

MOTIVES OF ECONOMIC DECISIONS OF LITHUANIAN AGRICULTURAL ENTITIES TO DEEPEN FARM SPECIALISATION

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Abstract

This study aims at determining the main motives of economic decisions of Lithuanian agricultural entities to deepen farm specialisation. One of the assumptions is that the concentration and dominance of cereals farming is becoming more pronounced in Lithuania. In the course of the research, the methodology of expert evaluation of the motives of agricultural entities and economic decisions to deepen the concentration of economic activities in certain farming sectors was developed. Research was carried out on the basis of these considerations and decision-examination. Upon completion of the expert evaluation, the results of the study are supplemented by the evaluation of statistical data. The specialisation in crop production is strengthening in Lithuania and at the same time displacing the development of animal husbandry. The main motives of that are: the pursuit of profit and stable income, the availability of consulting services, per area payments, access to EU support (in general) and coupled area support. Social motives for deepening the economic activity through specialization more reflect the general motives of farming and living in rural areas as a lifestyle or tradition. The results will serve in making policy and business decisions and other research.

Key words: specialisation, concentration of farm activity, farmers' decision, farming motives, small farms

INTRODUCTION

A trend towards farm specialisation as an increasingly relevant strategy for farmers was observed in the more industrialized countries since the middle of the last century [2]. A similar view was held by Bowler [3] in the case of the European Community. He stated that the specialisation, intensification and concentration processes within the farm sector have been associated with regional changes in the agricultural production. Also, he held the stance that “these processes form part of the larger trend towards farm modernisation or industrialisation which has transformed agriculture throughout” (pp. 14). The concept of specialisation and intensification as the means of increasing agricultural production dominated in discourses about agricultural development and modernisation for a fairly long time [9].

According to Bowler [3] the specialisation process in agricultural production begins when individual farmers concentrate their

resources of land, labour and capital on a narrow range of products such as cereals, milk or poultry to the exclus. Due to agricultural production specialisation and scale enlargement farming became more capital-intensive [2]. The agricultural intensification essentially “refer to a process whereby inputs of capital and/or labour are increased to raise the productivity or yield of a fixed land area” [28]. Agricultural productivity represents a worldwide goal for agriculture research as a response to growing food, feed and energy demands [1], but effective use of resources is not only about the economic productivity growth on-farm level.

On the other hand, the general trade-offs between intensive agricultural production and the loss of ecosystem services have commented in literature [10; 15; 26; 30; 29]. Agriculture faces the pressure towards adoption of sustainability practices both by policy makers and consumers [1]. However, the long-term changes in the quantity and patterns of ecosystem service delivery in

period of considerable agricultural intensification were not mapped and analysed [14] and the interplay of specialization of agricultural production and ecosystem functions and services has not been studied in detail [15].

It should be noted, that the scientific literature highlights the lack of diversification of economic activities as a problem that needs to be addressed, which directly increases the risk of economic activities [8], the relationship between specialization and diversification in farming [20; 21; 12]. A large number of researchers devote themselves to researching the motives of farmers, to engage in agricultural activities in general, e.g. motives of young farmers to start farming [23; 22; 16; 4], motives for setting up new small businesses [13], or higher quality acceptance of claims, e.g. organic farming [25; 27; 12; 19]. In this context, it is not the agriculture specialization itself that is identified as a problem to be addressed, but the scientific problem to be solved is insufficient degree of risk assessment in farming and analysis of factors influencing farming motives to understand farmers' behaviour.

In 2011, the European Commission (EC) has stressed that increasing demand for some resources will eventually lead to shortages and higher prices, which will inevitably affect the European Union (EU) economy. Resources must be used more efficiently throughout their life cycle, from extraction, transport, recycling and consumption to waste disposal. That is why the EC urges resource efficiency. This means creating higher value with lower material costs and other uses and here the farmers' choices and decision are important.

This study aims at determining the main motives of economic decisions of Lithuanian agricultural entities to deepen farm specialisation. One of the assumptions is that the concentration and dominance of cereals farming is becoming more pronounced in Lithuania.

