

Bibliography

BOOKS ON ECONOMICS AND AGRICULTURE

JERZAK M., CZERWIŃSKA-KAYZER D., FLOREK J., ŚMIGLAK-KRAJEWSKA M.: Ekonomiczne determinanty rozwoju produkcji i wykorzystania rodzimych roślin białkowych na cele paszowe (Economic Determinants of Production Development and Use of Domestic Protein Crops for Feed) – Wydawnictwo Uniwersytetu Przyrodniczego w Poznaniu, Poznań 2020, 122 pages

One of the basic conditions guaranteeing national food security is the availability of adequate quantities of plant protein for farm animal feed, especially poultry. In recent years, Poland and other EU countries have become dependent on foreign sources of plant protein, mainly on genetically modified soybean meal imported from North America. The unilateral dependence of the feed industry on imported raw material poses a risk of disruption in the supplies in the event of a crisis. Therefore, EU countries, including Poland, are trying to revive the production of domestic protein crops and their market. From 2011-2020, a team of scientists including members of the Institute of Soil Science and Plant Cultivation – State Research Institute and Poznań University of Life Sciences carried out two multi-annual research programs related to increasing the production and use of feed legumes as an alternative to the imported genetically modified soybean meal. The discussed monograph is a synthetic summary of the research carried out within the scope of programs implemented by the Ministry of Agriculture and Rural Development, namely “Improving the Domestic Sources of Plant Protein, its Production, Trade System, and Use in Feed” and “Increasing the Use of Domestic Feed Protein for the Production of High-Quality Animal Products in Sustainable Development Conditions”. The first chapter of the monograph describes protein plants grown in Poland. The second chapter analyzes the production and use of domestic legumes, discusses supply-related determinants of production development, taking into account profitability, and factors determining whether to cultivate legumes or not mentioned by the surveyed farm owners.

The next part analyzes the demand determinants for the market of domestic protein crops, including the production capacities of feed companies, their financial situation, and production efficiency. The last chapter concerns the risk of conducting activities on the feed crop market, especially the price, yield, income, and economic risks. It also shows how producers perceive risk. (M.M.)

LIPOWSKI M., SOBCZYK G., BONDOS I., SŁOWIKOWSKA I.: Konsumpcja w Polsce. Uwarunkowania, zmiany i współczesne trendy (Consumption in Poland. Conditions, Changes, and Current Trends) – Wydawnictwo Uniwersytetu Marii Curie-Skłodowskiej, Lublin 2020, 199 pages

Consumption as an economic category is the process of satisfying human needs using goods and services. Recently, it has been subject to dynamic changes caused by, among others, internal circumstances, an increase in household wealth, and social transfers mitigating income inequalities. Based on literature studies, data from Statistics Poland, the National Bank of Poland, and sector studies, as well as the results of its own research, a team of scientists from the Maria Skłodowska-Curie University in Lublin carried out an analysis of determinants of the consumption level, changes in how needs are satisfied, and current consumption trends in Poland against the background of global trends. The first chapter of the monograph introduces general issues related to consumption, such as definitions of the terms, current trends, and determinants. The second chapter discusses selected macroeconomic conditions concerning consumption, such as prices, wage-price relations, and social transfers. In the next part, the authors describe non-price microeconomic conditions of consumption: household disposable income, liabilities payable to other entities, savings, as well as the structure and dynamics of expenses. The fourth chapter discusses a new trend, namely shared consumption that enables the use of a product without the need to possess it. Shared consumption is based on the pursuit of sustainable consumption, saving limited resources, balancing supply with demand, and easy access to on-demand services. The next part is devoted to consumption virtualization, i.e. a trend related to the advancement of information and communication technologies that facilitate the satisfaction of needs via the internet. The last chapter of the monograph discusses some other trends in consumption: consumerism, consumption hedonism, sustainable consumption, and the servitization of consumption. The authors emphasize that the evolution of consumption and the means by which needs are satisfied are becoming increasingly noticeable, accompanied by an increased awareness of the impact of consumption on the environment, natural, and social welfare. (M.M.)

