

Bibliography

ECONOMIC AND AGRICULTURAL BOOKS

HAJDUKIEWICZ A.: Oznaczenia geograficzne produktów rolno-spożywczych w relacjach handlowych Unii Europejskiej (Geographical Indications of Agri-Food Products in Trade Relations of the European Union) – Wyd. Uniwersytetu Ekonomicznego w Krakowie, Kraków 2020, pp. 251, Monografie No. 269.

The issue of geographical indications is part of the mainstream of international economic relations and international trade. It is becoming increasingly important due to its inclusion in international trade agreements and thus recognition as an important area for negotiations, sometimes even blocking the conclusion of an agreement. The issue of geographical indications is complex because of their dual nature. The point is that they can bring benefits to producers and exporters and generate positive externalities, and at the same time, under certain conditions, constitute a protectionist instrument that protects producers from competition. The main purpose of the presented monograph is to identify the economic functions of geographical indications for agri-food products, regulatory aspects of their use in international trade, and to assess the significance for the development of the EU trade relations with third countries. The author used an analysis of world literature on the subject, data from the EU-28 countries and the DOOR, e-Spirit-Drinks, e-Bacchus, WITS databases, as well as the results of her own survey on a sample of 31 representatives of all Polish producer groups which, by the end of 2018, had registered a geographical indication such as Protected Designation of Origin (PDO) or Protected Geographical Indication (PGI). In the first chapter of the monograph, she presented the definition of geographical indications included in the provisions of international law as well as the features, functions, and the strategic aspects of indications in marketing terms. The second chapter provides an overview of the rules and systems for the protection of geographical indications, the most important regulations specified in multilateral agreements, and the characteristics of the systems for the protection of geographical indications in force in the USA and China. The following part presents GIs as a contentious issue in international negotiations on multilateral trade relations, such as the WTO DOHA Round. Then, there is also a chapter characterized by the issue of the use and protection of geographical indications in the EU's bilateral trade

relations. Examples include negotiations of the Transatlantic Trade and Investment Partnership between the USA and the EU, the Comprehensive Economic and Trade Agreement between Canada and the European Union, the EU-Republic of Korea Free Trade Agreement, the DCFTA (Deep and Comprehensive Free Trade Area) Agreement between the EU and Ukraine. The last chapter concerns the possibilities and limitations of the development of trade in agri-food products bearing EU geographical indications as well as presents and discusses results of the author's own research on the opportunities, benefits, and barriers to the development of sales and exports of Polish products bearing geographical indications. (M.M.)

KRYSZAK Ł., CZYŻEWSKI B.: Determinanty dochodów rolniczych w regionach Unii Europejskiej (Determinants of Agricultural Income in European Union Regions) – Wyd. CeDeWu, Warsaw 2020, pp. 312.

The monograph presents research on agricultural income based on the assumptions of classical and institutional economics. It assumed that the main goal of a farm operator is to maximize income as well as the influence of conditions established by CAP instruments was considered. The study used data from farms from 115 EU FADN regions for 2004-2015. The main goal is to identify the determinants of farm income in the EU regions at the level of a representative FADN farm, considering differences in resources and productivity of production factors. To achieve the goal, observations on the following issues were used: does the intensification of production still bring satisfactory results for the growth of income in regions with lower land productivity? Does improved efficiency of the use of assets bring about an increase in income? In conditions of high capital saturation and high productivity in some EU regions, is managing the property and cost structure and increasing CAP subsidies a way to maintain income growth? In the analyzes, the authors used numerous research methods, mainly of a quantitative nature, e.g., Word, TOPSIS-CRITIC, DEA, panel regression. In subsequent chapters of the monograph they included: the operationalization of the concept of "agricultural income" and the characteristics of potential income determinants based on literature research; the review of resource relations and productivity of production factors in the theory of agricultural development models; the designation of clusters of EU FADN regions with similar resource relations and factor productivity; the assessment of the level and dynamics of basic categories of agricultural income and the assessment of the financial situation of farms in FADN regions; the assessment of correlation between the level of farm income and its determinants. The authors formulated recommendations for agricultural policy: it is appropriate to make the CAP more flexible; specialization support mechanisms for medium-sized farms need to be refined; access to finance should be facilitated for farms wishing to expand their business. The CAP should aim at shaping the agrarian structure in which medium-sized farms play a leading role. (M.M.)

