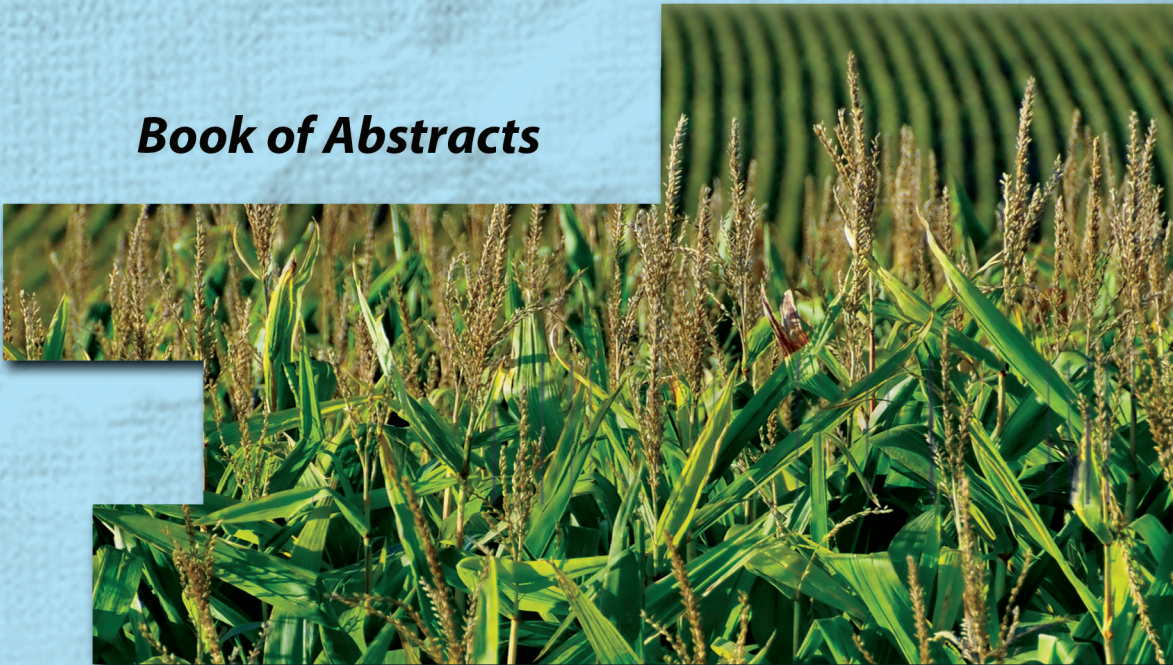




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SUSTAINABLE AGRICULTURE AND RURAL DEVELOPMENT II

Book of Abstracts



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PREFACE

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In the Book of Abstracts are included the abstracts of articles from Serbia, along with the invited and other articles from abroad, prepared by foreign authors, which are IAE, Belgrade associates, and whose institutions have close scientific, professional and technical cooperation with the IAE, Belgrade.

The Book of Abstracts addresses the wider audience by being scientifically and practically focused on all segments of sustainable agriculture and rural development.

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PLENARY SECTION

PLENARY SECTION
First day, 16th December 2021

ORGANIZATIONAL STRUCTURAL CHANGES IN BULGARIAN AGRICULTURE: REGIONAL DIMENSIONS AND ASSESSMENTS

Albena Miteva¹, Ivan Kanchev²

Abstract

In recent decades, there have been dynamic and significant changes in the number, average size and characteristics of agricultural holdings. The speed of change has increased since our country's accession to the EU.

The purpose of the report is the analysis of the changes in the average sizes and characteristics of the agricultural holdings in the country by districts of the country.

The analysis and assessments are made on the basis of statistical data from the censuses of agricultural holdings in the country (2003, 2010, 2020) and expert assessment of the changes in the development and distribution of agricultural holdings by planning districts and regions in Bulgaria. 163 specialists in agrarian economics and regional development from all districts of Bulgaria participate in the expert assessment.

Key words: *agricultural holding, structural changes*

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SOCIO-ECONOMIC DETERMINANTS OF SMALL FARMS FROM THE REPUBLIC OF MOLDOVA

Alexandru Stratan¹, Eugenia Lucasenco², Alexandru Ceban³

Abstract

Small farms represent an important factor in the development of rural areas of the Republic of Moldova. Their evolution and progress may determine the social well being not only of farmers, but also of the rural inhabitants. The paper analyzes the socio-economic determinants of small farms from the Republic of Moldova in terms of their role in rural areas, benefits they bring for the economy and society as a whole, environmental and safety issues. Education aspects and social life of farmers are also taken into consideration. The paper is developed based on the results of a survey of 552 smallholders from the Republic of Moldova carried out in 2019 and 20 in depth interviews with small farmers carried out in 2020. The results present the high implication of small farmers in socio-economic life of the country, being generators of work places, healthy products, environmentally friendly businesses and public goods.

Key words: *small farms, Republic of Moldova, rural environment*

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STUDY ON TOMATO CONSUMERS BEHAVIOR DURING THE COVID-19 HEALTH CRISIS - CASE STUDY ROMANIA

Ancuța Marin¹, Rozi Berevoianu², Steliana Rodino³

Abstract

With a strategic importance for agriculture and for European consumers, the vegetable sector, with around 1,000,000 horticultural farms in the EU, can generate many direct and indirect jobs in many regions of the continent. Romania ranks 3rd in the hierarchy of vegetable growing countries in Europe, producing 3.2% of the quantity of vegetables produced in the EU, on an area that represents 9% of the total EU's vegetable areas. According to statistical data, the average annual consumption of vegetables per capita in Romania is around 158.5 kg, of which 38.4 kg of tomatoes, which represents 24.22% of total vegetable consumption. This necessitated the granting of state financial aid to increase tomato production and extend the harvest period (for tomatoes produced in protected areas), so that imports cover only the winter months (December, January and February). The present study is focused on the drivers of the decision to purchase tomatoes and tomato products and the degree of satisfaction of buyers with tomatoes and canned tomatoes purchased. The study provides results on consumers criteria for selecting tomatoes (variety, taste, price, origin), and on the changes in their hierarchy during the COVID-19 health crisis.

Key words: *consumer behavior, vegetables, tomatoes, Covid -19, Romania*

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ASSESSMENT OF TOURISM INDUSTRY AND PROSPECTS FOR RURAL TOURISM DEVELOPMENT (USING THE EXAMPLE OF THE SELECTED COUNTRIES)

Ivolga Anna¹, Shakhramanian Irina²

Abstract

The article provides overview of the current state of the tourism industry in some countries of the world from the point of view of the management structure, financing and attracting investment. Examples of successful practices of organizing various aspects of the functioning of the tourism industry are given. The article considers the global trends that determine the development of the tourism industry, with the emphasis on sustainable tourism as the most important global trend in the period of COVID-19. The place of rural tourism among the identified global trends in tourism development is determined. The research based on abstract-logical, computational and comparative methods with the use of analysis of official statistic information. Recommendations for the development of rural tourism in Russia are proposed.

