CONDITIONS OF DEVELOPMENT OF ARABLE LAND BELONGING TO STATE TREASURY IN WARMINSKO-MAZURSKIE REGION

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Abstract. The paper undertakes to investigate the issue of factors determining utilization and development of arable land belonging to the Treasury Agricultural Property Stock in Warminsko-Mazurskie region. The objective of the paper is to identify factors affecting operation and development of agricultural holdings using lands purchased or leased from the Treasury Agricultural Property Stock. The assessment was made based on opinions of purchasers and lessees of agricultural real estate belonging to the State Treasury in Warminsko-Mazurskie region. In the research, an opinion survey method is used, realized through questionnaire technique. The research sample included 179 people, ca. 70.9 % questionnaires were returned. 119 questionnaires were qualified for further analysis. The description of data was conducted using descriptive statistics methods as well as Kruskal-Wallis tests for selected variables.

According to conducted research, market factors focusing on cost and demand, namely unstable prices of agricultural products and high prices of agricultural means of production, are of crucial significance to functioning and development of analysed farms. Large impact is also that of factors focused on resources, particularly acreage and quality of arable lands as well as available machinery. In opinion of respondents, an important development barrier is also limited access to external sources of financing, particularly credits, and complexity of application procedures for subsidies from the European Union. In case of deterioration of financial and economic situation, majority of respondents would reduce expenditures and attempt to obtain support in form of short-term loan. Importantly, virtually nobody would consider selling land.

Key words: conditions of management, farmers, arable land, State Treasury.

JEL code: Q12, Q15

Introduction

Until the end of September 2017, the 25-years long process of ownership transformations in Poland was conducted by Agricultural Property Agency, a state legal entity and legal successor of Agriculture Property Agency of the State Treasury, created based on the Act of 19 October 1991 on Management of Agricultural Property Stock of the Treasury (The Act..., 1991). The Agency operated as fiduciary institution, ordered by the State Treasury to execute ownership rights and other rights in rem pertaining public property in agriculture. The Agency performed activities previously pertinent to Agriculture Property Agency of the State Treasury with respect to regulations included in the Act on Shaping of the Agricultural System of April 11, 2003 (The Act..., 2003). Article 1 of this Act determines rules of shaping the agricultural system in the country in order to improve spatial structure of agricultural holdings, prevent excessive concentration of agricultural real estate and promote conducting agricultural activities by people with proper qualifications. As a result of nationwide operation, Treasury Agricultural Property Stock acquired a total of ca. 4.74 million ha, including lands from 1666 state-owned agricultural holdings, which constituted 79.4 % (3.76 million ha), whereas other lands came from State Land Fund (12.7 %) and from other entitlements (7.9 %) (Banski J., 2011; Mickiewicz B., 2013; Sadowski A., 2014; Takacs-Gyorgy K., 2010). The process of acquiring was practically finished in 1995 (Mickiewicz A., Mickiewicz B., 2013; Sadowski A., Takacs-György K., 2005). Participation of public sector in use of land and therefore in agricultural production showed high territorial diversification (Banski J., 2014; Dzun W., 2015). Largest share of state ownership in agriculture was present in northern and north-western part of Poland, where, in 7 voivodeships, Treasury Agricultural Property Stock acquired 3.71 million ha,

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78.5 % of total (Report..., 2017). One of the voivodeships with largest share of public ownership in agriculture of Warmińsko-Mazurskie, in which TAPS acquired 820.6 thousand ha, which constituted 17.3 % of nationwide acquisitions (Report..., 2017). In consequence, scale of issue and result of ownership transformations in public sector agriculture also vary between regions (Przygodzka R., Mioduszeński J., 2016). In the end of 2016, Treasury Agricultural Property Stock contained ca. 1.4 million ha (29.2 %), 73.8 % (1.02 million ha) of which was leased. At the same time, the treasury stock in Warmińsko-Mazurskie Voivodeship permanently distributed 662.0 thousand ha, 81.9 % of which through sale, while out of remaining 152.2 thousand ha, majority is being leased (118.1 thousand ha) (Report..., 2017).