KRYSZTOFIAK J., PAWLAK K., KOŁODZIEJCZAK M.: Regionalne zróżnicowanie problemu niedożywienia na świecie (Regional Differentiation of the Problem of Malnutrition in the World) – Wyd. Uniwersytetu Przyrodniczego w Poznaniu, Poznań 2020, pp. 221.

The actions taken since the beginning of the 20th century aimed at ensuring food security have not brought any spectacular results and the problem of malnutrition in the world still exists. In highly developed countries, this is a marginal phenomenon, but in developing countries, one in eight people suffer from hunger, and in regions such as Central Africa and East Africa, 41 and 31.5% of the population are malnourished, respectively. The level of nutrition is influenced by many factors of a natural, economic, demographic, social, and political nature, as well as social inequalities resulting from subjective reasons or a different level of agricultural development. The impact strength of the individual determinants of malnutrition and its level vary on a global scale. The actions taken at the regional and national levels, aimed at improving the nutritional situation, also demonstrate different effectiveness. Using the literature on the subject and statistical data from the FAO, World Bank, WHO, UNCTAD, USDA, GFSI, the authors of the monograph presented regional differentiation of the issue of malnutrition in the world and assessed the effectiveness of the selected methods of solving it. In the first chapter, they presented the evolution of the concept of food security, its pillars, conditions, and dimensions, as well as selected methods of measurement. In the second chapter, they discussed regional differentiation concerning the nutritional situation in the world, including an analysis of the scale and frequency of malnutrition, the level of fulfilling energy needs, the supply of basic nutrients, and the health effects of malnutrition. Then, they referred to the determinants of physical and economic access to food in individual regions of the world, defined the role of agriculture in shaping the nutritional situation of developing countries and distinguished types of countries in terms of the prevalence of malnutrition and selected features describing the condition of the agricultural sector. In the last chapter, the authors critically assessed the initiatives undertaken since 1945 aimed at reducing hunger on an international and national scale, both in developed and developing countries. (M.M.)

MARKS-BIELSKA R.: Ewolucja rynku ziemi rolniczej w Polsce (Evolution of the Agricultural Land Market in Poland) – Wyd. Uniwersytetu Warmińsko-Mazurskiego w Olsztynie, Olsztyn 2020, pp. 238.

Due to the multifunctionality of agricultural land and the non-renewable nature of its resources, the real estate market must be treated differently than other commodities, production factors, and capital goods. Its analysis requires the use of the achievements of economics, law, and other social sciences, including political ones. The main research objective of the discussed monograph, being a complementary continuation of the post-doctoral thesis published by the author in 2010 on the development conditions and trends on the agricultural land market in Poland (original title: *Rynek ziemi rolniczej w Polsce – uwarunkowania i tendencje rozwoju*) was to indicate the factors for the rational use of

agricultural land. To achieve this goal, the author, during the conducted analyzes and research, proved the research hypotheses that she had put forward: the rational functioning of the land market is influenced by the determination and enforcement of ownership rights; agricultural land plays an increasing role in the provision of public goods; the functioning of lease institutions in Poland in the current legal form does not contribute to the most socially and economically effective use of agricultural land resources by lessees; an increasing number of entities compete for agricultural land resources, which causes conflicts; the specific features of the land market imply the need for efficient and rational state intervention. The study uses the results of research conducted by the author since 1999, available literature on the subject, statistical data of the Statistics Poland, EUROSTAT, Agricultural Property Agency, National Support Centre for Agriculture, Agency for Restructuring and Modernization of Agriculture, and the legislation in force in the research area. The author stated that the issues that require a holistic approach have not yet been covered even by a short-term agricultural land management policy, either at the EU or Polish level. A modern land market policy operating as part of economic and agricultural policy must integrate other sectoral activities (investment, environmental protection, spatial planning, urban planning, landscape architecture) and be based on strategic goals, the implementation of which will enable, inter alia, ensuring the country's food and energy security. (M.M.)

Prepared by M.M.

ECONOMIC AND AGRICULTURAL ARTICLES

CHRISENDO D., SIREGAR H., QAIM M.: Oil Palm and Structural Transformation of Agriculture in Indonesia – *Agricultural Economics* 2021, <https://doi.org/10.1111/agec.12658>.