Key words: *sustainable development, tourism industry, sustainable tourism, rural tourism, specially protected natural areas (SPNA).*

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PERSPECTIVES ON CAPITALIZATION THE RURAL COMMUNITIES' POTENTIALS IN ROMANIA: CHALLENGES, CONSTRAINS AND SYNERGIES

Jean Vasile Andrei¹, Iuliana Nicoale²

Abstract

The rural communities represent an essential component of the Romanian rural economy, still insufficiently capitalized from the perspective of generating gross value added and latent potentials, much diversified but still gravitating around the agricultural activities. Thus, the accentuated depopulation of rural communities, migration, limited access to certain specialized services, including health, low levels of household income, but also low employment rates are just some of the most actual challenges facing rural communities and rural development in Romania. A superior capitalization of the rural communities' potentials in Romania implies designing an inclusive approach and a global and renewed territorial perspective focused on sustainable development and financing policies. From this perspective, the capitalization and development of the Romanian rural communities' potentials implies not only the achievement of a complementarity between rural and urban areas but also a better integration of potentials and policies to achieve competitive levels of social and economic cohesion and ecological sustainability of all these territories.

The main aim of this research is to identify, present and analyze some of the major perspectives on capitalization the rural communities' potentials in Romania from the European Agricultural Model exigencies. The research is mainly centered on analyzing the challenges and constrains in capitalization of the Romanian rural communities' potentials, and also will determine the main possible filed synergies. The main results may represent a further step in understanding the challenges, constrains and synergies developed in the rural communities and rural areas in Romania.

Key words: *Common Agricultural Policy, rural communities, sustainable development, synergy, territorial perspective.*

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THE ECONOMIC EFFECTS OF COVID-19 IN THE DEVELOPMENT OF RURAL AREAS AND AGRICULTURE IN POLAND: FROM GLOBAL MARKET TO LOCAL SOCIETY.

Marian Podstawka¹, Adam Wasilewski², Marek Wigier³

Abstract

The COVID-19 pandemic caused an economic shock that was noticeable on both the demand and supply sides of many markets. The demand shock resulted mainly from changes in consumer preferences and the reduction of their incomes, and the supply shock resulted from the limited availability of certain resources. The occurrence of these phenomena was most visible in the financial markets. Nevertheless, the effects of COVID-19 were felt in virtually all sectors of the economy, including the development of agriculture and rural areas. Changes at the global level had negative effects at the local level, in the form of a slowdown in the development of Polish agriculture and the pace of investments of local self-governments.

Due to the above conditions, the study attempts to determine how changes in global markets influenced the development of agriculture and rural areas at the local level in Poland. The scale of negative changes in the area of this development was also estimated. The empirical material was the subject literature as well as data and information from many institutions, including the Central Statistical Office, Eurostat, and the National Bank of Poland, the European Central Bank and the Polish Ministry of Health. The methods of comparative and descriptive analysis as well as regression analysis were used to assess the scale of the negative effects of COVID-19.

Key words: *economic effects, COVID -19, rural areas, development, market, local society*

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PUBLIC-PROVATE PARTNERSHIP FOR IMPROVEMENT OF SUSTAINABLE DEVELOPMENT INFRASTRUCTURE IN RURAL AREAS

Natalia Stauraskaya¹, Denis Parshukov², Lyudmila Stepanova³

Abstract

Provision for territorial development, enhancement access to social services and economic goods is a governmental priority for sustainable development. Rural areas occupy more than 80% of the territory of the Russian Federation; still their population is less than 25% of the state's total. Over 60% of rural territories are located in extreme environments what causes difficulties for people's welfare. This research aims at outlining the rural needs in sustainable development infrastructure sites and selection of the modes of public-private partnership for their creation. The research methods are embraced by analysis of the official statistic data on the presence of social, engineering, household and manufacturing infrastructures in rural areas. Then, according to the assessment results, the list of recommended infrastructural items and recommended modes of public-private partnership has been created. The authors argue that the most preferable scope of public-private partnership implementation is drawing investments into development of transportation infrastructure, diversification of rural economics, and enhancement of social entrepreneurship in rural areas.

Key words: *sustainable territorial development, rural area, public-private partnership, infrastructure.*

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PLENARY SECTION

Second day, 17th December 2021

POST-PANDEMIC TRAVEL INTENTIONS OF URBAN AND RURAL POPULATION

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Abstract

The COVID-19 pandemic brought the whole world into a crisis period that caused sudden changes in the behavior and reactions of the entire world economic system, and the tourism industry was particularly affected. Such changes have especially led to behavioral changes in plans and actions related to travel and tourism. Considering this, the paper aims to investigate issues of perception and planned behavior of urban and rural residents in the Republic of Serbia after the COVID-19 pandemic. A questionnaire was applied and distributed through the Google Questionnaire Application. Data collection and processing was performed in SPSS statistical software package. The results of the research showed that the pandemic only temporarily stopped decisions regarding tourism and travel, and that they will be compensated immediately after the pandemic ends.

Key words: *tourism, COVID-19 pandemic, behavior, plan, Serbia, tourists*

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SELECTION OF SUSTAINABLE SUPPLIERS IN AN AGRICULTURAL COMPANY USING THE MULTI-CRITERIA DECISION MAKING METHOD

Miroslav Nedeljković¹

Abstract

The decision on selecting a supplier in a business entity represents a great challenge for decision makers. The aim of this paper is to demonstrate the success of deciding on the most suitable supplier in an agricultural company by applying the fuzzy logic of multi-criteria decision making methods which is based on predefined criteria that included a set of criteria related to supplier sustainability. The subject of research and analysis was a local agricultural company on the territory of the municipality of Bijeljina, which in its everyday business encounters the problem of choosing a supplier of various raw materials. The results of the conducted research showed that after the ranking of the five alternatives offered by the experts in the field, the first supplier is the closest to the ideal solution.

