must be taken into account.

The current CAP goals and priorities encourage agricultural practices that are environmental friendly, that meet social demands and economic principles. Rural policy has been developed to provide maximum support to the rural areas to cope with contemporary economic, environmental and social challenges. Future reforms and development of the CAP should continue in the same direction, bringing strategies that keep up with the requirements of society and nature. Implementation of innovative solutions and increased technology usage on farms and in rural areas generally will be major determinants of progress and sustainability of rural communities. The improvement of quality of life in these regions is crucial for further development.

Observing trends, measuring how certain activities contribute to the sustainability and evaluating the results of the measures taken, are impossible without appropriate indicators. In the EU, numerous indicators have been defined to monitor the impact of agriculture on the environment and their interrelation, the efficiency of agricultural production, the competitiveness of rural areas, as well as social problems related to employment and living conditions in rural regions. The greatest attention was paid to the environmental dimension, which does not surprise considering the enormous influence of the agricultural sector on nature and growing environmental concerns. The significance of indicators emanates from their role in helping decision-makers when formulating policies and strategies, assessing the effectiveness of the measures taken and measuring progress over time.

Defining a set of standardized indicators, which can apply in all member states, provides a solid foundation for monitoring sustainability of agriculture and rural development across Europe. However, since biological, physical, climatic and socioeconomic conditions vary from one country to another, proposed indicators may not be equally suitable and applicable in all member states. Therefore, it is necessary to adapt given parameters to the particular circumstances of the country. Further work on indicators' development should be focused on overcoming this kind of limitations and on revision and update of indicators in order to respond to the changes and requirements of different regions.

References

- Božić, D., Bogdanov, N. & Ševarlić, M. (2011). *Ekonomika poljoprivrede*. Poljoprivredni fakultet, Univerzitet u Beogradu.
- Commission of the European Communities (2000). *Communication from the Commission to the Council and the European Parliament - Indicators for the integration of environmental concerns into the common agricultural policy* /* COM/00/0020 final */. Brussels.
- European Environment Agency (1999). *Environmental indicators: typology and overview: Technical report No 25*. European Environment Agency, Copenhagen, Denmark.
- Edwards, G. A. (1987). The concept of integrated systems in lower input/sustainable agriculture. *American Journal of Alternative Agriculture* 2,148—152.
- European Commission (1997). *Agenda 2000*. Luxemburg: Office for Official Publications of the European Communities.

- European Commission (2006). Communication from the Commission to the Council and the European Parliament - Development of agri-environmental indicators for monitoring the integration of environmental concerns into the common agricultural policy {SEC(2006) 1136} ,COM/2006/0508 final /. Brussels.
- European Commission (2013). CAP and Rural Development Policy reform deal for 2014-2020. European Commission, Brussels.
- European Commission: Directorate-General for Agriculture (2001). A Framework for Indicators for the Economic and Social Dimensions of Sustainable Agriculture and Rural Development. European Commission, Brussels.
- European Commission: Directorate-General for Agriculture and Rural Development (2013). Rural Development in the EU: Statistical and Economic Information Report 2013. European Union
- Francis C. A., Sander D. & Martin A. (1987). Search for a sustainable agriculture: reduced inputs and increased profits. *Crops and Soils Magazine* 39, 12-14.
- Gafsi, M., Legagneux, B., Nguyen, G. & Robin, P. (2006). Toward sustainable farming systems: effectiveness and deficiency of the French procedure of sustainable agriculture. *Agricultural systems* 90, 226-242.
- Hayati, D., Ranjbar, Z. & Karami, E. (2010). Measuring Agricultural Sustainability, Biodiversity, Biofuels, Agroforestry and Conservation Agriculture. *Sustainable Agriculture Reviews*, vol 5., 73-100, Springer, Netherlands.
- Ikerd, J. (1993). The need for a system approach to sustainable agriculture. *Agriculture, Ecosystems and Environment* 46, 147-160.
- Majkovič, D., Borec, A., Rozman, Č., Turk, J. & Pažek, K. (2005). Multifunctional concept of agriculture: just an idea or the real case scenario?. *Društvena istraživanja: časopis za opća društvena pitanja*, broj 3 (77), 579-596, Zagreb.
- Norman, D., Janke, R., Freyenberger, S., Schurle, B. & Kok, H. (1997). Defining and implementing sustainable Agriculture. *Kansas Sustainable Agriculture Series, Paper #1*, Kansas State University, Manhattan, KS.
- OECD (1998). *Agriculture in a Changing World: which Policies for Tomorrow?* Meeting of the Committee for Agriculture at the Ministerial level. Press Communiqué, Paris, 5-6 March.
- OECD (1999). *Environmental indicators for Agriculture: Volume 1, Concepts and Framework*. OECD Publications Service, Paris, France.
- OECD (2000). *Agricultural Policies in OECD Countries: Monitoring and Evaluation 2000: Glossary of Agricultural Policy Terms*. OECD.
- Piorr, H.-P. (2003). Environmental policy, agri-environmental indicators and landscape indicators. *Agriculture, Ecosystems and Environment* 98, 17-33.
- Pretty, J. (1995). *Regenerating Agriculture: Policies and Practice for Sustainability and Self-reliance*. Earthscan Publications Limited, London.
- Rasul, G. & Thapa, G. (2004). Sustainability of ecological and conventional agricultural systems in Bangladesh: an assessment based on environmental, economic and social perspectives. *Agricultural Systems* 79, 327-351.