Structural transformations in agriculture usually consist in a gradual enlargement of the area of an average farm, an increase in average productivity and the outflow of labor from agriculture to other sectors of the economy. This process is accompanied by labor-saving innovations in agricultural production and earning opportunities in industry and services. Between 1998 and 2018, the share of Indonesian agriculture in generating GDP decreased from 24% to 13%, and the percentage of people working in this sector among the total number of working people dropped from 45% to 31%. The country has become the world's largest producer and exporter of palm oil, and its production uses 14 million hectares of land and the work of 8 million people employed on farms and in processing. The main goal of the article was to check whether the rapid increase in demand for palm oil contributed to the structural changes in Indonesian agriculture. In their analyzes, they used panel data from three waves of research conducted in 2012, 2015, and 2018 on farms located in the Indonesian region of Jambi. Growing oil palm is capital intensive, but requires much less labor per hectare than traditionally produced crops such as rice and rubber trees. Indonesian farmers who started producing palm oil significantly increased the area of their crops (on average by 30%) and devoted some of the time saved to the development of agricultural activities. The research shows that the average size of agricultural farms in Indonesia has increased in recent years. The authors also observed a positive relationship between the introduction of palm oil cultivation and obtaining income from non-agricultural sources. The results also show that some labor inputs from farms flowed to other sectors, which improved the economic situation of farming families. The start of palm oil production significantly increased the probability of starting a small business activity among the surveyed rural families. On the other hand, switching to palm oil production did not increase the chances of employment in the industry and services. The authors of the study combine it with limited demand for labor in the sectors in local markets. (M.D.)

Van DEYNZE B., SWINTON S.M., HENNESSY D.A.: Are Glyphosate-Resistant Weeds a Threat to Conservation Agriculture? Evidence from Tillage Practices in Soybeans – American Journal of Agricultural Economics 2021, <https://doi.org/10.1111/ajae.12243>.

Herbicidal preparations have been widely used in American agriculture since the mid-twentieth century to protect crops from weeds. Previously, mechanical methods associated with intensive plowing were used for weeding. It resulted in soil erosion, the deterioration of water quality and high fuel consumption. Currently, more and more often, more environmentally friendly conservation tillage is used in agricultural production. The tendency has been reinforced by the adaptation of chemical care methods based on glyphosate. Over the years, many weed species evolved and became resistant to the ingredient. It has decreased its effectiveness. The article presents results of research showing that the significant reduction in the use of conservation tillage in soybean production in the USA was related to the spread of glyphosate-resistant weeds. The authors, based on panel data collected between 1998 and 2016 from over 22,000 farms located in 31 states, estimated the structural models of soybean management. Calculations show that the first appearance of glyphosate-resistant weed species had little effect on crop management practices. However, since the identification of eight glyphosate-resistant weed species, the frequency of conservation and no-plowing tillage in US agriculture has decreased by 3.9 and 7.6 percentage points, respectively. What is more, it was found that with the emergence of ten glyphosate-resistant species, the predicted rate of herbicide use without glyphosate would increase by 50 percentage points and the availability of herbicides other than glyphosate would contribute to the use of conservation tillage. Using a simple benefit-transfer model, the authors cautiously estimated that from 2008-2016, farmers' responses to the spread of glyphosate-resistant weeds resulted in social costs in the form of deterioration in water quality and climate due to additional fuel emissions, amounting to almost USD 245 million. The amount does not include costs caused by the release of carbon during soil damage. According to the researchers, this figure is likely to increase as glyphosate resistance becomes increasingly common and more farmers choose farming as an additional measure against weeds. (M.D.)

KIRNER L., STÜRMER B.: Mehrkosten von und Erfahrungen mit höheren Tierwohlstandards in der österreichischen Schweinemast (Additional Costs for and Experiences with Higher Animal Welfare Standards in the Austrian Pig Fattening Sector) – Berichte über Landwirtschaft 2021, Vol. 99, Ausgabe 1.

The authors of the article conducted an analysis aimed at determining the increase in the costs of fattening pigs due to the additional expenditure of farms on improving welfare. Higher costs were determined by the increase in the floor space in a pig house per unit kept, the type of bedding used, the use of GMO-free feed, tail docking, and greater labor input. Empirical studies were conducted on 12 farms that implemented higher welfare standards. Additional costs, excluding public financing, ranged from EUR 6

to EUR 48.5 per unit. The farms in Austria that implement high animal welfare standards can be provided with support that covers 40-70% of the additional costs depending on the technological solutions implemented. The remainder of the cost increase should be covered by higher livestock prices. Agricultural consultancy should play an important role in the implementation of optimal rearing systems that will enable a greater share of pork from production with higher welfare standards in the market. (P.S.)