MATUSZCZAK A.: Ewolucja kwestii agrarnej a środowiskowe dobra publiczne (Evolution of the Agrarian Issue and Environmental Public Goods) – Uniwersytet Ekonomiczny w Poznaniu, Poznań 2020, 273 pages

The publication is a result of a research project funded by the National Science Center, entitled “Effectiveness of the Financing of Environmental Public Goods: Multi-Level Analyses of Rural Areas in Poland Against the Background of European Union Countries”. It presents the evolution of the agrarian issue based on a comprehensive analysis of processes taking place in agriculture and rural areas as well as developmental, socio-economic, and environmental phenomena at the local, national, and global level. The main aim of the work is to identify forces driving the evolution of the agrarian issue, with particular emphasis on the impact of environmental public goods on this

process. The author made the following hypothesis: the currently understood agrarian issue extends the field of reception in relation to rural areas and environmental public goods. In order to verify the hypothesis, the author put forward supporting hypotheses proving that there are premises for changing the paradigm of development of agriculture and rural areas from industrial to sustainable, and that farms are more efficient when disparity of agricultural income is lower. The monograph is divided into two parts; the first one presents the agrarian issue in the light of the rural and agriculture development paradigm, while the other deals with environmental public goods in sustainable rural development. The particular chapters deal with the evolution of the agrarian issue; premises for changing the paradigm of agriculture and rural development; institutional structures and state intervention in stabilization of rural and agriculture development; farm income as a determinant of socio-economic sustainability; bases for the evaluation of environmental public goods; diversification of environmental public goods in rural areas in Poland; financing of environmental public goods in Poland; and the impact of public goods on changes in the agrarian issue and evaluation attempts. (M.M.)

Polska wieś 2020. Raport o stanie wsi. (Rural Poland 2020. Reports on the State of Rural Areas.) Edited by J. WILKIN, A. HAŁASIEWICZ – Wydawnictwo Naukowe Scholar, Warszawa 2020, 217 pages

Under the auspices of the Foundation for the Development of Polish Agriculture, a team of outstanding scientists from the Institute of Rural and Agricultural Development of the Polish Academy of Sciences, the Institute of Agricultural and Food Economics – National Research Institute, Poznań University of Life Sciences, Warsaw School of Economics, the University of Warsaw, and the National Development Council prepared the next edition of “Reports on the State of Rural Areas.” The reports show the socio-economic, political, and demographic changes in rural areas in an interdisciplinary way. Based on their research and public statistical data, the authors – experts in economics, sociology, and political science – described and explained the most important processes, structures, and problems found in rural Poland. The issues discussed in the reports include structural changes in the rural population and its socio-economic situation; attitudes and values of rural residents; the structure of Polish agriculture; the importance of EU membership for the development of Polish agriculture; the standard of living in the countryside in Poland and EU countries; rural poverty in the context of the evolution of this phenomenon and its causes, forms, and spatial differences; political attitudes and behavior of rural voters nationwide; and the concept of reviving and strengthening rural development. The reports had been developed before the global problem related to the coronavirus pandemic, which drastically changed the economic and social situation in the world. Therefore, it does not account for the consequences of the pandemic manifesting through, for example, restrictions on the sale of agricultural products, restrictions on exports or problems with hiring seasonal workers. (M.M.)

Prepared by M.M.

RESEARCH PAPERS ON ECONOMICS AND AGRICULTURE

BOREK R.: Ocena potencjału działań Programu Rozwoju Obszarów Wiejskich w ograniczeniu emisji gazów cieplarnianych w rolnictwie polskim (Evaluation of the Potential of Rural Development Programme measures for Greenhouse Gas Emission Reduction in Polish Agriculture) – Zagadnienia Doradztwa Rolniczego 2020, nr 4, pp. 20-32.

