

Summaries

of scientific publications

by Chief Assistant Dr. Petia Hristomirova Branzova,

submitted for participation in a competition for the academic position of "Associate Professor" in the professional field 3.8. "Economics": Agricultural Economics at Economic Research Institute at the Bulgarian Academy of Sciences, announced in SG no. 33 / 29.04.2022

The summaries of the publications are in three research areas: the impact of climate change on agriculture and the economy of Bulgaria; organic farming and the Common Agricultural Policy; bio economy. The numbering in front of each publication corresponds to that of the list of publications and the reference for fulfillment of the minimum requirements of the Chief Assistant Dr. Petia Branzova. The publications are presented in the order of their publication.

➤ Research field - impact of climate change on agriculture and the economy of Bulgaria:

G.7.1. Branzova, P., (2015) "Assess the economic impact of climate change on wheat, barley, maize and sunflower in Southeast Bulgaria." *Trakia Journal of Sciences* 13.supl 1: 4-7, ISSN 1313-3551

The report studied the impact of the expected climate change in the period 2020-2050 on the yield of wheat, barley, maize and sunflower in southeastern planning region (Southeast region) of Bulgaria. Estimated economic impact of climate change on agriculture in the Southeast region. By stepwise regression analysis, predictors are defined and obtained regression relations for the average yield for each of the studied crops with climate model REMO and climate scenario A1B. Enter the evaluation of error forecast yields for each of the studied cultures and reporting its receipt of the final forecasts. Based on regression equations obtained an estimate for the change in the average yield of the studied crops. There are formed groups to change average yields of crops studied, the results are used as input data for economic assessment and analysis. On the basis of these groups was determined the optimal structure of production to Southeast region for the period 2020-2050. Determine the required amounts of fuel, fertilizers and agro-chemical equipment for the production of the studied crops in Southeast region for the period 2020- 2050 due to climate changes.

G.7.6. Branzova P., (2018) "ORCHARD AT SOUTH- EASTERN REGION OF BULGARIA – TRENDS AND PERSPECTIVES", *The Journal of Management and Sustainable Development*, 3/2018 (70), 50-54, ISSN 1311-4506;

The report makes a characteristic of the agrarian sector in the South-Eastern region of Bulgaria, with an emphasis on an orchard in it. The structure and production of the sector in the region are considered. Based on this, the findings and future prospects of the sector in the region are presented. The purpose of the report is to outline the picture of the place and role of orchard in the southeast region of Bulgaria.

G.7.7. Branzova, P., (2018), „Impact of expected climate change on the average yields of apples in the Southeastern Region of Bulgaria. Proceedings of the International scientific and practical conference “Bulgaria of regions”, 1, 293-300, ISBN: 978-619-203-229-6

The subject of this *report* is the impact of expected climatic changes by 2050 on the average yields of apples in the Southeast region of Bulgaria. The aim of the work is to investigate the empirical links between average apple yields and the climatic factors on which they depend. Based on these links to estimate the yields of apples in the Southeastern region by 2050.

V.1.1. Branzova, P., (2019), "Impact of climate change on the development of major fruit crops in South-Eastern region of Bulgaria", ROLL COMPANY, ISBN: 978-954-92236-8-2, 187

The monograph presents investments and their effectiveness in the development of major fruit crops in the South-Eastern region of Bulgaria in the context of the impact of climate change on their average yields. The main characteristics of the economic development of the South-Eastern region of Bulgaria are presented, the place is determined, the condition and the problems in the cultivation of fruit crops in the region are diagnosed. Different scenarios of the impact of climate change on the average yields of fruit crops have been developed. Based on the obtained scenarios and the changes in the size of the areas, the parameters of their production are outlined. The necessary investments have been determined and their efficiency for the development of the production of main fruit species in the region has been assessed. The hypotheses have been proved that: there are certain combinations of meteorological parameters (average monthly temperatures, average monthly precipitation and relative humidity), different for the individual fruit crops, the change of which is expected to affect their average yields; the projected changes in the average yields of the main fruit crops are likely to lead to changes in the scale of production; the forecasted changes in the production will allow to determine the need for investments for its development and their return. The results of the monograph allow us to draw the following main conclusions: first, the study of climate change is extremely important for the cultivation of major fruit species in Bulgaria. The presented results show that the effect of climate change can be expected to manifest itself better in the long run. Second, the proposed integrated approach, which links the effects of climate change on average yields and economic development of fruit production, illustrated for the production of major fruit species in the South-Eastern region of Bulgaria (2020-2030), argues the need the study should go beyond the "climate-average yields" link and move on to the fact that projected average yields can be used to determine the size of the area and the volume of production. This in turn allows to predict the necessary resources and expected production results. Thirdly, in the context of the impact of climate change on average yields, it is important that the investments needed to start and further develop fruit growing are in line with them.