MAGGIO G., MASTRORILLO M., SITKO N.J.: Adapting to High Temperatures: Effect of Farm Practices and Their Adoption Duration on Total Value of Crop Production in Uganda – American Journal of Agricultural Economics 2021, [https:// doi.org/10.1111/ajae.12229](https://doi.org/10.1111/ajae.12229).

Challenges of adapting to climate change are especially great in sub-tropical and tropical sub-Saharan African countries, such as Uganda. The increasing warming significantly reduces the yields there and reduces income from agricultural activity, being the basic source of income for a significant part of population. For this reason, solutions are sought to reduce the sensitivity of agricultural systems and support agricultural producers. Activities include, among others, the popularization of effective land use methods, supporting the use of appropriate technologies, aid in the diversification of livelihoods, and the professional mobility of agricultural population. The article presents a study of the relationship between high temperatures and the value of maize production as well as the implementation of two sustainable agricultural practices, the use of organic fertilizers (compost and manure) and the intercrop of legumes. Using detailed climatic information (temperature and precipitation amount) of a spatial nature and data from four waves of surveys conducted on the nationally representative sample of 1,120 farms, the authors estimated a model with fixed effects and with the use of an instrumental variable. The study is of great importance for the population and economy of Uganda (2/3 of the country's population works in agriculture, whose share in GDP is 23%), as climate warming (the average temperature has increased by 1.4°C since 1960) and drought related to it are now responsible for approx. 34% of crop losses. The results show that the application of the agricultural practices has a positive effect on the total value of plant production, and this effect is increasing monotonically with the increasing temperature. The number of years during which a farmer carried out the analyzed practices was related to a higher total value of plant production. The observed correlation was visible in the whole distribution of high temperature deviations. According to the researchers, promoting pro-environmental methods of production on farms can help Ugandan agriculture counteract the threats posed by rising temperatures. (M.D.)

MRÓWCZYŃSKA-KAMIŃSKA A., SZUBA-BARAŃSKA E., POCZTA W.: Wyniki produkcyjne oraz efektywność agrobiznesu w krajach Europy Środkowo-Wschodniej (Production Results and Efficiency of the Agribusiness in the Countries of Central Eastern Europe) – Ekonomista 2021, No. 1, pp. 87-117.

Comparing the historical determinants of agribusiness development in Central and Eastern Europe (CEE) and Western Europe and citing the applicable definitions, the authors of the article presented changes in production, income, and agribusiness efficiency in 10 CEE countries (Bulgaria, the Czech Republic, Estonia, Lithuania, Latvia, Poland, Romania, Slovakia, Slovenia, Hungary). They also examined whether the observed transformations reduce development differences, as compared to the EU-15 countries. The analysis covered production and income results, as well as efficiency from 2000-2014, and included three agribusiness aggregates: supply, proper agriculture, and the food industry. They used an analysis of input-output flows made as based on a statistical description of the production activity of all branches in a specific system during a specified period (input-output tables). The authors confirmed development processes modernizing food production and the emergence of modern agricultural business in the CEE countries, as well as reducing the share of agriculture in total production and national income. There is a visible increase in the efficiency and productivity of work on the way of increasing the volume of production and income as well as decreasing employment. To overcome the still existing difference in the development of agricultural business between the CEE countries and the EU-15, it is necessary to provide support with public funds, including the CAP, aimed at causing structural changes and increasing efficiency. (M.M.)

PASIŃSKA D.: Handel zagraniczny produktami mięsnymi Polski z Japonią w latach 2014-2019 (Foreign Trade in Meat Products between Poland and Japan in 2014-2019) – Zeszyty Naukowe Szkoły Głównej Gospodarstwa Wiejskiego w Warszawie – Problemy Rolnictwa Światowego 2021, Vol. 21, paper 1, pp. 16-32.