Multiple issues occurred in regions dominated by state ownership prior to 1989 due to privatisation of state agricultural holdings. Because of these issues, monitoring of structural changes in agriculture and economic condition of farms still has both cognitive and application significance (Koloszko-Chomentowska Z., Sieczko L., 2014; Kowalski A., Rembisz W., 2005; Zietara W., 2013; Mioduszeński J., Niedzielski E., 2012; Rynek..., 2014). Hence, the objective of conducted research was to identify factors affecting functioning and development of agricultural holdings using lands purchased or leased from Treasury Agricultural Property Stock. Achieving this goal should provide an answer to the question, which factors stimulate and which hinder management of agricultural real estate coming from Treasury Agricultural Property Stock. Performing the research following tasks enabled the accomplishment of the purpose: studies of the literature, analysis of legal acts, the assembly and analysis of statistical data, gathering opinions of lessees and buyers of agricultural real estate in Warmińsko-Mazurskie region and processing and analysis of achieved results.

The scope of the research included external determinants (barriers) resulting from macro-environment, such as: formal (legal), economic (real estate prices, profitability of production), political (objectives of agricultural policy) and barriers coming from microenvironment. In the research, an opinion survey method was used, realized through questionnaire technique and conducted in second half of 2016. The questionnaire was sent to 179 lessees and buyers of State Treasury real estate, whereas 127 respondents (70.9 %) decided to answer and return the surveys back. Out of these, 119 questionnaires (66.4 %) were filled completely and correctly. In order to obtain answers to raised research questions, statistical analyses were performed using IBM SPSS Statistics 24. Using these tools, descriptive statistics analyses were conducted as well as Kruskal-Wallis tests for selected variables. Statistical significance value for this paper was set to typical $p < 0.05$. Results with p in range between 0.05 and 0.1 were considered as results close to statistical significance (statistical trend level). In the first step, basic descriptive statistics were calculated for analysed quantitative variables together with Kolmogorov-Smirnov test which indicated that distribution of all analysed variables is entirely different from normal distribution. Hence, analysis utilizing non-parametric tests was necessary. Analysed agricultural holdings were divided into three sets. First set contained farms with acreage of less than 50 ha, second, holdings between 50 and 100 ha and third covered holdings with over 100 ha of land. Descriptive statistics methodology was used for analysis and assessment of results of the survey, statistical data from Agricultural Property Agency (ANR) and yearbooks for agriculture and rural areas published by Central Statistical Office (GUS).

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Research results and discussion

Among the 119 respondents, vast majority (99.2 %) managed the farm themselves, whereas in one holding a person was employed for management. The respondents were dominated by young people with two thirds not exceeding 50 years of age. The largest group (29.4 %) were people in age range of 41-50 years and 27.7 % of them were in age of 51-60 %. More than one in five people (23.5 %) were in age range of 31-40 years. Relatively small group was that of people over 60 years old (6.7 %). For the purpose of analysis and assessment, statistical data was considered in division (grouping) according to spatial groups and in general. In general, respondents were managing a total of 10.1 thousand ha (arable lands constituted 91.2 %) located in 19 powiats (LAU 1 equivalents) in Warminsko-Mazurskie region. Apart from the privately-owned land, the structure of ownership and use is dominated by arable lands from Treasury Agricultural Property Stock, which constituted 41.6 % (ca 5.5 thousand ha) of total. Almost half of it (2.7 thousand ha) were repurchased, 16.7 % came from private owners, $\frac{3}{4}$ of which (ca 1.1 thousand ha) was purchased and the rest was used based on lease agreements with their owners. Analysis of working experience in agriculture indicates that respondents have many years of experience and good background for managing agricultural holdings. Vast majority of respondents (99.2 %) obtained the experience while working in their own holding, whereas 1 in 18 had also been employed in state agricultural holding and every third respondent also worked on other farm. Therefore, a conclusion can be made that opinions obtained from the respondents are reliable.