G.7.11. Branzova P., (2019), „Sources for Financing of Investment Projects in Agriculture”, Journal "Economics and Management of Agriculture" / Bulgarian Journal of Agricultural Economics and Management, 64/1, p.56-69, ISSN 2534-9872

The report examines the main sources of funding for agriculture in Bulgaria and highlights the problems in their use. EU membership provides favorable opportunities for increasing the competitiveness and efficiency of Bulgarian agriculture. One of these opportunities is the funding provided by European funds and programs. Another possibility for financing the farmer is mainly through loans from commercial banks in Bulgaria. National funding from the budget is small, complementing the levels of European support. Different methods are used in the research - statistical analysis, synthesis and comparative method. The results are interpreted in the context of the considered scientific problems.

G.7.12. **Branzova, P.**, D. Ruscheva., (2019), "The impact of climate change and investment on fruit crop development." *Economic Thought journal* 6, 59-77, ISSN 2815-3189 (A copy of the separation protocol is attached)

A comprehensive approach is proposed in order to link the effects of the impacts of climate change on the average yields and the economic development of fruit production. Based on the available data on the characteristics of the South-Eastern region of Bulgaria and the main fruit crops grown there, a methodology for forecasting the average yields of apples, pears, peaches, nectarines and various sorts of apricots and plums is developed and tested, taking into account the changes in the climate. Based on the established empirical relationships between the average yields of crops and the climatic factors on which they depend, the expected yields by 2050 and the area required for growing each crop are predicted. The opportunities for fruit production are revealed. The levels of production and investment required for it are determined and their efficiency is examined.

V.5.1. Branzova P., (2022), "Economic Impacts of Climate Change on Bulgarian Agriculture in the Southeast Planning Region", ISBN 978-619-188-835-1, 179

The monograph is based on a defended dissertation for the award of educational and scientific degree "Doctor" in the doctoral program "Agricultural Economics", in the professional field 3.8. "Economics", in the Department of "Economics of Natural Resources", "Faculty of Business" at the University of National and World Economy, defended in 2014.

The study assessed the economic impact on Bulgarian agriculture of climate change in the South-Eastern Planning Region of Bulgaria (SEPR). A forecast is made for the change in the average yields of the studied crops. The interval of the forecast change of the average yields of wheat, barley, corn and sunflower in SEPR for the forecast period 2020-2050 has been determined. As a result of the impact of climate change. Five variants for the change of the average yields of the studied crops have been developed, the results of which have been used as input data for the economic assessments and analysis. Based on these options, the optimal structure of production in SEPR has been determined by compiling an economic-mathematical model.

➤ Research field- Organic Farming and the Common Agricultural Policy of the European Union:

G.7.2. Branzova P., (2015), "Bioproduction - Financial Assistance and Problems" Proceedings, Jubilee Scientific and Practical Conference with International Participation "AGROBUSINESS AND RURAL AREAS - CURRENT AND FUTURE DEVELOPMENT", Varna, 361- 368, ISBN 978-619-184-016-8;

The report presents the development of organic production, which is an important priority in agricultural development policy in Bulgaria and one of the highlights of the Common Agricultural Policy for the period 2014-2020. In addition, the economic problems are addressed, as well as the difficulties with the numerous bureaucratic requirements faced by organic producers.

G.7.3. Branzova P., (2017), „Organic production in the European Union and Bulgaria –main crop“, Trakia journal of sciences, vol.15, supplement 1, Стара Загора, стр.51-55, ISBN: 1313-7069;

The report outlines the organic farming sector in the EU and Bulgaria, which has been developing extremely fast in recent years. This increase is characterized not only by the area under organic farming, but also by the number of farms and all organic operators registered in the EU-28. Although a large number of farms and areas are still located in the EU-15, the newest EU Member States are showing encouraging developments in this regard, especially in the context of additional EU funding for this type production after their accession. Organic production of arable crops and orchards in EU member states is on the rise.

G.7.4. Branzova P., (2017), "Young farmers - a priority in the new Common Agricultural Policy", Proceedings of the scientific conference "Agribusiness and rural areas - economy, innovation, growth", Varna, ed. Science and Economics, pp. 266-274, ISBN 978-954-21-0944-0;

The report presents new alternatives for young farmers and their funding opportunities. Also, a comparative analysis shows how far Bulgaria has come in stimulating young farmers.

G.7.5. Branzova, P., (2018), "The role of organic farming in the new Common Agricultural Policy." The International Transfer of Administrative Models and Instruments: Opportunities, Limitations and Risks, UI "St. Kliment-Ohridski", pp. 227-237, ISBN: 978-954-07-4406-3;

The report shows the development of the EU's Common Agricultural Policy and provides a historical overview of the changes and reforms it is undergoing. The objectives and instruments of the CAP, as well as organic farming as part of the new CAP are presented. Based on these facts, the following conclusions are drawn:

1. The new CAP, on the one hand, sets a ceiling on subsidies per enterprise, i.e. restricts large farms. On the other hand, small farms are a central aspect - they are supported both in the first pillar by a simplified direct payment scheme and in the second by restructuring and modernization measures.

2. The new CAP places great emphasis on green agriculture and on the restoration of ecosystems and biodiversity. A number of measures are envisaged - progressive reduction and ceiling of direct payments will not apply to green agriculture, 30% of subsidies should in principle be directed to green practices, requirements for maintaining permanent pastures and crop diversification.