The Rural Development Programme (RDP) is one of the key components of the Common Agricultural Policy aimed at implementing sustainable management of natural resources and climate protection in the long-term development of rural areas. It promotes investment, afforestation, and agri-environment-climate measures that enable the implementation of agricultural practices or an improvement in environmental performance, which can be expressed in greenhouse gas emission reduction units. Evaluating the effectiveness and efficiency of climate measures and agri-environment-climate measures included in the rural development policy requires access to reliable data on the impact of various agricultural practices on reducing greenhouse gas emissions. Based on international literature on the subject, the author of the paper characterized the reduction potential of measures facilitated by RDP instruments. He stated that support for afforestation and extensive forms of agricultural production on permanent grasslands and natural habitats, while limiting intensive animal husbandry, should be a priority. Other indicated measures include improving the efficiency of high-input agricultural technologies in recommended agricultural practices and reducing the emissions they generate. These practices include: precision agriculture; rationalization of the dosage of mineral and natural fertilization; the use of urea with a urease inhibitor; elimination of plow sole; no-till/strip cultivation; direct sowing; leaving harvest residues; processing of natural fertilizers into biogas; slurry acidification; optimization of animal nutrition. (M.M.)

CHRISTIAENSEN L., RUTLEDGE Z., TAYLOR J.E.: Viewpoint: the Future of Work in Agri-Food – Food Policy 2021, Vol. 99, <https://doi.org/10.1016/j.foodpol.2020.101963>.

Economic development is accompanied by the diminishing importance of agriculture as a source of employment. The authors of the paper pose a question what role this sector will play in shaping the demand for labor in the future. By analyzing the literature on the subject and reviewing the existing policy solutions, the authors examine changes in global value chains, migration policies, social insurance systems, and agricultural education. They claim that historically technological changes led to a decrease in the demand for employees on farms, while contributing to the expansion of the agri-food system, also in terms of earning money outside farms (agri-food processing, trade in food, food-related services). Consumption habits are changing, especially among city dwellers who are looking for nutrient-rich, processed, and convenient food. Regardless of the progress of the digital revolution, economically developed countries are now witnessing a deficit of domestic labor in agricultural production, which is compensated by employing foreign workers. However, the growing anti-immigration attitudes in societies may pose a threat to production and trade in agriculture. According to researchers, the COVID-19 pandemic will slow down economic growth and the structural transformation of agriculture. At the same time, it will strengthen the trends towards the digitization of agri-food systems in affluent countries, increasing the level of dependence on imported agricultural raw materials and labor. Moreover, in the poorest countries of the world, especially in Africa, agriculture will continue to be the main source of employment (for 73% of all workers). Although global labor productivity in this sector will increase, it will remain low in developing countries. The problem of global poverty may be solved through investments increasing agricultural productivity and professional mobility, as well as creating inclusive value chains. These undertakings may allow for an increase in the income of the agricultural population through manufacturing products with higher added value and additional off-farm income. (M.D.)

CLAPP J., MOSELEY W.G.: This Food Crisis is Different: COVID-19 and the Fragility of the Neoliberal Food Security Order – The Journal of Peasant Studies 2020, Vol. 47, No. 7, 1393-1417, <https://doi.org/10.1080/03066150.2020.1823838>.

The coronavirus pandemic has seriously disrupted the operation of food supply chains. According to the World Food Program, the health and economic shock will result in an increase in the population of starving people in various regions of the world – from the USA and Brazil, through sub-Saharan Africa, to India – by 130 million people. The enormous difficulties in the access to food faced by the world population and the deficit of workers in agriculture have once again induced a debate about various options for solving problems in this sector. The solutions often mentioned by community and expert organizations include promoting and supporting short supply chains as well as strengthening local markets. According to other observers, food systems showed remarkable resilience to the pandemic, which was enhanced by rapidly recovering trade