Key words: *multi-criteria decision making, fuzzy logic, TOPSIS method, suppliers*

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QUALITATIVE EVALUATION OF FINANCING PROGRAMS IN AGRICULTURAL SECTOR IN SERBIA

Olivera Jovanović¹, Jovan Zubović²

Abstract

The incentive system is a part of agricultural policy. Having in mind that the activities of agrarian policies are usually directed towards European integration and harmonized with the requirements of international organizations that provide financing of economic development, policymakers in Serbia are faced with great challenges. These include preserving social stability, improving living standards, achieving balanced regional development, and achieving food security. At the same time, they are facing environmental issues and pursuing the concept of sustainable development. This paper provides an empirical analysis of contemporary agricultural financing programs in Serbia in order to determine their efficiency and to estimate the effects on agricultural production. The empirical analysis is based on qualitative indicators calculated using publicly available secondary data in the period 2013-2019. The research evaluates subsidies, as an important part of agriculture policy, in order to identify their advantages and disadvantages. Based on the results of qualitative analysis and concluding remarks, recommendations for agricultural policymakers have been formulated.

Key words: *agriculture, incentives, agricultural policy, qualitative indicators, Serbia*

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AGRICULTURAL POLICY AS AN ELEMENT OF SUSTAINABLE RURAL DEVELOPMENT OF THE REPUBLIC OF SERBIA

Petar Veselinović¹, Danijela Despotović², Lela Ristić³

Abstract

A key segment of economic policy focused on the development of agriculture and cooperatives pertains to agricultural policy. Agricultural policy is most commonly defined as a set of economic policy measures defining a strategy for achieving goals concerning integrating the agricultural sector into the development of the national economy and the international division of labor.

One of the fundamental directions of the agricultural policy of the Republic of Serbia should be the revival of agricultural production and villages. In order to achieve these goals, the state, through agricultural policy measures, should support more intensive production and provide the basis for generating higher income in agribusiness. Economic measures to direct the development of the rural sector in the Republic of Serbia are of a financial nature and relate to the tax system and tax policy, pricing policy, investment and credit policy, foreign trade policy, insurance policy and commodity reserves. In addition, it is necessary to concentrate agricultural policy measures on rural areas, that will improve living standard and rural economy by means of investing in agricultural production and processing equipment, construction and renovation of rural infrastructure, education and training of rural population, improvement of rural tourism and cultural values.

Key words: *agricultural policy, rural development, government support, agricultural loans, exports.*

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ARABLE FARMS' PERFORMANCE IN THE REPUBLIC OF SERBIA – DOES THE FARM SIZE MATTER?¹

Saša Todorović², Sanjin Ivanović³

Abstract

Agricultural production in the Republic of Serbia is characterised by the dominance of small family farms. The aim of this research is to evaluate arable family farms' performance and to examine the relationship between farm performance and farm size. Three groups of indicators (total input to total output ratio, financial stress and relative importance of subsidies) were analysed according to the farm size to capture the overall farm performance. Farm-level data (from the database created as a result of an annual survey on a representative sample of farms) were used to describe economic and structural characteristics of arable family farms from lowland area of the Republic of Serbia. The farms were divided into three groups, depending on the size of their arable land. The analysis performed for the period 2009–2020 revealed that total input to total output ratio and relative importance of subsidies are the most favourable for the biggest farms. On the other hand, the biggest farms are exposed to an increased level of financial stress.

Key words: farm performances, farm size, arable farms, family farms, Republic of Serbia.

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- 1 This paper is a result of the research funded by the Ministry of Education, Science and Technological Development of the Republic of Serbia based on the agreement between the Ministry and the Faculty of Agriculture, University of Belgrade (Contract No. 451-03-9/2021-14/200116), on the realisation and financing of scientific research in 2021.
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THE IMPORTANCE OF SMART AGRICULTURE FOR THE IMPROVEMENT OF AGROECOLOGY IN RURAL ENVIRONMENTS IN POST - COVID CONDITIONS

Snežana Janković¹, Divna Simić², Miodrag Veseli³, Slađan Stanković⁴

Abstract

Realizing the importance of smart agriculture for the improvement of agroecology in rural areas in post-Covid conditions, the Belgrade Chamber of Commerce and Industry formed the Council for Smart Agriculture at the beginning of 2021. The goal is to improve agroecology by connecting institutions dealing with the development of smart technologies and the availability of various solutions and databases for the application of smart agriculture. In this way, the application of modern information and communication technologies is encouraged, such as precision machines, devices, objects of unmanned aerial vehicles, drones, robots and the like on agricultural farms. Modern knowledge through trainings and availability of databases reaches family farms dealing with agricultural production, rural tourism and on-farm processing faster and easier.

Key words: *smart agriculture, environment, improvement, COVID*

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SERBIA'S FOOD SELF-SUFFICIENCY IN COVID-19 PANDEMIC

Tatjana Brankov¹

Abstract

In the recent food history, the periods when the concept of self-sufficiency was widely accepted in both developed and developing countries alternated with periods of its rejection, causing a frequent debate. Opponents of the concept marked it as a 'nonsense', 'wrong lesson', 'risky', 'harmful to agricultural production', 'distortive to market signals', 'environmentally risky', 'diminishing for farmers income', etc. Proponents suggest it as a means of decreasing undernourishment prevalence, a means of boosting farmers' income, straightforward way to increase food security, and so on. After almost four decades of moving away from national food self-sufficiency policy to a trade-based approach of national food security, during which, under the rules of liberal trade policies many developing countries became net food importers, recent COVID-19 crises returned to focus interest in food self-sufficiency. In this paper, we estimated Serbia's ability to fulfil feed demand of its population. We conclude that Serbia belongs to one-third of the population that could feed itself from local production.

Key words: *food self-sufficiency, COVID-19, local production*

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BOOK OF ABSTRACTS

EFFECT OF ANTI-COMPETITION AGREEMENTS ON AGRICULTURAL FERTILIZERS

Adela Sorinela Safta¹, Lavinia Popescu²

Abstract

The paper empirically investigates the overall relationship between plant protection products in agricultural production. A variety of studies show that organic farming tends to reduce fertilizer consumption, the paper provides data on the economic effects of growing fertilizer sales, so we ask serious questions about the reason for the growth, which generates this growth, need or excessive consumption. Fertilizer management and monitoring according to the CAP, applying the right amount of nitrogen at the right time as the basic requirement for good fertilizer management. The paper also investigates some effects of climate change in agriculture, research shows that carbon absorbers are as important as reducing emissions, being closely interdependent.

The Results and information on the efficiency of agricultural practices of high-performance farms ready to provide sustainable food supply systems, provide the confidence to stimulate the consumption to organic products to ensure the body healthy agricultural products. This article clarifies in a subject and predicate approach, the case of infringement of competition law in the case of imports of nitrogen-based fertilizers, in this case urea, as a product used in agriculture.

Key words: *sustainable, fertilizers, agricultural, anti-dumping*

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ASSESSING THE CURRENT SITUATION OF THE ROMANIAN WHEAT MARKET

Lăcrămioara Alina Drăcea¹, Daniela Mărăcine²

Abstract

The Romanian grain market has seen an astonishing increase in both volume and value in the last decades, being considered one of the most productive and important sector in the Romanian economy. This increase was especially seen in the wheat chain, where the quantity exported is approximately 4 times bigger than imported and the value up to 7 times higher.