The aim of conducted research was, among others, to identify factors stimulating and hindering functioning and development of agricultural holdings using arable lands belonging to the State Treasury. Significance of each individual factor was assessed by respondents on 5-point scale, where 5 points indicated high significance of given factor to functioning and development of farms, whereas 1 point marked an insignificant factor. According to the respondents, the most significant factors were those with impact on efficiency of the holding with reflection in the profitability of agricultural production shaped mostly by unstable prices of products (4.4), costs of agricultural production (4.3), prices of means of production (4.2) and demand for products made in the holding (4.0). Great significance to management of farm is also indicated for resource factors, such as: size of the agricultural holding (acreage of arable land – 4.3), possession of proper machinery (4.2), quality of available land (4.0). Relatively significant are also such factors as geographic location of the farm and climate conditions in given region (3.7), which determine level of costs and capability of obtaining sufficient income dependent on level of production (yields) and options of sale. Financial barrier referring to accessibility of investment capital also has great impact on development of agricultural holdings. This barrier may result from number of procedural requirements for obtaining subsidies from European Union (3.7) (this problem is pointing also by Wigier M., 2011), formal and legal requirements for obtaining credits (3.5) and debt service costs coming from, among others, general level of debt (3.3). Such perception of financial situation of agricultural holdings is affected by formal and legal regulations pertaining purchasing (3.5) and leasing of agricultural real estate (3.2), which, in turn, determine levels of payments for acquired land (3.6) and level of rents for agricultural real estate (3.6), levels of payments for other acquired property (buildings, constructions and other objects – 3.4) as well as required public burdens (e.g. land tax – 3.2). This is a result of a fact that respondents rarely use hired labour force and employ few permanent and seasonal workers. This, however, may have a great significance from

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the intensification of production point of view. One of the reasons for low level of employment may also be high costs of employing and maintaining workers, particularly due to seasonal character of work in agriculture as well as small number of people with proper qualifications and motivation for work (Krzyzanowski J., 2014; Kowalski A., 2011). Much smaller significance is that of insurance of property (2.9) and social security fees (2.7), mostly due to relatively low level of such services.

In the next step, analysis was conducted on whether size of agricultural holding has influence on different perception of factors affecting its functioning and development. Twenty-two factors described above were taken into account. Kruskal-Wallis test was conducted for each factor (respondents were to assess strength of each factor on 5-point scale, where 1 is lowest influence and 5 is highest), which indicated differences exist between three compared sets of agricultural holdings in terms of assessed influence of two factors, namely size of the farm (acreage of arable land) and taxation (land tax). Following results were obtained:

- Kruskal-Wallis test for farm size factor - $\chi^2(2)=6.576$, $p=0.037$, average rank for set 1=68.24; average rank for set 2=51.26; average rank for set 3=57.63;
- Kruskal-Wallis test for taxation level factor - $\chi^2(2)=7.600$, $p=0.022$, average rank for set 1=67.95; average rank for set 2=59.96; average rank for set 3=46.80;.

Additionally, for both factors comparison in pairs was conducted in order to determine exactly between which sets statistical differences exist. Obtained results indicate that differences in case of farm size factor occur between sets of smallest holdings and those with acreage within range of 50-100 ha (statistical significance was adjusted using Bonferroni correction). For the former, average influence of this factor was 4.48, whereas for the latter this value was 4.05. In case of factor of land tax levels, statistically significant differences occurred between the smallest and the largest holdings. Respondents managing the largest farms rarely indicated greater significance of this factor for functioning and operation of agricultural holdings (average of 2.77, as compared to 3.44 in set of farms smaller than 50 ha). Conducted analysis shows, that size of agricultural holding affected perception of influence of these two factors, i.e. size of farm (acreage of arable land) and levels of taxation (land tax), on functioning and development of agricultural holdings. In case of other 20 factors, their perception was statistically independent from the size of agricultural holding. Assessments of individual factors made by respondents from various groups are similar. The most important factor influencing functioning and development of conducted agricultural operation in case of holdings below 50 ha in total acreage was production profitability, a derivative of costs of agricultural production, unstable prices of products and scale of production resulting from the size of the farm, which gives very little possibilities of modifying production profile. In case of holdings with over 100 ha of arable lands, the most important factor determining functioning and development of agricultural holdings is scale of production resulting from the size of farm (acreage of arable lands), although soil quality, unstable prices and available machinery are also of significance. In case of holdings in range between 50 and 100 ha, the greatest significance is attached to profitability of agricultural production resulting from unstable prices of products and production costs.