- Siudek, T., Czarnecki, E. & Vashchyk, M. (2016). Assessment of the sustainability of rural development in the European Union member states. *Oeconomia* 15 (3), 101–113.
- Tilman, D., Cassman, K., Matson, P, Naylor, R. & Polasky, S. (2002). Agricultural sustainability and intensive production practices. *Nature*, 418, 671-677.
- WCED [World Commission on Environment and Development] (1987). Report of the World Commission on Environment and Development: Our Common Future. Oxford University Press, Oxford.
- Zhen, L. & Routray, J. (2003). Operational Indicators for Measuring Agricultural Sustainability in Developing Countries. *Environmental Management* Vol. 32, No. 1, 34–46., Springer-Verlag, New York Inc.

Monia Milutinović¹
University of Niš
Faculty of Economics

P. 45-59
SCIENTIFIC REVIEW ARTICLE
Received: May, 18, 2019
Accepted: June, 18, 2019

PRIVATE WEALTH MANAGEMENT: THE CASE OF THE REPUBLIC OF SERBIA

Abstract

Today's challenges of wealth management can be noticed by its dynamic competition, fees, stricter regulation and ever-growing needs of clients. These challenges affect responses of interest groups, which consequently promotes critical trends of consumer needs, new technology, changes in advisory models and safety. Clients' growing insight into financial planning is only demanding greater digital possibilities and better advisory options. In regard to the rapid evolution of technology, companies are forced to quickly improve their respective offers for clients. For a very long time, wealth management was only possible in well-developed countries, and their citizens were in a position to be provided with advice regarding wealth management. This branch has lesser significance in countries in transition, since such countries are less wealthy. However, as a result of globalization and the huge growth of gross national product this situation is slowly improving, in spite of financial destabilization and slower economic development. Amidst changes in the allocation of wealth and relative significance of different markets, parameters for the wealth market are changing. The topic of this essay will elaborate on private wealth management in our country. Also, wealth management models will be touched upon, which ones were applied in the past, like the ones that are being used today. Possible improvements of the same will be discussed as well. In our country, the term management of private wealth is still largely unknown. Considering the place that Serbia takes, it is necessary to take measures to improve the indicators, with the aim of improving its position on this list for managers of private equity management. Theoretical and molecular methods have been used in this paper, and the purpose of this work is to present the management of wealth in general, with particular reference to the Republic of Serbia.

Key words: private wealth, management, investment, models, planning, Serbia.

JEL classification: G21, O16

УПРАВЉАЊЕ ПРИВАТНИМ БОГАТСТВОМ: СЛУЧАЈ РЕПУБЛИКЕ СРБИЈЕ

Апстракт

У интензивној конкуренцији, компресији, накнадама, строжој регулативи и растућим потребама клијената огледају се изазови индустрије управљања богатством. Ови изазови утичу на одговоре интересних индустријских група, што за последицу има критичне трендове у потрошачким потребама, нове технологије, промене саветодавних модела, сигурности и координисаности. Особеност клијената управљања богатством јесте све већа прони-

¹ monia-ch.milutinovic@db.com

цљивост у вези са финансијским планирањем и имају потребу за већим дигиталним могућностима и бољим саветодавним опцијама. С обзиром на брзи технолошки развој, од компанија се захтева агилност са циљем унапређења услуга које пружају клијентима. Веома дуго је услуга управљања имовином била омогућена само држављанима развијених држава, којима је било омогућено да добијају савете у вези са управљањем богатством. С обзиром да имају мање богатства, у државама у транзицији ова индустријска грана има мањи значај. Међутим, овакво стање се постепено мења као последица глобализације и великог раста бруто друштвеног производа, упркос финансијској дестабилизацији и успореног развоја економија у овим државама. Услед промена у расподели богатства и релативној важности различитих тржишта долази до промена параметара тржишта богатства. Предмет овог рада представља приватно управљање богатством у нашој држави. Такође, приказаћемо и моделе управљања богатством какви су били некада, а какви се примењују данас, а бавићемо се и могућностима побољшања ових модела. У нашој земљи термин управљање приватним богатством још увек је у великој мери непознат. С обзиром на место које Србија заузима, потребно је предузимање мера како би се показатељи побољшали, са циљем унапређења свог положаја на овој листи за менаџере управљања богатством приватног капитала. У раду је коришћена теоријска и исраживачка метода, а сврха рада је приказ управљања богатством уопште, са посебним освртом на Републику Србију.

Кључне речи: приватно богатство, управљање, улагање, модели, планирање, Србија.

Introduction

Private wealth management represents an investment advisory practice, which is based on financial planning, portfolio managing and other aggregate financial services that are provided to individuals, which differs from the services that corporations or investment groups are provided with. From the client's perspective, private wealth management is a practice which resolves or improves their financial situation, and which also enable their short-term and long-term goals, with some assistance by financial advisors. From the financial advisor's perspective, private wealth management is a practice which serves for delivering financial products and services to wealthy clients, which propels them to reach their pre-set financial goals.

Efficient wealth management demands a certain amount of time, effort and essential knowledge, which many individuals lack. And as they are incompetent to act on it on their own, they ask for advice wealth managers who are experts in private financial management, and prolific in dealing with HNWI (High-net-worth individual). In a holistic approach to investment management the approach to HNWI can be noticed too. And in a much bigger extent in comparison with other financial advisors. Income tax, real estate management, investment management and the rest of legal jobs create problems for HNWI, and they demand greater attention and specific expertise with traditional qualified investment advisors.

The majority of private companies that deals with wealth management represent smaller groups in the network of bigger financial institutions whose focus is upon providing personalized services to their clients. The primary goal of these institutions is

the management and expansion of their client's real estate, which is to be left to future generations. In these groups, there are different advisors who can respectively advise people about cash, fixed income, stocks and alternative means of investment. These experts can create a list of ways in which improvement can be made without exceeding investor's tolerance.

Private firms which are in real estate management business make their profit based on fees. These firms take percentual cuts from their clients' managed real estate. According to HNWI, a financial advisor's job, who also works on fees, creates a smaller clash of interests unlike traditional advisors, who work on commission.