Regarding the increase in demand for wheat marked by the modernization and development of the agricultural sector, it is necessary to study the evolution of the market and an X-ray of the current situation in Romania, materialized by an analysis based on the indicators of performance of the chain.

This paper is based on a review on the national wheat market functioning and aims to offer a complete picture of the country potential, by analysing the data provided by NIS, TRADE MAP and INTRACEN.

Key words: *wheat, production, import, export, trade balance, Romania.*

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DIRECT PAYMENTS IN AGRICULTURAL SECTOR, 2014-2020

Ana Maria Bolohan¹

Abstract

Climate change is a global challenge with a significant effect on our lives, and the EU has set ambitious goals in response to this phenomenon. The integration of climate change issues is based on these objectives and involves the integration of climate action into EU policies and funds, as well as the commitment to devote a certain percentage of the EU budget to combat climate change. Tracking climate-related spending means measuring financial contribution from various sources to climate goals.

In 2019, the Commission reported that the EU was about to reach, for the period 2014-2020, a share of 19.7% of the EU budget to be devoted climate-related spending. Through therefore, it continues to overestimate the contribution of certain policy schemes common agricultural measures to combat climate change. In this context, it points out the risk that certain expenditures in the field of agricultural policy and in the field of agricultural policy cohesion to accelerate climate change. The research sector has lagged behind in what on achieving its ambitious goal of spending on climate-related spending 35% of the budget.

Commission considered that the most important contribution to the objective was to Climate-related spending set for the EU budget will come from both the agricultural sector from direct payments as well as from rural development. The Commission shall quantify this contribution to 102.8 billion euros for the MFF 2014-2020, which represents 50% of the expenditures related to the climate during this period.

Key words: *common agricultural policy, direct payments, rural development, climate change, EU budget*

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TRENDS OF RURAL DEVELOPMENT OF THE ROMANIAN SPACE

Andreea Daniela Giucă¹, Maria Cristina Sterie², Gabriela Dalila Stoica³

Abstract

Currently, the economic development of the rural area in Romania faces multiple social and economic problems, the concerns regarding the identification of solutions and methods for solving them being numerous, rural development thus becoming a strategic priority for the European Union.

This paper aims to perform an analysis of the evolution of the Romanian rural area in socio-economic terms in the period 2015-2020, using data provided by the National Institute of Statistics. The statistical data cover aspects regarding the participation of the rural population in economic activity, through the structure of the active population, the employed population and the employment rates of the rural population, as well as the number of registered unemployed, which contribute to shaping an overall picture.

Key words: *rural area, population, economic, Romania*

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EVOLUTION, CURRENT STATE AND PERSPECTIVE OF THE DEVELOPMENT OF THE WALNUT SECTOR OF THE REPUBLIC OF MOLDOVA

Bajura Tudor,¹ Turețchi Viorel,² Alexandru Ceban³

Abstract

Due to its geographical location, fertile soil and favorable climatic conditions for walnut cultivation, the Republic of Moldova is part of the ten most important producers of walnut kernels worldwide. The dynamic demand for the product in both the domestic and foreign markets opens up favorable economic prospects for domestic producers. At the same time, increasing global competition between the main nut producers, high demand of the final consumer require local producers to take a new approach in terms of technology, logistics and marketing. In this context, it is necessary to realign the walnut sector of the Republic of Moldova to international standards. This means the introduction of new production technologies, including: transition from the extensive to the intensive cultivation system, introduction into the agricultural circuit of new varieties of superior quality, further processing of the walnut harvest and obtaining of finished products with high economic value.

Key words: *agriculture, walnut sector, global production, production technologies.*

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OPPORTUNITIES FOR SERBIAN PDO FOOD PRODUCTS AT DOMESTIC AND FOREIGN MARKETS

*Biljana Panin*¹

Abstract

Protected designation of origin products can contribute both to producers and consumers, as well as to rural development. Protected designation of origin products could bring many benefits for the country, rural population and rural development in Serbia. This paper present analysis for potential of two Serbian products, with geographical indication, in the market in Serbia, but also in foreign market – in Italy. Research showed that market opportunities for two Serbian products exist both in Serbia and in Italy. But consumers have different attitudes and interests towards two products, and also different willingness to buy and to pay for these products.

Key words: *Protected designations of origin, rural development, market, Serbia, Italy*

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PROCESSING OF AGRICULTURAL PRODUCTS BY LYOPHILIZATION PROCEDURE¹

Bojana Bekić Šarić²

Abstract

Lyophilization is the process of removing water from a frozen product by drying, where the water from the frozen phase passes directly into the gaseous state, without turning into a liquid. In this way, easily perishable products are preserved, since the removal of water prevents the growth and reproduction of bacteria that would lead to their spoilage. Lyophilization as a way of food processing increases the shelf life of products, without the need to add artificial preservatives, while preserving their nutritional value. The lyophilization technology can be used in the processing of fruits, vegetables, bee products and other primary agricultural products, in order to obtain innovative healthy and safe agro-food products of high nutritional value. The aim of this review is to present the method of preserving fruits and vegetables by drying, with an emphasis on the process of lyophilization, as an innovative modern method of drying and processing of primary agricultural products.

Key words: *lyophilization, preservation of fruits and vegetables, innovative food products*

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MARKETING PUBLIC RELATIONS IN THE FUNCTION OF MARKET OPERATIONS IN CRISIS SITUATIONS¹

Boris Kuzman, Nedeljko Prdić, Anton Puškarić²

Abstract

Crises are such situations when it is not possible to do business objectively. As the oldest market institutions, marketplaces have a specific role in this state. The crisis itself threatens the business of the marketplaces and, ultimately, their survival. Marketplaces are places of daily gathering of people, so in addition to buying and selling products, they also have a social role. An example of a serious crisis at the global level is the „COVID-19” pandemic, which basically made the functioning and work of the marketplaces impossible. Observing such a situation, the aim of this paper is to establish relations with consumers and the rest of the public through the communication link in the conditions of crisis with the help of public relations marketing. The results show that the identity and image of the markets are the main advantage of their business and survival in crisis situations. The conclusion is that it is necessary to make the general public and specific target groups of importance interested for the work of markets based on marketing principles using modern information technologies and various types of personal communication with consumers.