3. The EU has set sustainable development and environmental protection as strategic goals for the next decade. Organic foods are actually more expensive and uncompetitive, but also in high demand. The EC also envisages measures to shorten market relations between producers and consumers, to organize local markets so that local products become more easily accessible.

G.7.8. Branzova, P., (2018), „Development of the farmers' markets in Bulgaria“, Proceedings of the International scientific and practical conference “Bulgaria of regions”, 1, pp.223-230, ISBN: 978-619-203-229-6;

The report presents the development of the markets of agricultural producers in the country for the last ten years. The problems faced by farmers, the prospects for them and the opportunities for assistance from the state and the European Union are characterized.

G.6.1. Branzova P., (2019), „Organic Farming in Bulgaria and EU–Comparative Dimensions“, Journal of Economic Research, 1, ERI-BAS, 183-187, ISSN: 0205-3292. Q3 (Scopus)

The report examines the state of organic farming in Bulgaria and the EU for the period 2000-2016. An important aspect is the type of production (arable land, orchard) of organic farms. The choice of type of production differs between regions and Member States and depends on various factors (including the technical aspects related to organic production and the structure of consumer demand). In the course of the study the methods of comparison, statistical methods, etc. are used. The results are aimed at identifying existing differences between EU countries in the field of bioproduction development.

G.7.10. Branzova, P., (2019), „EXPECTATIONS FOR BULGARIAN AGRICULTURE TO THE COMMON AGRICULTURAL POLICY OF THE EUROPEAN UNION AFTER 2020“, In *Proceedings of the International scientific and practical conference “Bulgaria of regions”* (Vol. 2, No. 1), стр. 161- 171, ISBN 978-619-203-281-4;

The report examines the European Union's common agricultural policy, based on three fundamental principles: free trade within the Community on the basis of common prices, preferences for European production on Community markets, and common financial responsibility. It is mainly aimed at ensuring an acceptable standard of living for farmers, providing quality food to consumers at reasonable prices, preserving Europe's rural heritage and helping to protect the environment. As an EU member state, Bulgaria is directing its agricultural policy towards achieving these principles to the maximum extent. The purpose of the report is to outline the expected innovations that Bulgarian farmers will face in the new programming period 2021-2027. Highlights of the proposals for the new CAP and their expected effects on Bulgarian agriculture are presented.

G.7.16. Branzova P..(2021). „Green architecture" in the common agricultural policy of Europe in the period 2021-2027 - ideas and guidelines". Trakia Journal of Sciences, Suppl. 1, Vol. 19, 57-61, ISSN 1313-3551;

The report aims is to clarify the concept of "green architecture" in the context of the new CAP in the period 2021-2027. The methods used are analysis of the literature and official regulations of the EU and the Member States. The result is an outline of the ideas of "green architecture". The conclusion is focused on the future effect of it for the Member States of the EU.

➤ Research field bio economy:

G.7.9. Branzova, P., (2019), "TERMINOLOGICAL APPARATUS IN THE FIELD OF BIOECONOMY." Trakia Journal of Sciences 17.1, 395-399, ISSN 1313-3551;

The purpose of *the report* is to provide a terminological device in the field of bio-economy. Scientific and popular definitions for it are emerging and systematized. A historical review is made and the prospects for bio-economics are outlined.

G.7.13. Branzova, P., (2020), „PRINCIPLES AND GUIDELINES FOR THE IMPLEMENTATION OF BIOECONOMY STRATEGIES“, Trakia Journal of Sciences, 18(1), 473-479, ISSN 1313-3551;

The report examines existing bioeconomy strategies. The principles and guidelines of the individual countries for the implementation of the strategies are considered. A comparative analysis of the strategies was made. Based on this, the principles and guidelines for the implementation of the strategies for the bioeconomy of individual countries are derived.

G.7.14. Branzova, P., (2020), „DEVELOPMENT OF THE REGIONAL BIOECONOMY IN BULGARIA“, сб. " ECONOMIC SCIENCE, EDUCATION AND THE REAL ECONOMY: DEVELOPMENT AND INTERACTIONS IN THE DIGITAL AGE" – vol. II. University of Economics – Varna 391-401.,(1), ISBN 978-954-21-1038-5;

The report presents the development of the bio-economy in the European Union, the adopted policies, strategies and initiatives at the regional level. Against this background, the development of the regional bio economy in Bulgaria is presented and the relevant conclusions and recommendations are presented.

G.7.15. Ruscheva, D., Ognian Boiukliev, **Petia Branzova**, (2020), „Food security, bioeconomy, healthy and organic foods“, Prof. Marin Drinov Publishing House of Bulgarian Academy of Sciences, 626-634, ISBN: 978-619-245-039-7 (A copy of the separation protocol is attached)

The report addresses the concepts of food security, bio-economy, health and organic food in their economic relationship. Bulgaria's food security is studied in the context of the country's EU membership and the ability of food production in agriculture and the food industry to meet the needs of the population. The role and importance of organic farming and organic food in the agricultural sector are substantiated. The share of healthy foods in the overall structure of consumption and market presence is

assessed. Policies for ensuring food security through the development of the bio-economy are presented.