Japan is a country that, due to the limited availability of arable land and a relatively large number of increasingly wealthy inhabitants, is heavily dependent on importing food and feed. In terms of meat products, it is one of the largest importers in the world (first place in the import of chicken meat, second place – pork, and third place – beef). Japan introduces various import barriers to protect its producers, but the entry into force of the EU and Japan's Economic Partnership Agreement (February 1, 2019) may create opportunities to revive and strengthen Polish exports of meat and meat products. The author of the article characterized the changes in foreign trade in Polish meat products with Japan from 2004-2019. She used data from the Ministry of Finance, OECD, ITC Trade Map and the Statistics Bureau at the Ministry of Internal Affairs and Communications. She used methods of analyzing the dynamics of phenomena, analyzing the structure and selected measures of foreign trade competitiveness. She stated that in the analyzed period the balances of foreign trade in meat products with Japan were positive, but between 2016 and 2019 exports were much lower than between 2011 and

2013. The reason was the occurrence of avian influenza in Poland, ASF and the introduction by Japan of restrictions on the import of certain products as well as the tariff barrier. Export limitations also result from problems with adapting the offer to specific local tastes and strong competition from the world's major producers. (M.M.)

STAŃKO ST., MIKUŁA A.: Zmiany w produkcji, handlu zagranicznym i zużyciu krajowym ziemniaków w Polsce w latach 2001-2019 (Changes in the Production, Foreign Trade and Domestic Consumption of Potatoes in Poland in 2001-2019) – Zeszyty Naukowe Szkoły Głównej Gospodarstwa Wiejskiego w Warszawie – Problemy Rolnictwa Światowego – 2021, Vol. 21, paper 1, pp. 33-51.

In many European countries, including Poland, the cultivation of potatoes is of great economic importance. In our country, in 2019 the share of potatoes in global agricultural production was 4.2%, and in commercial production it was 3.7%. The aim of the article was to define the main directions of changes and their intensification in the production, domestic consumption and foreign trade turnover of potatoes and their products. The authors analyzed the data from Statistics Poland and the IAFE-NRI from 2001-2019. Such a long period of observation also allowed for the development of the trend function and preparation of mid-term development projections for 2025. The research covered changes concerning potato crops, yields, harvest, use (consumption, losses, fodder, seed potatoes, export, industrial and food processing), consumption (unprocessed, processed), processing (starch, distilling, dried, food products), export and import (fresh, dried, chips, starch, French fries, other products), trade balance, trends in foreign trade in potatoes and processed goods. Based on the analyzes, the authors formulated, inter alia, the following trends: decrease in crops and the size of potato harvest, increase in yield, decrease in the consumption of unprocessed potatoes, increase in the consumption of processed potatoes, increase in processing, positive balance of foreign trade in potato products, negative balance of foreign trade in fresh potatoes. The development projection developed for 2025 determined the production of potatoes in Poland at 7,250,000-7,540,000 tons, and the demand for 7,430,000-7,570,000 tons. (M.M.)

STĘPIEŃ S., POLCYN J., BORYCHOWSKI M.: Determinanty zrównoważonego rozwoju ekonomiczno-społecznego rodzinnych gospodarstw rolnych w Polsce (Determinants of Sustainable Economic and Social Development of Family Farms in Poland) – Ekonomista 2021, No. 1, pp. 56-86.

Small family farms are of great importance in alleviating hunger and poverty and improving food security and the standard of living in rural areas. At the same time, their activity serves the protection of the natural environment and biodiversity, i.e., they implement a sustainable model of agriculture. The aim of the presented article is to identify macroeconomic, political, and institutional factors influencing the level of economic and social sustainability of Polish family farms. The authors based their considerations on the theory of political economy and new institutional economics.

They formulated a hypothesis that the condition for the basis of farm sustainability is compliance of the size and structure of production, demographic characteristics of the manager (age, education), market relations and agricultural policy. They verified this claim using the TOPSIS method and the results of surveys conducted in 2018 on a sample of more than 700 family farms from all voivodeships. Questions concerned four thematic blocks: economic and social sustainability, environmental sustainability, connections with the market, and general characteristics of the farm. Based on the regression analysis of the constructed model, the authors concluded that the integration of family farms with the market and their position in the market chain are the most important factors of economic and social sustainability for them. Appropriate education and young age of the farmer as well as the production volume and farm area also have a positive impact. On the other hand, the farm's development is negatively affected by the high share of EU subsidies in the farmer's income. The results of the analyzes should become valuable information for the agricultural policy supporting small-scale family farms. (M.M.)

VELTHEIM F.R., RUBE A.A., HEISE H.: Elektromobilität in der deutschen Landwirtschaft – Eine qualitative Analyse zur Nutzerakzeptanz (E-Mobility in German Agriculture – A Qualitative Analysis of User Acceptance) – German Journal of Agricultural Economics (GJAE) 2021, Vol. 70, No. 1.