Another analysed issue was respondents' behaviour and their potential decisions and actions pertaining acquired agricultural real estate in case when their holdings would find itself in difficult financial situation. Respondents had opportunity of selecting up to three options out of twelve provided. Respondents indicated that primarily they would take actions that do not require

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significant expenses or actions limiting production potential of the agricultural holding. In their opinion, they would use external sources of financing and attempt to solve the difficult situation by taking a bank credit (57.1 % responses). According to the respondents, the credit would allow for a relatively quick solution to a difficult situation and additional "time" would let them take further actions aimed at improvement of economic situation. Subsequent action that would be taken by the respondents are rationalization of personal budget by limiting personal expenses (54.6 %) and legal actions, within which they would ask for extension on payments of their existing obligations, gaining time to take necessary steps towards the solution. Frequently selected option was also utilizing possibility of a loan from family or friends. Should the aforementioned solution not bring improvement of the situation, the respondents would reduce size of production by selling necessary stock (30.3 %) and part of animal production (21.0 %). Less popular solution was sale of part of owned land (15.1 %) and action towards changing the profile of production (8.4 %). A few respondents suggested readiness to return acquired fixed or working assets to owners/contractors (6.7 %) or sell some of the machinery. Only 2.5 % of respondents indicated that one of possible solutions would be finding a business partner in possession of necessary funds or loan from non-bank institutions.

The subsequent step in analysis was determination whether statistical correlation exists between size of agricultural holding and action potentially taken by their owners in case of difficulties with liquidity. Twelve factors were taken into account. Kruskal-Wallis test indicates that perception of such preventive measures as loan from family and friends ($\chi^2_{(2)}=11.394$, $p=0.003$, average rank for set 1 =67.01, for set 2 = 63.01, for set 3= 44.40), extension on credit payments ($\chi^2_{(2)}=11.783$, $p=0.003$, average rank for set 1 =55.49, for set 2 = 53.38, for set 3= 76.12) and change of production profile ($\chi^2_{(2)}=6.985$, $p=0.030$, average rank for set 1 =64.52, for set 2 = 58.05, for set 3= 55.00) were perceived differently in three analysed sets of respondents. In case of financial problems, smallest holdings owners were more likely to use financial support from family than owners of medium holdings and much more likely than owners of largest farms. Similar observations can be made in case of change of production profile factor. Small holding would consider changing profile of production if facing financial difficulties. In turn, largest holdings attached much greater importance to factor referring to possibility of extension on their credit payments. In case of smallest and medium farms, this factor was considered much less important. Perception of remaining 9 factors was similar in all three sets of holdings.

Significant change in circulation of agricultural real estate was started by adoption of Act on Shaping of the Agricultural System of 5 August 2015 (The Act..., 2015), which introduced limitations aiming at preventing purchasing land by foreigners after the end of 12-years protection period in 2016, as well as speculating on market of agricultural land. The justification of new regulation was conviction that Polish arable lands will become objects of interest for buyers from other European Union countries, particularly those, where prices are higher and circulation is regulated by the state (Przygodzka R., Mioduszewski J., 2016). As an effect of changing management policy of Treasury Agricultural Property Stock, Act on Ceasing Sale of Properties belonging to Treasury Agricultural Property Stock was introduced and adopted on 30 April 2016 (The Act..., 2016). Basing on this act, sale of agricultural lands from TAPS with acreage over 2 ha was stopped in general and the basic form of management became leasing. Selling larger areas requires obtaining proper permissions.

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Opinion survey conducted among the owners of agricultural holdings indicates that primary phenomenon occurring on the market will be greater difficulties in both selling and buying of agricultural lands (76.5 %), which will in turn lead to reduction of number of people willing to purchase land (63.9 %). According to over half of respondents (50.4 %), limited opportunities of investing in land and treating it as capital investment will result in decrease of prices of agricultural lands. In their assessments, one out of three respondents (35.3 %) suggested this may lead to significant increase in popularity of leasing as a form of management, since role of the Agency will include special supervision of trade of agricultural land, both public and private. One third of the respondents suggested this may lead to slowdown in changes in agrarian structure, whereas every tenth argued this will accelerate these changes. According to 1/3 of respondents, introduction of these regulations will result in increase of rents and according to 17 % - decreased thereof. Paradoxically, all of them may be right, since any changes will stem from situation on the market and demand-supply relations in individual regions. According to 1/5 of respondents, introduction of limitations in land trade will enforce stricter control of sources of financing for the acquisition of land and will indirectly affect profitability of agricultural production.