1. Private wealth management today and before

One of the two companies, Goldman Sachs or Morgan Stanley is thought to be responsible for the creation of phrase "wealth management" during the 1930s with a desire to distinguish wealthy clients from expansive markets. In that period wealth management was just a niche service, as the banks focused on accounts with average value from 10 to 20 million dollars. In the late 1980s, this phrase gained its popularity as banks and stockbrokers gained much more knowledge. Under their guidance, many seminars were organized and events at which sponsor firms used to showcase their traits and services. The wealth management industry was shaken by the big recession at the beginning of this century (Beaverstock, et.al., 2013). Then it was clear that individuals had to possess sufficient knowledge about wealth management and those same individuals had to have a better rapport with the managers of their wealth. Very quickly the ways how wealth is managed have changed, very much thanks to digital resurgence.²

In the last decade, a Copernicus-like shift has occurred, as the number of available data clients could use have expanded greatly. That way they not only had more data they could work with, but their power also rose. So, the wealth management industry has changed fundamentally as a result of more available data, technological advances, changed expectations, client's desires, demographic trends, and regulatory changes. These changes work in consumer's benefit (Jennigs, et.al, 2011). At the same time, the wealth management industry has been improving, which as a result can offer their clients more thorough consultation and suggestions. As a consequence of that, instead of more thorough suggestions, relationships based on transactions have been introduced, such as investment groups or annuity. Here's financial planning as an example (Ang, 2010).

The first phase of the process is a formal meeting between the client and manager for relations and planning, which often uses a very complex computer tool for planning. After the meeting, there is allotted time that is spent on planning and creating a thorough strategy for the client, which can be in the form of a book. Sometimes this can oversaturate a client with information. Nowadays, as interactive tools are easily accessible, the inclusion of the client in the process is much more possible (Ljumović, Marinković, 2013). So, there is a possibility of picking in which phase a client will be included. Also, there is a possibility of meeting with the planners, who can provide them will all details in regards to their wishes and needs.

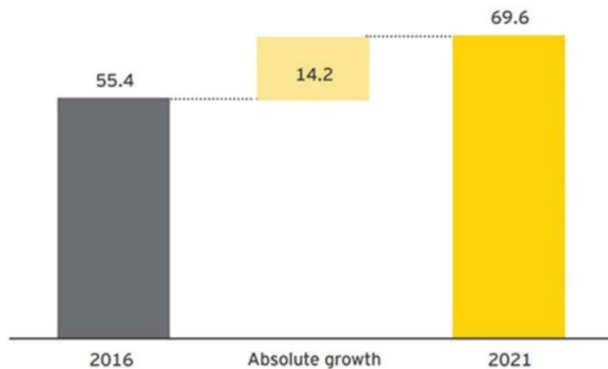
² <https://www.investopedia.com/terms/w/wealthmanagement.asp>: 01.03.2019.

Figure 1. Private Wealth Management Concept

Source: <http://www.thehockgroup.com/private-wealth-management.7.htm>

This segment of the global market has gained its attractiveness because of its size, and possible growth. In today's market, the amount of money for net investments exceeds 55.000 billions of dollars. Global wealth model states how by 2021 the sum of investment will be around 69,607 billions of dollars. So, it will be at least one fourth bigger than today's, meaning the annual growth rate will be 4.7%. The anticipation and exploitation of this market potential and growth is a must.³

Figure 2. Total net investments shown in trillions of dollars - 2016 with total growth up to 2021.



Source: <file:///C:/Users/Milan/Downloads/ey-wealth-management-outlook-2018%20Version%20Lux.pdf>

³ [https://www.ey.com/Publication/vwLUAssets/ey-wealth-management-outlook-2018/\\$file/ey-wealth-management-outlook-2018.pdf](https://www.ey.com/Publication/vwLUAssets/ey-wealth-management-outlook-2018/$file/ey-wealth-management-outlook-2018.pdf): 11.03.2019.

The basic difference between private banking and wealth management is represented by the fact that private banking doesn't have to mean investment always. Private banks' experts can give their clients advice on possible investments, but not all banks will participate in investment for their clients (Amenc et.al, 2009). Users of private banking services open deposit accounts of any kind. In order to improve their financial situation and realize their high income, private wealth managers with their financial advisors provide their clients with advice. In the broadest sense, there is a possibility of private banking expansion with the goal to manage the real estate, whereas there aren't possibilities to provide the services of private banking from companies who are in wealth management.

2. Wealth management leaders in the world

In the basis of private banking growth, there is a bigger income on the classes of real estate in relation to the average growth of gross domestic product (GDP) (Brunel, 2006a). Accumulation of means depends on four mechanisms: approach to market, expertise, negotiating skills and inclusion of constituents.

Table 1. The largest private banks and wealth managers in the world of 2018

2018 Rank	Company	Assets Under Management (AUM)
1	UBS	\$2,403 billion
2	Bank of America Merrill Lynch	\$1,080 billion
3	Morgan Stanley	\$1,045 billion
4	Credit Suisse	\$792 billion
5	J.P.Morgan Private Bank	\$526 billion
6	Citi Private Bank	\$460 billion
7	BNP Paribas	\$436.7 billion
8	Goldman Sachs	\$394.3 billion
9	Julius Baer	\$388.3 billion
10	China Merchants Bank	\$292.8 billion
11	Northern Trust	\$289.8 billion
12	HSBC Private Bank	\$228 billion
13	Deutsche Bank Wealth Management	\$256.8 billion
14	Wells Fargo	\$248 billion
15	The Industrial and Commercial Bank of China (ICBC)	\$206 billion