relations, high levels of technological development, and innovations. The paper places the current COVID-19 food crisis in a long-term historical perspective, encompassing policy responses to a variety of past shocks of this type. Besides comparing the current crisis with the shocks observed during the past seven decades, researchers answer the question of what policy instruments are needed to build a resilient food system for the future. According to the authors, the results of the current agri-food policy, including support for industrial agriculture, specialization, and trade liberalization, have contributed to the emergence of weaknesses in the current system of production, distribution, and consumption of agri-food products. The aforementioned deficiencies in the form of declining employment in agriculture, instability of the population's income, considerable dependence on international food flows or strong fluctuations in food prices have been exacerbated by the pandemic. The authors argue that the COVID-19 pandemic is a kind of precedent and a turning point. Policy responses different than those applied before are needed to enable a fundamental transformation of food systems towards strengthening local markets, supporting small farms, and promoting agroecology. (M.D.)

ELLEBY C., DOMINGUEZ I.P., ADENAUER M., GENOVESE G.: Impacts of the COVID-19 Pandemic on the Global Agricultural Markets – Environmental and Resource Economics 2020, Vol. 76, No. 4, 1067-1079, <https://doi.org/10.1007/s10640-020-00473-6>.

It is currently unknown how long the economic recession caused by the coronavirus will last and what consequences it will have in the long run. Its negative impact will depend on a number of factors affecting the demand for and supply of all goods, including agricultural products. According to the authors, the current crisis has made everyone aware of how dependent we are on a properly operating global food chain. The paper examines the impact of the demand shock caused by the COVID-19 pandemic and the restrictions introduced by governments in mid-2020 on global agricultural markets. Using the Aglink-Cosimo recursive-dynamic partial equilibrium model for the market for agricultural commodities, the authors focused in particular on the scenarios of the economic growth forecasts developed by the International Monetary Fund for 2020-2021. The research shows that a sharp economic downturn will reduce world meat prices by 7–18%, and prices of dairy products by 4–7%. The global recession will also result in a significant drop in the prices of biofuels and the raw materials used for their production, i.e. corn and oilseeds. Research shows that the observed decline in consumers' income and pandemic-related disruptions in food supply chains have already resulted in deterioration of food security in many developing countries. At the same time, calculations show that global food consumption will remain largely at the same level due to the inelasticity of the demand for most agricultural products and the relatively short duration of the pandemic shock. One of the side effects of the decline in fuel consumption and the reduction in economic activity was a significant reduction in greenhouse gas emissions. However, the estimates made as part of the research showed that the reduction in agriculture greenhouse gas emissions was only about 1%, i.e. 50 million tonnes of carbon dioxide in 2020 and 2021. (M.D.)

HOBE C-H., MICHELS M., MUSSHOFF O.: Präferenz deutscher Landwirte für Pachtpreisanpassungsklauseln unter Berücksichtigung des Klimawandels und der Änderung agrarpolitischer Rahmenbedingungen (Preferences of German Farmers for Lease Adaptation Clauses Referencing Climate Change and Shifts in Agricultural Policy Conditions) – *Berichte über Landwirtschaft* 2021, Vol. 99, Ausgabe 1, <https://doi.org/10.12767/buel.v99i1.312>.

The lease market in Germany is of great importance for farms, as on average 58.5% of the agricultural area is leased. Strong competition in this market results in significant increases in rents, while farm income shows high volatility due to fluctuations in prices of agricultural products and crops, and climate change. As a consequence, low prices jeopardize the liquidity of farms. To solve this problem, lease agreements include special clauses that guarantee flexible rent adjustment to market conditions and may serve as a risk management instrument. The authors of the paper conducted an online survey of farmers' preferences as to special clauses regarding flexible determination of the rent amount included in lease agreements. Interviews with 156 farmers carried out in the first quarter of 2019 and 2020 showed that only 26% of farmers had concluded lease agreements including the clauses in question. It also turned out that the majority of farmers were considerably interested in introducing clauses in lease agreements allowing the amount of rent to be changed. The results of the survey are of great importance not only for farmers, but also for owners of agricultural land and advisory purposes. (P.S.)