Key words: *marketing public relations, marketplaces, crises, consumers.*

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- 1 This paper is a result of the research conducted within the framework of the agreement of the implementation and funding of scientific-research work in 2021 made between the Institute of agricultural economics, Belgrade and the Ministry of Education, Science and Technological Development of the Republic of Serbia, the registered Agreement number: 451-03-9/2021-14/200009.
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A NEW APPROACH TO THE PROMOTION OF RURAL AREAS IN CROATIA: AN EXAMPLE OF THE EVENT “SUNFLOWER OF RURAL TOURISM”

Dijana Katica¹, Ivo Grgić²

Abstract

Today's state area of Croatia was historically exposed to constant migrations of the population. The period of immigration alternates with the period of emigration, with different causes, extent and consequences of the changes, especially in rural areas. In addition to demographic changes in economic activities in rural areas are also significant, and agriculture is losing its former significance. In order to preserve the space, significant activities are underway to encourage the development of rural tourism, thanks to the benefits of Croatian membership in the EU and the generosity of EU funds. One of the important annual activities is the unique event “Sunflower of rural tourism in Croatia - Sunflower Award”. In 2020, the competition was divided in seven categories. Attention of the media and attention of others to the event helped many winners of the “Sunflower” award in further business activities.

Key words: *rural area, rural tourism, events, Croatia*

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STRONGER INVOLVMENT OF WOMEN IN THE DEVELOPMENT OF SERBIAN RURAL TOURISM¹

Drago Cvijanović², Tamara Gajić³, Dragan Vukolić⁴

Abstract

Rural tourism is an increasingly important form of tourism product in Serbia, but it is still not at an adequately developed level to measure the overall economic and social effects of its development. The authors of the paper approached the research of women's participation in the development of this form of tourism. The study was conducted in order to discover the importance and role of women in the development of rural tourism in Serbia. The survey was conducted in 45 households in Serbia engaged in the provision of tourist services, on a total sample of 338 respondents. Descriptive and multiple linear regressions were used to determine whether any of the above predictors could significantly predict the participation and impact of the female workforce in the near future. The obtained results show that most of the factors can predict the score on the criterion variable, which was the greater inclusion of women in rural tourism. The initial hypotheses have been confirmed, and the importance of the research certainly contributes to the scientific, social and economic segment of the development of rural areas in Serbia.

Key words: *rural tourism, development, women, Serbia*

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APPLICATION OF INNOVATIVE TECHNOLOGIES IN AGRICULTURE AS A PART OF THE SUSTAINABLE DEVELOPMENT OF SERBIAN RURAL AREAS

Goran Knežević¹, Vesela Radović², Slobodan Krnjajić³

Abstract

Sustainable rural development is vital to the economic and environmental viability of the Serbia. Serbian rural population relies on agriculture for their livelihoods. Making agriculture in rural areas sustainable and competitive is not an easy to achieve. Authors highlighted the new challenge for this goal. The European Commission withdraws chemicals for preventing sprouting of potato (Commission Implementing Regulation (EU) 2019/989). Faced with this demand, potato producers have to find a way how to stay competitive on a current market, and do not additionally harm already fragile environmental state. Authors in this article propose the use of essential oils for prevention the potato sprouting. Exploring different kind of essential oils to solve this problem, researchers obtained useful results. There is a new option to encourage use of essential oils in potato production. So, producers will avoid new significant production costs, stay in the competitive race to the production line, and enhance sustainable development of rural areas.

Key words: *rural areas, essential oils, sprouting of potato, agriculture, development.*

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SUSTAINABLE AND DEVELOPMENTAL SYSTEMS IN PRIMARY ORGANIC PLANT PRODUCTION

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Abstract

Surfaces under organic production are constantly increasing, in Serbia as well as in Europe and the World. Organic agriculture uses sustainable systems of production to prevent environmental pollution, enhance biodiversity and efficiently manage natural resources. The implementation of specific cultivation methods such as applying plant extracts and microbiological preparations leads to plant nutrients being secured faster and more efficiently. In field experiments, greater microbiological soil activity was recorded in the organic cultivation system. The increase of the abundance of microorganisms increases biochemical and enzymic activity, which influences the increase of soil fertility and biodiversity. A certificate for organic products is an important milestone on the path of realizing sustainable agriculture which is based on environmental protection paired with obtaining healthy products. The development of consumer awareness and the values of organically produced food will lead to the further increase of organic plant production surfaces.

Key words: *biodiversity, microorganisms, organic production, sustainable agriculture*

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ECONOMIC EFFECTS OF VEGETABLE PRODUCTION AND PROCESSING ON THE AGRICULTURAL HOLDING¹

Jonel Subić², Svetlana Roljević Nikolić³, Željko Dolijanović⁴

Abstract

As an agricultural holding in the form of legal entity, cooperatives have a significant role in the production, processing and trade of vegetables in the Republic of Serbia. In order to obtain safe and competitive agricultural products, cooperatives strive to provide greater flexibility to market changes and faster adaptation to occurred changes. Operating in this way has been imposed the need to achieve a higher degree of technological capacities utilization, to fine tune the optimal structure of production and obtain highly valorised products. In other words, cooperatives should invest in products obtained by processing, which will be valorised the most and which will achieve the highest prices (i.e. the maximum economic effect per invested financial unit). Along to previously mentioned, research is focused to the economic effects of a cooperative business operation which intends to organize environmentally friendly production of tomatoes and cucumbers, partly in the open field (on area of 3 ha) and partly in a protected area (greenhouses with total size of 3 ha and 60 are), while it applies modern agro-technic's and food safety production measures. Besides, in order to achieve safe and continuous market realisation of tomatoes and cucumbers, cooperative will establish processing and sale of processed vegetables.

Key words: *economic effectiveness, investments, public grants, vegetables, agricultural holding.*

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POVERTY REDUCTION AND RETENTION OF YOUNG PEOPLE A CONDITION FOR SUSTAINABLE RURAL DEVELOPMENT

*Jorde Jakjimovski*¹

Abstract

Rural areas offer low paying jobs. Low incomes have long been a blessing in disguise for rural areas. At the same time, the rural population experiences a higher poverty rate and a significantly lower level of income compared to the urban population. There is a consistent link between low income and migration. Research to date has shown that people are attracted to areas where earnings are higher. In rural areas live people with the lowest level of wealth and education, ie many people who are willing to move. The future of rural areas depends on two factors: attracting higher-wage industries and improving agricultural productivity. The paper deals with the socio-economic processes and the quality of life in the village.

Key words: *rural areas, low income, poverty, unemployment*

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LOCAL INITIATIVE GROUPS AS MOTIVATORS OF LOCAL DEVELOPMENT IN RURAL AREAS OF BULGARIA

Julia Doitchinova¹

Abstract

The aim of the report is to analyze the development of local action groups as a form of public-private partnership and to assess their role in the multifunctional sustainable development of rural areas.