Subsequently analysed issue was whether size of agricultural holding affects perception of consequences of introduction of Act on Shaping of the Agricultural System. Results obtained by consideration of twelve factors in Kruskal-Wallis test indicate that perception of consequences of the aforementioned act was similar regardless of the size of agricultural holding with exception of two factors. These exceptions were increase in difficulties in buying and selling of agricultural land ($\chi^2_{(2)}=6.243$, $p=0.044$, average rank for set 1 =53.77, for set 2 = 61.79, for set 3= 68.05), which in case of holdings with over 100 ha of land were selected notably more frequently than in case of smallest farms, and issue of slowdown of changes in agrarian structure. Kruskal-Wallis test ($\chi^2_{(2)}=7.678$, $p=0.022$, average rank for set 1 =51.71, for set 2 = 65.41, for set 3= 66.78), indicates that largest holdings selected this consequence much more frequently in comparison to the smallest farms. The remaining ten consequences of introducing this act were perceived similarly regardless of size of the holding.

Conclusions, proposals, recommendations

Over 25 years of activities pertaining utilization of property previously belonging to state agricultural holdings as well as public land coming from other sources significantly reduced share of public property in agriculture, leading to strengthening of position of privately-owned farms. Research results presented in this paper depict opinions of buyers and lessees of agricultural property belonging to the State Treasury. These results allow to formulate the following conclusions.

- 1) According to opinions of the respondents, large interest is being taken in utilization and development of agricultural property belonging not only to the State Treasury, but also to the private owners. Analysed agricultural holdings covered a total of 10.1 thousand ha with 91.2 % of that in arable lands. In structure of land, the largest share was that of purchased land (41.6 %), 29.7 % of which was bought from Treasury Agricultural Property Stock, whereas share of leased land was 34.7 %, 29.9 % of which was leased from TAPS. This indicates that significant part of land came from private market.
- 2) Factors, that respondents considered important to efficiency of functioning, were primarily unstable prices of agricultural products, high costs of production, prices of means of production

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and demand for goods produced in the holding. Large impact is also carried by factors pertaining to available resources, such as size of the holding (acreage of arable land), possession of proper machinery and quality of soil.

- 3) Financial barrier, resulting from availability of capital required for development, i.e. subsidies and grants from European Union and formal requirements for obtaining credits as well as costs of debt service, is also considered very significant.
- 4) Decisions and actions taken in reference to acquired agricultural properties in case of economic and financial difficulties would be primarily focused on activities not requiring significant expenses. In opinion of the respondents, most beneficial solution would be to obtain a short-term, external source of financing, e.g. a credit. Respondents indicate that such credit would allow for relatively quick solution of current difficulties, and additional "time" would allow them to implement further actions aimed at improvement of their financial situation, such as rationalization of budget, application for extension on payments on existing debts or loan from family and friends. Should such measures prove insufficient to improve financial situation, respondents would reduce size of their production by selling essential stock and some of animal production. Less popular action would be sale of part of owned land and activities aimed at changing the profile of production.
- 5) In their assessment of changes in legal regulations shaping agricultural system in Poland, respondents indicated denoted dangers stemming from limitations placed on land circulation and increased control. According to almost a half of respondents, the prices of land will decrease, however, due to increased interest in leasing, rents will rise, thus reducing the profitability of production.
- 6) In general, opinions of respondents on analysed issues were very similar, regardless of size of agricultural holdings owned or managed by them.
- 7) Conducted research indicate that from among the factors affecting functioning and development of agricultural holdings utilizing land purchased or leased from Treasury Agricultural Property Stock, the largest importance is attached to those pertaining to the market, particularly prices of agricultural products and prices of agricultural means of production. According to the majority of the respondents, accessibility of external sources of financing is also essential. One important aspect should also be taken into account, namely, both purchased and leased land is for many farmers a specific form of capital investment. This is furthermore attested by the fact that, although respondents suggested various courses of action in case of financial difficulties, in general they did not declare willingness to sell acquired land. Hence, conclusion can be made that essence of farmers' activities is rational management of available resources in order to achieve profitable production. To this end, introducing temporary limitations on circulation of agricultural land is not beneficial. On one hand, these limitations affect farmers' discretion in matters of shaping the size of their holding and scale of production and, on the other, increase uncertainty pertaining future solutions in terms of agricultural land trade resulting from agricultural policy.

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