MILCZAREK-ANDRZEJEWSKA M., WILKIN J., MARKS-BIELSKA R., CZARNECKI A., BARTCZAK A.: Konflikty o ziemię rolną – perspektywa ekonomiczna (Agricultural Land-Use Conflicts: An Economic Perspective) – *Gospodarka Narodowa* 2020, nr 4, pp. 5-27, doi:1033119/CN/128217.

Agricultural land serves many functions important not only for agriculture, but also for the whole society. Due to this multi-functionality, access to agricultural land is subject to severe competition between various stakeholders, i.e. it gives grounds for conflicts over its use. The aim of the paper is to present economic theories explaining the impact of conflicts over agricultural land on its allocation and effective use. The authors paid particular attention to the new institutional economics and the public choice theory, that are often used by economists dealing with agriculture, the environment, and natural resources. They also organized and clarified the terms used to analyze the phenomena covered by the study. Examples of conflicts over agricultural land in Poland mentioned by them include the rivalry between its agricultural and non-agricultural use, which occurs in areas adjacent to cities, and disputes regarding naturally valuable areas, e.g. those covered by the NATURA 2000 network. The authors emphasized that conflicts over agricultural land have a strong historical background and origins in numerous formal and informal institutions developed in different periods. (M.M.)

PIWOWAR A.: Agricultural Biogas – An Important Element in the Circular and Low-Carbon Development in Poland – *Energies* 2020, Vol. 13, No. 7, 1733, <https://doi.org/10.3390/en13071733>.

With its well-developed livestock production sector, Poland is one of the leaders in greenhouse gas emissions from agriculture, and at the same time has great potential for the development of agricultural biogas production. The author of the study estimates that in Poland, depending on the assumptions made, it is possible to produce from 398.7 to 1,379.6 million m³ of biogas annually from agriculture manure alone. Biogas plants produce energy in a cyclical circulation of matter and energy, allowing for the operation of resource-efficient and low-emission links between the food production industry and the energy sector. The paper describes the Polish agricultural biogas market in economic and organizational terms. Based on statistical data, the dynamics of changes in the number of entities dealing with biogas production, their spatial distribution, as well as the output volume in 2011-2018 were analyzed. The calculations indicate that a high growth dynamic in the number of plants producing biogas was observed in Poland in the analyzed period. During that time, their number increased from 8 to 96. At the same time, a more than eightfold increase in the volume of agricultural biogas produced was observed. Particular attention was paid in the paper to changes in the structure of the substrate used in domestic biogas plants; an increase in the role of distillery waste and waste from the fruit and vegetable industry at the expense of slurry and maize silage was observed. It was emphasized that currently the potential of the agricultural biogas market in Poland is not fully used. According to the author, the development of this sector of the economy requires institutional support from public authorities, as well as broadening the knowledge of agricultural producers and managers of agri-food companies of the use of agricultural waste for energy production purposes. (M.D.)

POCZTA W.: Przemiany w rolnictwie polskim w okresie transformacji ustrojowej i akcesji Polski do UE (Changes in Polish Agriculture in the Period of Political Transformation and Accession of Poland to the EU) – *Więś i Rolnictwo* 2020, No. 2, pp. 57-76, doi: 10.7366/wir.022020/03.

The aim of this paper is to present and evaluate the most important transformations of the Polish agricultural sector in the context of the processes occurring in it in connection with political transformation and Poland's integration with the European Union. The analyses were carried out on the occasion of 2019 celebration of the 30th anniversary of the launch of the economic transformation and the 15th anniversary of Poland's integration with the EU. Both processes are closely related to each other, as Poland's membership in the EU was conditioned first and foremost by the implementation of profound economic reforms. The transformation meant the transition from a centrally controlled economy to a market economy and introduced reforms involving price liberalization, internal currency convertibility, freedom of trade transactions, privatization, and development of market institutions. These reforms had an impact on the entire economy, with agriculture being particularly affected. The author discussed the most important effects

of the transformation and EU membership in Polish agriculture, including the change in the role of agriculture in the national economy; changes in price relations; changes in input resources; agrarian transformations in private farming; changes in the output volume and the scale of financial support under the CAP. The author emphasized that the necessary transformation process opened Polish agriculture up to a market economy and enabled its future operation on the single European market, while EU membership and the ability to use CAP instruments created an opportunity for rapid development of the agri-food sector. (M.M.)