The object of analysis is the process of creation and dissemination of local initiative groups and local fishing groups during the two programming periods of our country's membership in the European Union.

The subject of analysis is the type of implemented projects and the directions of impacts for the development of rural areas - economic, social and environmental.

For the purposes of the analysis, statistical data and qualitative assessments are used on the importance and impacts of the local initiative groups from a survey of the opinions of experts in the field of rural development from all districts of the country (NUTS 3 level).

Key words: *local action group, rural development*

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ECONOMIC EFFICIENCY OF INVESTMENTS IN COW-CALF PRODUCTION IN THE REPUBLIC OF SERBIA¹

Lana Nastić²

Abstract

Value of livestock production in the Republic of Serbia is rather low comparing to value of plant production. At the same time, cattle production is the most important concerning milk production, while level of beef production is low (production of pork is much important comparing to beef production). One of the ways to increase beef production in the Republic of Serbia is introduction of cow-calf production system. This production system has some advantages comparing to usual beef production system, such as low level of investments, use of available natural resources etc. To evaluate investments in cow-calf production, author used net present value, internal rate of return and payback period. Besides, level of profit was determined, depending on existence of state subsidies for this production. The results of the analysis indicated that economic efficiency of cow-calf production in Serbia significantly depends on level of state subsidies.

Key words: *cow-calf production system, investments, net present value, subsidies*

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POSITION AND PROTECTION OF THE INTEREST OF THE HOLDER OF THE RIGHT OF PREFERRED PURCHASE OF AGRICULTURAL LAND¹

Ljiljana Rajnović², Snežana Cico³

Abstract

The right of pre-emption is a way of acquiring property rights on real estate, but it is essentially different from acquiring property rights on other grounds. The right of pre-emption is established by law primarily with the aim of not shredding the plots unnecessarily, so the owner of agricultural land during the sale is obliged to offer the agricultural land to the person who has the first pre-emption. If that person is not interested in buying agricultural land, the seller can sell it to a third party, but not on more favorable terms. Failure to comply with this legal obligation leads to a sanction that can be reflected in the annulment of the contract of sale with a third party who is not the holder of the right of pre-emption. Although this obligation is established by law, in practice there are frequent cases of playing the right of pre-emption of natural and legal persons, while the same right of the state is respected, which puts other holders of pre-emptive rights in an unequal position. In this paper, the authors analyze the position of the holder of the right of pre-emption and seek to find solutions to this problem.

Key words: *pre-emption right, purchase offer, land seller, pre-emption right holder, position of pre-emption right holder, protection of pre-emption right.*

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SUSTAINABLE AGRICULTURE – A BIBLIOMETRIC ANALYSIS

Maria Cristina Sterie¹, Andreea Daniela Giucă², Gabriela Dalila Stoica³

Abstract

Raising awareness of sustainable farming and the importance given to the environment has led producers to move towards sustainable agriculture. The aim of the paper is to highlight the importance of sustainable agriculture and to highlight the connection with other themes. In order to achieve this goal, a specialized literature and a bibliometric analysis were performed or revised. The results show that sustainable agriculture was becoming increasingly important, being a topic included in the Common Agricultural Policy and increasingly common among research.

Key words: *sustainable agriculture, bibliometric analysis, Romania*

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ECONOMIC ASPECTS OF INVESTMENT IN WHEAT PROCESSING¹

Marko Jeločnik², Jonel Subić³, Velibor Potrebić⁴

Abstract

In order to strengthen the competitiveness of agriculture, there come to notable increase in state support for investments in improvement of production and processing on individual or joined agricultural holdings in Serbia. Accordingly, paper is focused to assessing of economic effectiveness of investments in processing of wheat in selected agricultural cooperative. The business idea and cooperative needs assume the modernization and completion of the facilities for the wheat processing and production of mill products (human and animal flour). There is the plan to purchase electromechanical modular truck scale, a steel silo for wheat storing, stretch machine, equipment for quality control of wheat that enters the milling process and equipment for increasing the mill capacity and finished products quality. It is expected that with this investment, the cooperative would directly affect the strengthening of its competitiveness, while additional employment would indirectly affect the development of the local community. Considering that realization of the business idea relies partly on own funds, and partly on public incentives, in paper was made an assessment of the economic effectiveness of investment in purchase of equipment used in mill industry.

Key words: *economic effectiveness, investments, incentives, wheat, flour, agricultural cooperative.*

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TREATMENT OF BIODIVERSITY IN THE EUROPEAN CURRENT CONTEXT

*Mihaela Țifui*¹

Abstract

Biodiversity loss is the second environmental challenge of the third millennium after climate change. Although significant progresses were made in policy development, biodiversity loss is continuing. The necessity of quantitative assessment becomes more and more obvious for a harmonious performance of the science-policy interface. The paper addressed this topic by reviewing the most recent European progresses in indicator development. Thus were discussed the milestones of nature conservation policy in Europe as background and the first set of indicators proposed within the SEBI initiative. This set was proposed considering CBD and EEA indicators and also data availability and will be further developed considering the policy relevance.

Key words: *biodiversity, indicators, ecosystem management, EU, SEBI*

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QUANTIFICATION OF MAIN NATURE-BASED RESOURCES IN RURAL TOURISM AREAS

Milica Luković¹, Marija Kostić²

Abstract

Agriculture is dominant economic activity in the traditional concept of rural areas functioning, but decade back multifunctional concept of rural areas is characteristic for EU countries and worldwide. One aspect of multifunctionality is sustainable tourism based on natural resources. Nature-based tourism contributes to economic diversification in rural areas. The main objective of this study is to determine the potential rural sites and their suitability to nature-based tourism demands. This study quantifying and ranking main nature-based resources as indicators of suitability in rural areas. The whole set of the widely recognized nature resources important for nature-based tourism development divided into two groups: natural attractive features (landscape, protected sites, geomorphological and hydrological objects) and “eco-friendly” facilities suitable for e.g. walking, climbing, bird watching, photo-safari. Those factors were selected according to the literature sources. Using the analytic hierarchy process (AHP) method it was calculated, quantified and ranking list of the most suitable natural features according to criteria weight to the selected site. Paritally used principles of SMCE- Spatial Multi-Criteria evaluation method results were visually represented on the map using DIVA-gis software.

Key words: *natural resources, rural areas, nature-based tourism*

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SITUATION OF BEEKEEPING IN SERBIA AND SERBIAN DANUBE REGION IN THE FRAMEWORK OF SUSTAINABLE RURAL DEVELOPMENT¹

Nada Mijajlović²

Abstract

Beekeeping is an economic branch in Serbia with a powerful potential within the framework of sustainable agricultural rural development. This paper deals with the state of beekeeping in the Republic of Serbia. A special emphasis and goal of the paper is to present an analysis of the state of beekeeping in the Serbian Danube region. Beekeeping in Serbia is an economic branch regulated by legislation. Within agricultural diversification, one of the profitable activities of agricultural farms is beekeeping. Honey production is increasing and with the high quality of honey, Serbia is achieving an increasing volume of honey exports on the very demanding European and world honey market. Given the significant quantities and current price, honey can become a significant source of income for agricultural farms engaged in beekeeping.