The issue of e-mobility in agriculture is becoming increasingly topical, which is reflected, for example, in the creation of the first projects of electrically powered tractors. However, it is still unclear whether the concepts can be widely introduced or remain niche. The acceptance of e-mobility by farmers will clearly play a decisive role in the future. The authors of the article undertook research aimed at determining the factors influencing the users' acceptance of electrically powered agricultural machines. Qualitatively, the research contributes to further research in this area. The authors interviewed 15 farm operators of various organizations and found that most of the surveyed farmers are critical of the dissemination and use of e-mobility in agriculture. At the same time, it has been shown that the factors for the acceptance of electrically driven agricultural machines are interrelated, and therefore partially have an indirect influence on the ex ante acceptance by the respondents. (P.S.)

VROEGE W., BUCHELI J., DALHAUS T., HIRSCHI M., FINGER R.: Insuring Crops from Space: the Potential of Satellite-Retrieved Soil Moisture to Reduce Farmers' Drought Risk Exposure – European Review of Agricultural Economics 2021, Vol. 48, Issue 2, <https://doi.org/10.1093/erae/jbab010>.

The Index Insurance for Drought Risk is one of the examples of advanced risk management instruments in agriculture. A solution of this type is cost-effective, reduces the problem of information asymmetry and enables a relatively cheap and quick determination of the amount of compensation. The authors of the paper assess whether in-

insurance based on global and readily available satellite data on soil moisture can reduce the risk of financial losses due to drought. Satellite data is acquired by remote sensing using microwave techniques and can provide information on soil moisture in surface layers. The study included the development of individual index insurances based on soil moisture for wheat, maize, and rape crops. The construction of them was based on unique data from 89 large-scale farms located in eastern Germany. The empirical material covered 1995-2015 and was collected by a local insurance agency. The conducted research shows that index insurance constructed as based on data on soil moisture significantly reduced the exposure to the risk of crop losses caused by drought, as compared to a situation in which production was not insured. The index estimated on the basis of satellite data has an advantage over the soil moisture index based on measurements from ground meteorological stations. It is also important to conclude that the available satellite data can be used to increase the resilience of farms to the changing climate. Insurance companies should particularly rely on more detailed information relating to specific farms when offering products to farmers. On the other hand, decision-makers responsible for shaping agricultural policy should strive to improve the availability of the indicated data for insurance companies. According to the authors, disseminating the insurance solutions described in the article may also contribute to limiting the government's use of costly disaster compensation. (M.D.)

ZHLLIMA E., XHOXHI O., IMAMI D.: Feminization in Agriculture in a Transition Economy: Women's Role in Family Farms – Sociologia Ruralis 2021, Vol. 61, No. 2, <https://doi.org/10.1111/soru.12332>.

Gender relationships are an important mechanism for the allocation and distribution of labor, income, wealth, and inputs in the agricultural sector and rural areas. For several decades, research on gender equality has focused on the relationships between gender roles and the decision-making process and bargaining power. As indicated by the authors of the article, the current literature on the subject has rarely focused on the impact of bargaining power and equal rights in farm-owned families on the structures of agriculture. They refer to the achievements of feminist theories and present how feminization is marked in the agriculture of a developing country by changing the activity of women on family farms. They particularly analyze the transformation of decision making in the farm sector in Albania. As a post-socialist country, Albania is in its transformation period. Depopulation of rural areas resulting from migratory movements is one of the manifestations of it. Due to the economic migration of men abroad and their increased professional mobility, the importance of women in Albanian agriculture in relation to property rights and managerial competences on farms is growing. The authors of the study analyze the relationship between the decision-making power of a woman on a farm and production structures. They verify the hypothesis that feminizing farms tend to switch to less intensive production activities. They use empirical material from two waves of field surveys conducted among rural families from twenty villages and the instrumental variable regression method instrumental. The analyzes carried out on a sample of 1,167 people show that there was a positive influence of the decision-making power of women on fruit-

growing farms, and negative one on farms with livestock rearing and with abandoned land. The decision-making power of women on a farm was largely influenced by the level of education, the observance of equality of land rights and access to advisory services. According to the authors, the results show the need for institutional support for land rights of agricultural women, the need for increasing their access to agricultural training and education as well as conducting social campaigns to raise the awareness of the role of women in agriculture. (M.D.)

Prepared by the Team

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