PROFETA A., SMETANA S., ENNEKING U., HEINZ V., KIRCHER C.: *Der Einfluss der Corona-Pandemie auf den Lebensmittelkonsum der Verbraucher – Vulnerabilität der Haushalte mit Kindern und Einkommensverlusten (The Impact of the Corona Pandemic on Consumers' Food Consumption – Vulnerability of Households with Children and Income Losses)* – Berichte über Landwirtschaft 2021, Vol. 99, Ausgabe 1, <https://doi.org/10.12767/buel.v99i1.334>.

The research carried out by the authors clearly shows that the COVID-19 pandemic has a significant impact on consumers' dietary patterns. First of all, households consume more food and purchase more highly processed products, such as ready meals and canned food with a longer shelf life. The consumption of alcohol and sweets has increased as well, while that of fresh fruit and vegetables has decreased. It is clear that families that have been financially affected by the pandemic are a particularly vulnerable group. As the pandemic continues and schools and kindergartens are repeatedly closed, the authors predict negative health consequences in the medium- to long-term. (P.S.)

SADOWSKI A.: *Rolnictwo w świecie zmian – wyzwania dla doradztwa (Agriculture in the World of Change – Challenges for Advice)* – Zagadnienia Doradztwa Rolniczego 2020, No. 4, pp. 7-19.

The ever faster economic and civilization changes are also observed in agriculture and the entire agribusiness. Progress involves technical and technological changes, as well as an evolution in the way people think and perceive the world. In the case of agribusiness and agriculture, the most important areas of changes include: modern technologies, mainly digital and satellite (Agriculture 4.0); changing nutrition and food distribution models resulting from a lifestyle evolution in society; the climatic and environmental conditions of the EU CAP; megatrends and globalization of the food economy; demographic transformations. All these changes pose serious challenges for agricultural advisory services that are nowadays expected not only to help solve current issues, but also to indicate possible or anticipated important issues regarding the future. They should educate farmers to make them able to respond independently to ever faster changes. In order to meet the growing challenges, it is necessary to better subsidize advisory services and develop a system of permanent cooperation between advisory services, science, and other entities introducing innovations. (M.M.)

SAIZ-RUBIO V., ROVIRA-MAS F.: From Smart Farming Towards Agriculture 5.0: A Review on Crop Data Management – *Agronomy* 2020, Vol. 10, No. 2, <https://doi.org/10.3390/agronomy10020207>.

To describe innovative techniques and technologies, terms such as precision farming, smart farming, digital farming, and farming 5.0 are used. The need to use objective information, artificial intelligence, or robots is most often explained by the need to increase the productivity of farms, which will enable the growing global demand for food to be met. The introduction of innovative solutions in the agri-food sector also results from enhanced care for valuable natural resources, such as water and soil, and the struggle for climate change mitigation. The aim of the paper is to review the progress of research on farm management systems. The authors of the study presented their own model based on information flow. In the proposed approach, the farmer is perceived more as a person supervising the production process on the farm than an employee performing strenuous and repetitive physical work, based on subjective observation in the field and gathered experience. In the proposed model, the farmer's activity is based on data collected with the use of sensors via integrated detection platforms: remote (aviation, satellites) and proximity (machines, robots) ones, that is then transferred to databases. The material collected in the field is processed by farm management software that helps make optimal production decisions and implement them by sending signals to relevant machines and devices. Besides the crop management cycle, the paper also describes a number of selected applications and computer software used in modern agricultural production in various countries of the world. According to the authors, in order to fully benefit from the achievements of Agriculture 5.0, users need comprehensive and in-depth training. (M.D.)

Prepared by the Team