Key words: *beekeeping, honey, sustainable rural development*

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ECONOMIC SUSTAINABILITY OF PEPPER PRODUCTION IN THE CONDITIONS OF APPLICATION OF IRRIGATION¹

Nataša Kljajić², Zorica Sredojević³

Abstract

The subject of research in this paper is the production of paprika in the conditions of irrigation application on an area of one hectare. Considering the available production capacities and technologies of vegetable growing on selected family farms in the territory of the territory of Smederevo (Republic of Serbia), an economic model of growing pepper type babura, using drip irrigation was compiled. Taking into account that product placement is ensured, the goal is to investigate the economic viability of the production of this vegetable crop, as the main source of income for a four-member family household. The average yield of paprika is 48 t/ha and is divided into two classes. The calculation procedure determined revenues from the sale of peppers for both classes in the amount of 10,400.00 €/ha, production costs in the amount of 5,700.00 €/ha and the financial result in the amount of 4,700.00 €/ha. The break-even point is reached at a yield of 52% of the average yield of paprika, i.e. at a yield of about 25 t/ha. Based on the established economic parameters for one production cycle and taking into account the annual oscillations of prices and yields, the cash flow for the five - year period is projected. Using static methods, the amounts of net present value, the payback period and the profitability rate of pepper production were determined. According to the established indicators, such production is justified and economically sustainable, which provides a stable source of income for growers for a longer period.

Key words: pepper, irrigation, economic justification, sustainability of production.

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ANALYSIS OF TOURIST TRAFFIC IN TOURIST AND AGRITOURISM GUESTHOUSES. CASE STUDY: VRANCEA COUNTY, ROMANIA

Enache Turek Rahoveanu Petruța¹, Manea Drăghici²

Abstract

Rural tourism plays an important role in Romanian tourism, being an attractive form for many tourists to spend their holidays, generally motivated by the desire to return to nature, traditions and customs that still persist in rural areas.

Rural tourism refers to all activities undertaken on the occasion of spending free time in rural areas, accommodation can be done both in the farm, farm or other accommodation: inns, stops, hotels, etc.

Vrancea County has a vast tourist potential due to its geographical location, relief, favorable climate and cultural heritage on its territory.

Following the centralization of the data, we analyzed the tourist traffic in Vrancea County, taking into account the following aspects: number of overnight stays, number of arrivals, accommodation capacity.

The analysis was performed based on statistical indicators, namely: arithmetic mean, standard deviation, coefficient of variation, annual growth rate.

Key words: *tourism, agrotourism, tourist potential, agrotourism pension, statistical indicators*

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COMPARATIVE ANALYSIS BETWEEN 2008-2014 AND 2015-2020 OF MILK CONSUMPTION AND PREPARES FROM MILK

Turek Rahoveanu Petruța¹, Ilie Diana Maria²

Abstract

In Romania, the dairy sector is significant as an important element in the national economy, because raising dairy cows is a traditional occupation in rural areas, especially in mountainous areas. Being one of the most complex foods, milk is beneficial for the human body in physical and intellectual development, increases resistance to disease, etc.

In this paper we performed an analysis of milk consumption, where we will present the evolution of milk consumption and milk preparations. Fluctuations in milk consumption and milk preparations are driven by rising prices and production capacity. According to statistical data, milk and milk products have the highest share in the average net daily consumption per capita, respectively 30%, followed by vegetables, with 17% and cereals, with 16%.

Although various programs have been set up at national level to encourage milk consumption, the number of consumers is declining.

In this analysis we used statistical, technical and economic indicators at analytical and synthetic level.

Key words: *consumption, milk and milk preparations, annual growth rate, coefficient of variation*

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PERSPECTIVE FOR SUSTAINABLE DEVELOPMENT OF RURAL TOURISM IN THE MUNICIPALITY OF KLADOVO¹

Predrag Vuković², Slavica Arsić³

Abstract

Municipality of Kladovo is located in Eastern part of the Republic of Serbia. It has huge potential for development different types of tourism products and to offer them to the market. The attitude is based on reach natural and anthropogenic potential tourist attractions that municipality of Kladovo poses and that can be put in the function of development tourism. In municipality of Kladovo exist 21 villages which have respectable potentials for development rural tourism. In some of them rural tourism have been starting to developing. For the reason that rural tourism is in initial phase it is important to follow the rules that science prescribe. One of them is sustainable development. That is in coordination with concept of rural tourism that cannot exist if it is not in correlation with local ambience and local community. The aim of the article is to show huge potential that municipality of Kladovo possess for development rural tourism. Also, in the article it would be shown possible tourist strategy and policy that can bring success on the market.

Key words: *sustainability, development, rural tourism, destination.*

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SOLAR ENERGY AS A RENEWABLE ENERGY SOURCE¹

Simo Stevanović², Snežana Stevanović³

Abstract

The amount of solar energy that reaches the surface of the Earth depends of the intensity of sunrays (which is in connection with the latitude) and the day length (depending on the season of the year), which on average is around 1000 W/m² a day. Which amounts are in question is indicated by the data showing that the annual amount of the solar energy that reaches the surface of the Earth is about 15000 times as great as the total annual needs of the world.

The last 15 years have recorded unbelievable progress made in increasing the use of solar energy over 50 times as great, especially so with installed powers of the photovoltaic technology. The progress made is, first of all, a consequence of the growth of ecological awareness throughout the world and the state support to the use of renewable energy sources. The contribution of price reduction and the efficiency of photovoltaic panels and the other electronic equipment used in solar energy production is not negligible at all.

Key words: *renewable energy sources, solar energy, photovoltaic systems, energy efficiency.*

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GREEN AGENDA FOR THE WESTERN BALKANS-GENERATOR OF SUSTAINABLE AGRICULTURAL DEVELOPMENT OF THE REGION

*Svetozar Krstić*¹

Abstract

The European Union has decided to actively fight against climate change and environmental pollution. To that end, it adopted the Green European Agreement, which is becoming its key document in the fight against climate change. The EU is aware that it cannot act alone in this fight and that the most critical regions are in the immediate neighborhood. Therefore, it allocated funds and proposed to the leaders of the Western Balkans the adoption of the Green Agenda for the Western Balkans, accompanied by significant financial support. The Western Balkans region is extremely sensitive to climate change, because the region's economies are based on agriculture, forestry and tourism. Although the measures have not been elaborated in detail and the time frame for their implementation has not been specified, the conclusion is that the Green Agenda for the Western Balkans will be a generator of sustainable agricultural development in the region.