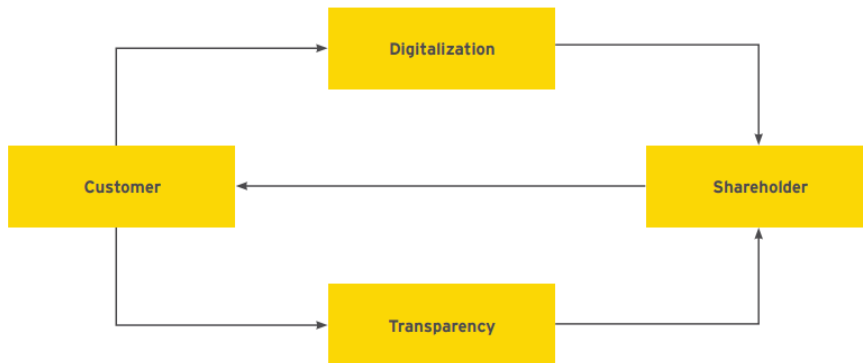
Source: <https://www.businessinsider.com/the-15-biggest-wealth-managers-in-the-world-2018-6#4-credit-suisse-792-billion-12>

As an example, we can take family offices, which thanks to the expansion of their direct and part investive affiliates demand the best alternative possibilities for investment. Competence regarding nurture and development of wealth are transferred from one generation to another, and therefore they can nurture and improve long-term relationships with banks and wealth managers. With a high number of investments and private wealth the conditions for unusual and complex investment are set, and a great position of power is established in negotiations. Thanks to diverse connections with

business, politics, and society, very strong connection are formed, which itself have great significance for molding conditions of political and market economic entity which is in check with specific tendencies for wealth preservation.⁴

The retirement of private wealth manager is necessary in order to analyze one's situation thoroughly. A manager who defines his work by his competence, that is ever growing, will be in pole position, as opposed to those who don't improve their abilities.

Figure 3. Factors that influence the management of private wealth



Source: <http://www.thehockgroup.com/private-wealth-management.7.htm>

It's a must for top managers to work on redefining their wealth management strategies. Diagnostics, vision, and differentiation are just some of the processes managers go through. Also, they must ask themselves questions about which markets they want to engage in, how they want to function, how their offers are more valuable than the offers of other managers, and which traits they need (Brunel, 2006a). A top manager's strategy should be based on adequate analysis of the current situation, and the grasp of changes in the industry is also very important. Based on this strategy their future activity and orientation are defined. Acceleration of organic growth based on the revision of the current market position and the value of offers on land and foreign markets should serve for the first step in redefining wealth management strategies. The analysis of current market positioning in comparison to the competition and decision making about the desired market position should be the beginning of a revised strategy (Adam, 2009).

3. Private wealth management in Serbia

In our country, the term private wealth management is still widely unknown. In Serbia there are many wealthy people, given the population of the country is decreasing, as the younger individuals are migrating in search of a better life. The term 'private banking' is much more present in our country, and it's much more known than 'private wealth management'.

Providing services in the field of banking, investment and other services to wealthy individuals represent a field of private banking operations, which is actually

⁴ <https://worldwealthreport.com/resources/world-wealth-report-2018/>: 12.03.2019.

a separate domain of banking. Very often terms 'wealth management' and 'private banking' are mixed up, which are in most cases defined as a service of client's financial active management, that is long-term with the goal of real estate accretion. The clientele consists of wealthy individuals, who are enabled easy access to personalized service (Milenković, 2015). Basically, the real difference between private banking and wealth management are different kinds of institutions that can deal with certain activities. The services provided by private banking based on more specific adjustment can be given by banks only, whereas services of wealth management can be given by other institutions of financial characters, such as investment groups, etc.

The second Belgrade Wealth Forum had a major role in the process of private wealth management development. At this event, there were more than 150 participants from 20 different countries. For the first time were Serbian residential programs, aligned with current legislation, presented to those in attendance (Ljumovic, Marinkovic, 2013). *Andorre*, which is an exclusive program intended for a limited number of wealthy individuals with impeccable biography was also presented at the event.

Future development of banks in Serbia is reflected on the digital platform, based on which a complete banking system will be changed, with help from their intermediaries, which are management companies, and institutions for electronic money. If a big investment phase were to emerge in Serbia, a big part of it would be a project that would be based on launching the program of Serbian nationality.⁵

Automatic exchange of information among countries, implementation of remaining conventions of OECD, with which transparency in business would be achieved and the decrease of possibility for tax optimization and privacy protection will become a topic that will collect greater attention at international level, but in Serbia too, in order to improve private wealth management.

UniCredit Bank⁶ and Hypo Alpe Adria Bank (now Addiko Bank)⁷ were the first banks that started offering private banking services, the services that are closest to the form of private wealth management in Serbia. Raiffeisen, Komercijalna bank and Eurobank were the first to offer VIP banking service, which is considered the precursor of the creation of a private banking sector. In short, its first branch of UniCredit Bank opened at the beginning of 2008. The barrier for entry into the category for this type of service is 200,000 euros (worldwide this limit is much higher), which are deposited for investments, while the amount of monthly income should be higher than 5,000 euros.

This exclusive service provides clients with services such as asset management, maintenance, and growth of property, investment banking services, brokerage services, and real estate consulting. Potential clients on the market of our country are successful people, such as managers, athletes, media personalities, former shareholders of companies, that is, people who do not have time to care for their private money due to business obligations and therefore need private bankers. It is essential that property managers point to important changes in the financial market in order to consider risks with their clients. The situation in which a private banker is simultaneously an investment advisor is very desirable.

3.1. Private Wealth Management in the region and investment models

When deciding on placement of assets, wealth management managers are guided by the principle that relates to the necessity of capital demand and conditions in order to maximize

⁵ <https://www.knightfrank.com>: 18.03.2019.

⁶ <https://www.unicreditbank.rs>: 19.03.2019.

⁷ <https://www.addiko.rs>: 19.03.2019.

yields on the assets that are placed (Jääskeläinen, Maula, & Murray, 2007). In the neighboring countries, the first condition was met, given the higher demand for capital in relation to its offer. Regarding the other conditions, managers find conditions for realizing their interest in market growth opportunities that are in the process of ascent. However, in such cases, there is great uncertainty and risk, but due to the reforms implemented in these countries and the harmonization of legislation with EU regulations, the risk factor is considerably lower.

The globalization of capital markets (both risky and private) is contributing to the harmonization of business conditions and risk reduction in countries, in addition to the reform process. Owing to this situation, the market is expanding, and consequently by reducing uncertainties and risks, which were an indispensable challenge for managers in the markets of the countries that are in the process of development (Schöfer, Leitinger, 2002). In order to assess the region of Central and Eastern Europe, it is necessary to approach the analysis of the attractiveness and position of individual countries in these regions (Groh et al., 2010). The contribution of this analysis is reflected in the perspective of Serbia's position in the region and the discovery of the leading countries when it comes to attractiveness for investment.⁸

The blue fields in the Table 1 view are countries that rank below the regional average. Given the ranking of the attractiveness index that makes the rank of the attractiveness of the selected indicators - so that the position of the state is more favorable is the lower value. A group of countries that, according to macroeconomic indicators of attractiveness below the median values in the region, consisting of Bosnia and Herzegovina, Montenegro, Croatia, Latvia, Macedonia, Moldova, Serbia, and Ukraine. Ranking of countries according to the criteria of attractiveness based on the indicator looks like this: Poland (1), Czech Republic (2), Hungary (3), Slovakia (4), Slovenia (5), Lithuania (6), Estonia (7), Bulgaria), Romania (9), Croatia (10), Latvia (11), Ukraine (12), Serbia (13), Bosnia and Herzegovina (14), Macedonia (15), Montenegro (16) and Moldova (17).

Table 2. The tax attractiveness index of the CEE countries in the period from 2007 to 2014.

CEE countries	2007	2008	2009	2010	2011	2012	2013	2014	Mean	Rang
Bosnia and Herzegovina	77	71	79	73	76	72	73	75	74,5	14
Bulgaria	50	55	55	53	56	54	53	56	54	8
Czech Republic	34	37	35	34	34	33	35	37	34,87	2
Montenegro	75	76	68	70	81	79	86	84	77,37	16
Estonia	41	36	52	59	55	50	51	51	49,37	7
Croatia	55	59	60	61	64	65	65	64	61,62	10
Latvia	56	57	73	81	71	63	60	55	64,5	11
Lithuania	46	43	53	65	51	44	43	43	48,5	6
Hungary	43	48	38	39	38	41	42	45	41,75	3
Macedonia	76	79	74	72	78	81	80	78	77,25	15
Moldova	71	93	98	102	101	95	98	96	94,25	17
Poland	35	34	33	29	29	28	28	29	30,62	1
Romania	47	49	48	54	62	64	62	52	54,75	9
Slovakia	48	47	45	42	45	45	44	48	45,5	4
Slovenia	45	45	39	46	48	47	45	50	45,62	5
Serbia	72	70	61	66	73	74	82	79	72,12	13
Ukraine	67	66	72	82	77	71	69	63	70,87	12

Source: *Risk and Private Capital in the Countries of Central and Eastern Europe*

⁸ Invest Europe. (2016). Central and Eastern European Private Equity Statistics 2015.

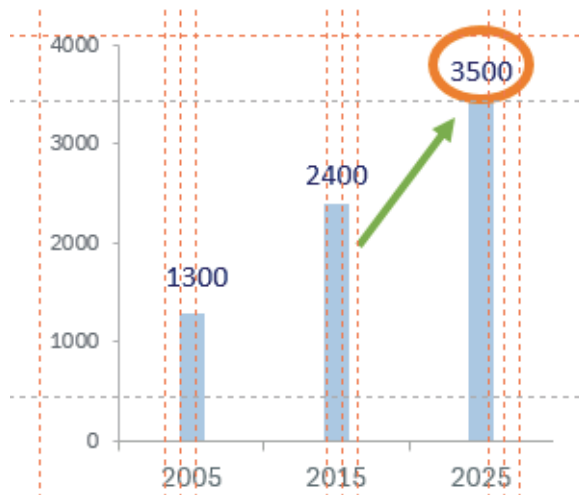
We can conclude, given the place in which Serbia is, that it is necessary to take measures in order to improve the indicators, with the aim of improving its position on this list for managers of the management of wealth of private capital (Pistor et.al., 2004). From a single point of view, Serbia's position on the list of attractiveness shows that during 2009, Serbia improved its ranking, but as a consequence of the major global economic crisis, the trend rate dropped, which reached its minimum level in 2013, followed by improvement of the position.

3.2. Wealth structure in Serbia

In Serbia there is certainly room for managing rich clients' assets. In a way, this has already started in our country through major universal banks (Milenković, 2015). With all the difficulties that hit Serbia in the 1990s, in the conditions of sanctions, in the wartime environment, crisis and poverty, this period also made the first wealthy Serbian people. According to some, the calculations before the economic crisis shook the Serbian economy, only a dozen of the largest businessmen had wealth of billions of euros. Thus, during the crisis in 2009, the wealth of 10 people was equal to 30 percent of Serbia's GDP, or almost 10 billion euros.

If you look at Chart 1. you can see that the number of millionaires in Serbia is growing. The total number of millionaires in Serbia in 2005 was 1,300, while in 2015 this number was increased to 2400. According to some research and forecasts, the number of millionaires in Serbia could increase to 3,500 in 2025, meaning each person of those 3500 would have wealth of at least one million.