Key words: *agriculture, rural development, sustainability, climate, environment*

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EU-28 FARM SUSTAINABILITY ASSESSMENT THROUGH DATA ENVELOPMENT ANALYSIS OPTIMIZATION

Veselin Krustev¹, Bozhura Fidanska², Bozidar Ivanov³

Abstract

The various main emphases regarding sustainability in agriculture are clarified and summarized in a broader definition, according to which conceptually agriculture should be economically efficient, environmentally compatible and socially responsible.

As a result of the accession of every Member State of the EU, its agricultural holdings have been undergoing a significant transformation. This reflects on the economic size and furthermore on the farms sustainability. This study aims to find out and analyze the connection and characteristics between the economic size of farms and changes in the sustainability and to illustrate the EU differences between member states.

In order to handle the complication in evaluation of sustainability, recently many studies have been focused on the construction of a composite sustainability indicator using an optimization modelling. The elaborated and used approach for evaluating sustainability is the technical sustainability method, as a multicriteria group of indicators are selected covering the three main pillars of the concept. The DEA model is an instrument that facilitates the implementation of the technical assessment of sustainability, normalizing the primary data and figures and ranging the countries depending on predefined criteria, which might be used as a technical sustainability scoring. The data for carrying out the analysis is the FADN, which allows comparing the member states due to harmonized and common applied indicators through a certain time period. The issue of sustainability is an important concept, which significance enhances the new goals of the EU and the world society to reduce the greenhouse emission and to undertake more measures for environmental protection. It will directly affect the agricultural holdings, which may receive subsidies for the foregone costs and actions to contribute to these goals or be forced and regulated to comply. The EU funding requires the EU farms to be market-oriented and to be actual farming units, which might exclude some of those holdings that fulfill the environmental friendly practices but are set aside from subsidy schemes.

Key words: *Agricultural Holdings, Sustainability, Technical Sustainability Assessment*

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THE BEGINNINGS OF THE LEADER APPROACH IN SERBIA¹

Vesna Paraušić²

Abstract

Serbia has officially started implementing the Leader approach in 2019, by adopting an appropriate rulebook for implementing this national measure and by announcing the first public call for support programs related to the preparation and implementation of the local rural development strategies. Paper analyses the results of the first public call for supporting preparation of the local rural development strategies. The aim of this paper is analysis local communities' interest for creating partnerships, territorial distribution of formed partnerships, as well as the degree to which formed partnerships have met Ministry of Agriculture, Forestry and Water Management criteria for their recognition and financial support for preparation local rural development strategies.

Key words: *Leader approach, territorial partnerships, local rural development strategy, national support measure, Serbia.*

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PROMOTING GENERATIONAL RENEWAL IN SERBIAN AGRICULTURE¹

Vesna Popović², Branko Mihailović³, Katica Radosavljević⁴

Abstract

Actual transition towards sustainable food systems, based on innovation, digitalization, diversification and entrepreneurship, needs young, motivated and skilled farmers capable to manage challenges and take risks. However, delayed succession and serious resource, infrastructure, economic, sociocultural, knowledge and administrative barriers discourage young farmers from engaging in the farm business. In 2018, only 3.3% of Serbian farms were managed by farmers younger than 35 while 39.1% of farm managers were 65 and over. Through a literature review and secondary data from the national and EU statistics, documents and reports, the paper deals with young farmers and their farm structures, and drivers and motivations of young people to engage in agriculture. The focus of study is on new business and entry models and support schemes for addressing entry barriers and inspiring young people to takeover/start and develop their farm business and respond to societal demands, from quality food to healthy environment and vibrant communities.

Key words: *young farmers, drivers and motivations, entry barriers, business models, entry models, support schemes*

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THE ROLE OF CROP RECEIPTS IN AGRICULTURAL FINANCING¹

Vlado Kovačević²

Abstract

Aim of this paper is to evaluate importance of crop receipts for financing the agricultural production. Crop receipts systems are based on additional guarantees to creditors that agricultural products still in the phase of the production will be easily accessed by the creditors in the case of the borrower's default. Based on successful Brazilian experience, crop receipt system was established in Serbia in 2011. Methodology used in this paper is descriptive statistics, literature review and comparative method. The analyze is showing low volume of the crop receipts in the period 2011-2020 in Serbia. The main reasons for deviation from the expected results are in small size of farms, lack of crop receipts standardization, lack of the National bank support by adequate rating of the loans against crop receipts, lack of crop receipts promotion and absence of the agrarian policy supports for crop receipts.

Key words: *Crop receipts, Agricultural financing, Pre-harvest financing, Agrarian receipts*

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STUDY ON THE IMPACT OF CAP PAYMENTS ON THE ROMANIAN RURAL SPACE

Voicilă Daniela Nicoleta¹, Petre Laurențiu Ionuț², Dumitru Eduard³

Abstract

The European Union, through the Common Agricultural Policy (CAP), has initiated a series of financial supports aimed at reducing socio-economic disparities in rural areas. Romania, like the other member countries, benefited from the financial support granted with the accession to the EU in 2007. The present paper aims to study the impact of the CAP on rural areas. Using the quantitative analysis, the relationships between the allocated financial support and the indicators that characterize the level of wealth in the rural area were determined. The study used FADN statistics for the period 2007-2019. By identifying the links, the contribution of the financial aid within the CAP on the development of the Romanian rural area can be ascertained.

The continued support of complementary financial allocations for the rural environment or the need to stimulate economic activity and support the standard of living of the population, thus contributes to increasing the sustainability of rural areas.

Key words: *financial support, variable, impact, rural area*

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INCENTIVE MEASURES IN VITICULTURAL AND WINE PRODUCTION OF THE REPUBLIC OF SERBIA ¹

Zoran Simonović², Nikola Ćurčić³, Biljana Grujić Vučkovski⁴

Abstract

In this paper, we wanted to give an overview of the current situation in the agricultural policy of the Republic of Serbia, special to the production of grapes and wine. In that sense, we have given a brief overview of the current situations at the policy agrarian of the Republic of Serbia. We have noticed that in the last few years, there has been progressing in the system of providing incentive funds, primarily thanks to the group for fruit growing and viticulture of the Agriculture of Ministry, Forestry, and Water Management. In that sense, in the continuation of the paper, we tried to give a brief overview of the incentive funds allocated for rural development. We have paid special attention to incentives related to viticulture and wine production

Key words: *agricultural policy, incentives, viticulture, winemaking, Republic of Serbia.*

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