Graph 1. Total number of millionaires

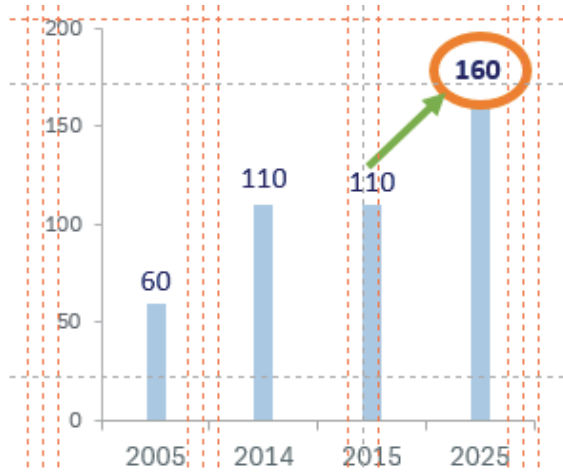


Source: *The Wealth Report 2016 (Knight Frank)*, p. 54.

Nowadays, there is a slightly different structure of millionaires in Serbia. We are looking at millionaires who have at least ten or even more millions of euros in their accounts. In 2005, 60 people in Serbia have been registered with at least 10 million dollars or more in their account. It is interesting that the number of millionaires in 2014 and 2015 did not change.

It has risen in comparison to 2005, but it has not changed, and there are 110 millionaires with 10 or more million dollars. The forecasts predict that in 2025 in Serbia there should be no less than 160 people with at least 10 and even more million dollars in their account.

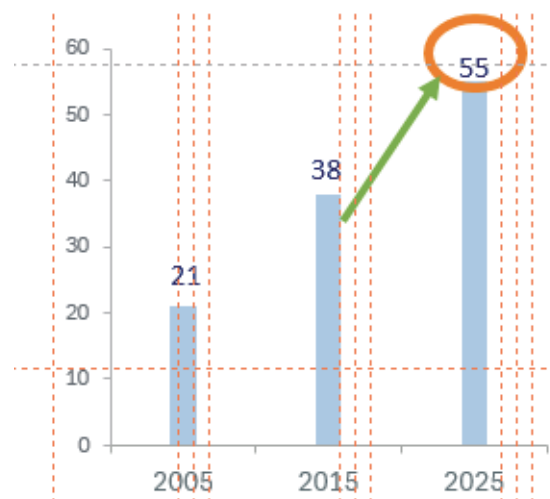
Graph 2. Number of millionaires with 10 and more million



Source: The Wealth Report 2016 (Knight Frank), p. 54.

Graph 3 shows the number of millionaires in Serbia with 30 and more million. And here growth has been recorded during the span of 10 years. In 2005, 21 millionaires with 30 and more million dollars in their accounts were registered, while in 2015 this number rose to 38 million. The forecasts are such that in 2025, Serbia should have 55 millionaires with 30 or more million dollars in their account.

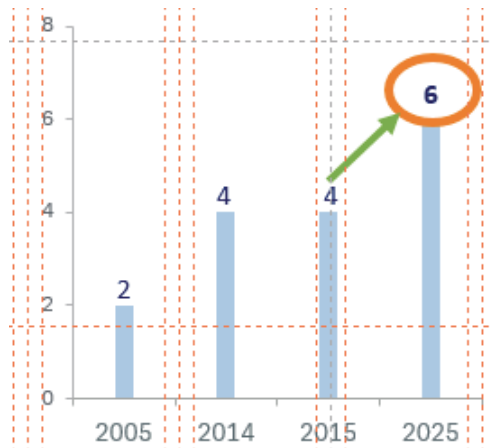
Graph 3. Number of millionaires with 30 and more million



Source: The Wealth Report 2016 (Knight Frank), p. 55.

Finally, we take a look at the richest people in Serbia, or people with 100 or more million in their account. In 2005, two people with this kind of bank balance were registered, while this number doubled in 2014 and remained the same in 2015. It is projected to grow in the next 10 years, meaning Serbia will have 6 millionaires with 100 and more million in its account in the year 2025.

Graph 4. Number of millionaires with 100 and more million



Source: *The Wealth Report 2016 (Knight Frank)*, p. 56.

4. Gaining trust in Wealth Management in Serbia

There is still a need for excessive work from the Republic of Serbia in order to improve conditions for private wealth management. Banks in Serbia ambitiously started working with private banking back in 2006. One of the banks founded a branch office that dealt with private banking. The decision of the other banks was that during the initial phase, they deal with providing private banking services at their offices. To accomplish the realization of this decision, certain specializations and education for employed had to be provided (Milenković, 2015).

The rapid growth of the economy and active of individuals worked in benefit of private banking, which was established much easier as it had already been done in countries that were out of the transition process. The clientele that decide on private banking services were located around Switzerland, Luxembourg, Austria, and rarely New York. It's evident that the clientele would remain in Serbia if the adequate services were made possible for them.

However, in the recent period, this service has had lesser significance in our country. The attitude of banks that compensation of high expenditure is not possible based on collaboration with a small number of clients is the evidence that profitability is not a characteristic of this activity (Smith, Walter, 2003). Based on the experience of the banks so far, current conditions are not the best for the investment of additional means with the goal to promote this service. Also, the interest of other banks in this activity in the finance market is not very high.

Conclusion

The growth of gross social product in Serbia is expected to be around 4% in 2018, which is more than in 2017. For the GSP rise are responsible for bigger investments, bigger expenditure, and significant export. Quicker economic growth was expected, based on the original assessment. As a consequence of the economic crisis, there were focus changes among the wealthiest people in the world, with now focus being on the stability of their profit, rather than the increase of the same. Given the low rate of economic growth and the businesses dependency on the income from peculiar markets in the countries in transition, the emphasis is greater on the personal security of the wealthy, as inequality is increasing.

The first phase in the work of wealth managers is the plan development, which enables maintaining and increasing of the client's wealth according to financial situation, goals and the level of risk a client is willing to take. Once he's established the plan, the manager starts to meet with clientele, and tailor their wishes to their possibilities, learns the client's needs and desires. Also, managers nurture their relationships constantly. Clients in this domain are rare in Serbia. Also, in our country, there is a mix up between private and classic banking. Additionally, there is also identifying between private and classic banking services, which are offered to important clientele, and yet it only acts as one trait of the process.

Wealth managers can be hired to work with small businesses, or in bigger firms that are connected with the finance industry. Financial consultant or financial advisor are other titles connected with wealth managers, which is inclined with the work they do. One designated wealth manager or the members of teams can provide the services of wealth management to clients.

References

- Adam, T. (2009): Capital expenditures, financial constraints, and the use of options, *Journal of Financial Economics* 92, 238-251.
- Ait-Sahalia, Y. and R. Kimmel (2007). Maximum Likelihood Estimation of Stochastic Volatility Models. *Journal of Financial Economics* 83 (2), 413–452.
- Amenc, N., F. Goltz, and A. Lioui (2011): Practitioner Portfolio Construction and Performance Measurement: Evidence from Europe, *Financial Analysts Journal* 67(3), 39-50.
- Amenc, N., F. Goltz, V. Le Sourd, and L. Martellini (2008): European Investment Practices Survey, EDHEC-Risk Publication.
- Amenc, N., L. Martellini, and V. Ziemann (2007): Asset-Liability Management Decisions in Household Finance, EHDEC Working paper.
- Amenc, N., L. Martellini, V. Milhau, and V. Ziemann (2009). Asset-liability management in private wealth management. *Journal of Portfolio Management* 36 (1), 100–120.
- Amenc, N., S. Focardi, F. Goltz, D. Schröder, and L. Tang (2010). Edhec-risk european private wealth management survey. EDHEC-Risk Institute Publication. Available at http://www.edhec-risk.com/edhec_publications/all_publications/RISKReview.2010-11-30.5229/attachments/EDHEC-Risk_European_Private_Wealth_Management_Survey.pdf.

- Ang, S-K. 2010. A Qualitative Study on the Challenges of Private Banking in Asia. *The Journal of Wealth Management*, 12, (4): pp. 68-77.
- Bajeux-Besnainou, I., J. Jordan, and R. Portait (2003). Dynamic Asset Allocation for Stocks, Bonds, and Cash. *The Journal of Business* 76 (2), 263–287.
- Balduzzi, P. and A. W. Lynch (1999): Transaction costs and predictability: Some utility cost calculations, *Journal of Financial Economics* 52(1): 47-78.
- Basu, A. and A. Brisbane (2009). Towards a dynamic asset allocation framework for target retirement funds: Getting rid of the dogma in lifecycle investing. Working Paper.
- Basu, A. and M. Drew (2009). Portfolio size effect in retirement accounts: What does it imply for lifecycle asset allocation funds? *The Journal of Portfolio Management* 35 (3), 61–72.
- Beaverstock, J. V., Hall, S., Wainwright, T. 2013. Servicing the Super-Rich: New Financial Elites and the Rise of the Private Wealth Management Retail Ecology. *Regional Studies*, 47, (6): 834-849.
- Benzoni, L., P. Collin-Dufresne, and R. Goldstein (2007). Portfolio choice over the life-cycle when the stock and labor markets are cointegrated. *Journal of Finance* 62 (5), 2123–2167.
- Black, F. and A.R. Perold (1992): Theory of constant proportion portfolio insurance, *Journal of Economic Dynamics and Control* 16, 403-426.
- Black, F. and R. Litterman (1992): Global Portfolio Optimization, *Financial Analysts Journal* 48(5), 28- 43.
- Blake and K. Dowd (2006): Stochastic lifestyling: Optimal dynamic asset allocation for defined contribution pension plans, *Journal of Economic Dynamics and Control* 30(5), 843-877.
- Bodie, Z., J. Detemple, and M. Rindisbacher (2009). Life cycle finance and the design of pension plans. 1, 249–286. *Annual Review of Financial Economics*.
- Bodie, Z., R. C. Merton, and W. Samuelson (1992): Labor Supply Flexibility and Portfolio Choice in a Life-Cycle Model, *Journal of Economic Dynamics and Control* 16, 427-449.
- Brau, J. and S. Fawcett (2006): Initial Public Offerings: An analysis of theory and practice, *Journal of Finance* 61(1), 399-436.
- Brav, A., J.R. Graham, C.R. Harvey, and R. Michaely (2005): Payout policy in the 21st century, *Journal of Financial Economics* 77(3), 483-527.
- Brennan, M. and Y. Xia (2002). Dynamic asset allocation under inflation. *Journal of Finance* 57 (3), 1201–1238.
- Brennan, M., E. Schwartz, and R. Lagnado (1997). Strategic asset allocation. *Journal of Economic Dynamics and Control* 21 (8-9), 1377–1403.
- Brounen, D., de Jong, A., and K. Koedijk (2006): Capital structure policies in Europe: survey evidence, *Journal of Banking & Finance* 30(5), 1409–1442.
- Brunel, J. L.P. (2006a): *Integrated Wealth Management: The New Direction for Portfolio Managers*, 2nd ed. London: Euromoney Books.
- Brunel, J. L.P. (2006b): How Sub-Optimal—If at All—Is Goal-Based Asset Allocation? *Journal of Wealth Management* 9(2), 19–34. Cairns, A. J. G, D.
- Cairns, A., D. Blake, and K. Dowd (2006). Stochastic lifestyling: Optimal dynamic asset allocation for defined contribution pension plans. *Journal of Economic Dynamics and Control* 30 (5), 843– 877.

- Campbell, J. and L. Viceira (1999). Consumption and portfolio decisions when expected returns are time varying. *Quarterly Journal of Economics* 114 (2), 433–495.
- Campbell, J. and L. Viceira (2005). The term structure of the risk-return trade-off. *Financial Analysts Journal* 61 (1), 34–44.
- Campbell, J., Y. Chan, and L. Viceira (2003). A multivariate model of strategic asset allocation. *Journal of Financial Economics* 67 (1), 41–80.
- Chacko, G. and L. Viceira (2005). Dynamic consumption and portfolio choice with stochastic volatility in incomplete markets. *Review of Financial Studies* 18 (4), 1369–1402.
- Cocco, J., F. Gomes, and P. Maenhout (2005). Consumption and portfolio choice over the life cycle. *Review of Financial Studies* 18 (2), 491–533.
- Cvitanic, J. and I. Karatzas (1995). On portfolio optimization under “drawdown” constraints. *IMA Volumes in Mathematics and Its Applications* 65, 35–35.
- Deguest, R., L. Martellini, and V. Milhau (2011). Hedging versus insurance: Long-horizon investing with short-term constraints. Working Paper. EDHEC-Risk Institute.
- Detemple, J. and M. Rindisbacher (2010). Dynamic asset allocation: Portfolio decomposition formula and applications. *Review of Financial Studies* 23 (1), 25–100.
- Detemple, J., R. Garcia, and M. Rindisbacher (2003). A Monte Carlo method for optimal portfolios. *Journal of Finance* 58 (1), 401–446.
- Groh, A. P., von Liechtenstein, H., & Lieser, K. (2010). The European Venture Capital and Private Equity country attractiveness indices. *Journal of Corporate Finance*, 16(2), 205-224.
- <https://worldwealthreport.com/resources/world-wealth-report-2018/>: 12.03.2019.
- <https://www.addiko.rs>: 19.03.2019.
- [https://www.ey.com/Publication/vwLUAssets/ey-wealth-management-outlook-2018/\\$file/ey-wealth-management-](https://www.ey.com/Publication/vwLUAssets/ey-wealth-management-outlook-2018/$file/ey-wealth-management-)
- <https://www.investopedia.com/terms/w/wealthmanagement.asp>: 01.03.2019.
- <https://www.knightfrank.com>: 18.03.2019.
- <https://www.unicreditbank.rs>: 19.03.2019.
- Invest Europe. (2016). *Central and Eastern European Private Equity Statistics 2015*. Retrieved from <https://www>.
- Invest Europe. (2016). *Central and Eastern European Private Equity Statistics 2015*. Investeurope. [Eu/media/504370/invest-europe-cee-statistics-2015.pdf](https://www.investeurope.eu/media/504370/invest-europe-cee-statistics-2015.pdf).
- Jääskeläinen, M., Maula, M., & Murray, G. (2007). Profit distribution and compensation structures in publicly and privately funded hybrid venture capital funds. *Research Policy*, 36(7),
- Jennings, W. W., Horan, S. M., Reichenstein, W., Brunel, J. L. P. (2011). Perspectives From The Literature Of Private Wealth Management. *The Journal of Wealth Management*, 14, (1): p8-40.
- Ljumović, I., Marinković, S. (2013). *What Makes Bank Go Global in National and European Identity in The Process of European Integration*, International Thematic Proceedings. Belgrade: Institute of International Politics and Economics: 473-488.

Milenković, N. (2015). *Rizični i privatni kapital u zemljama Centralne i Istočne Evrope*. Novi Sad: Univerzitet u Novom Sadu, Ekonomski fakultet u Subotici (Doktorska disertacija).

outlook-2018.pdf: 11.03.2019.

Pistor, K., Martin, R., Gelfer, S., (2004), *Law and Finance in Transition Economies*, European Bank for Reconstruction and Development, Working paper No. 49, 171-213.

Schoefer, P., & Leitinger, R. (2002). *Framework for Venture Capital in the Accession Countries to the European Union*. Viena Univeristy of Applied Sciences working paper.

Smith. R., Walter, I. (2003). *Global banking*, second edition. Oxford: Oxford University Press.

The Wealth Report 2016 (Knight Frank), <https://content.knightfrank.com/research/83/documents/en/wealth-report-2016-3579.pdf>

ШАБЛОН / ТЕМПЛАТЕ ЗА ПИСАЊЕ РАДОВА

Име аутора (Font size 10 Normal) Times New Roman (SR-Cyrilic)
Факултет или институција и Град (Font size 10 Italic)

НАСЛОВ СРПСКИ (Font size 11 Bold)

Апстракт

Текст апстракта на српском ...

Кључне речи:

NASLOV ENGLISKI ili neki drugi jezik (Font size 11 Bold)

Abstract

Tekst apstrakta na engleskom ili na nekom drugom jeziku...

Key words:

НАСЛОВ (Font size 11 Bold)

Текст (Font size 10).....

Литература

1. Списиак литературе

Veličina strane 170mm x 240mm
Margine: Top 30mm Bottom 20mm
Left 22mm Right 22mm

CIP – Каталогизација у публикацији
Народна библиотека Србије, Београд

33+502/504

ECONOMICS of Sustainable Development =
Економика одрживог развоја / editor-in-chief
Dragoljub Simonović. - Vol. 3, br. 1 (2019)- . - Niš :
Society of Economists "Ekonomika", 2019 - (Niš :
"Medinvest"). 52 стр. - 24 cm

Dva puta godišnje.

ISSN 2560-421X = Economics of Sustainable
Development