Literature review

High level of agricultural production specialisation allows farms to be technically efficient, acquire highly specific production

skills and apply the latest production techniques [9]. Specialization of agriculture is often equated with its intensification or industrialization, which stimulated productivity of labour, land and capital as well as the profitability of agricultural activities [2; 5; 7; 6; 11]. Economic benefits of farm specialization are very closely linked with the presence of economies of scale in agricultural production that results in lower costs per output unit [15]. However, in spite of trends of specialisation and upscaling, farmers' incomes in Europe are under high pressure, due to consequences of changes in the price scissors (the price of industrial goods relative to that of agricultural goods). Farmers' incomes are substantially less than the average income of all professions, even with an important share of farmers' income provided through EU subsidies [11]. Kostlivy and Fuksova [17] found that different types of subsidies can have a different impact on the technical efficiency of farms of different sizes. Staniszewski and Borychowski [24] noted, that subsidies prove to have a significant effect on efficiency only in the case of the largest farms, where efficiency is generally high. High extent of specialisation also leads the farms highly dependent on the commodity market(s) which increasing their economic vulnerability and often compromising their economic sustainability [9]. On the contrary, based on facts or things that the most farms are multi-product farms, Chavas [5] concludes that the benefits of agriculture diversification are significant. He holds the view that these economic benefits are twofold: the reduced cost associated with producing multiple outputs (presence of economies of scope), and the risk reducing effects of diversification.

Moreover, the intensification and industrialization of agriculture gradually violated its previous harmony with the natural environment in such ways as the loss of food, soil, water and biodiversity and air pollution [7]. There is a view that when agricultural specialization increases and moves to broader scales, ecosystem functions can also be endangered at broader spatial scales [15]. Therefore, raising the level of agricultural

specialization is one of the main problems of loss and damage to ecosystem services facing, especially in the industrialized agriculture countries.

The developed world has been transferred into the society and economy based on knowledge. We also have to look in that direction. Food production is world-wide business. The increase in total revenues, profit and added values should become primary business motive to all economic entities [25]. Šimpachová Pechrová et al. [23] presented the main motive of young farmers to enter was the wish to continue with farming on the farm of the parents or other relatives and to work in nature and with animals. The hardest was to purchase the agricultural land, administrative burden and ensuring the finances for the development and for start-up. Hence, to facilitate the start-up it is useful to support the land purchase and provide investment subsidies [23]. Min et al. (2017) conducted a research, where found that smallholders with higher risk perceptions specialize in rubber farming less often and are more likely to diversify their land use, thereby contributing to local environmental conservation in terms of agrobiodiversity. The land use choices of smallholder rubber farmers are also associated with ethnicity, household wealth, off-farm employment, land tenure status, altitude and rubber farming experience [20]. Small farms may search for strategies that enable them to increase the turnover by increasing output or decreasing the equity they hold [18].

The primary motive for engaging in organic farming is that the producers want to manufacture safe and healthy food primarily for themselves and for their family members. The purchase of organic seeds and seedlings, as well as of plant protection material and organic fertilizers, is said to be the biggest problem. There are still many other problems, such as a complicated procedure for obtaining certificates of organic production, poorly drafted legislation, the high cost of certification and analyses, low incentives from the government, but also the still low consumer awareness about the importance of organic food. The most important measure for the expansion of organic farming is an

increase in government incentives in the form of subsidies or soft loans. It is necessary for the producers to team up into organic food associations in order to jointly meet the demand for organic products in the domestic and international markets [27]. There are many motivations for engaging in or developing organic farming, but in the study of Makutėnienė and Makutėnas [19], the respondents indicated the desire to live a healthy life (75%) and pollute the environment less (67%). Thus, farmers are motivated to protect their own and their family members' health, and their environmental attitudes are strong. As already mentioned, one of the external factors influencing farmers' decision in choosing / developing organic farming is direct support [19]. Hansson et al. [12] study was based on quantitative data obtained from Swedish farmers who self-reported that they ran other ventures in addition to their agricultural production enterprises. Factor analysis revealed a structure with two underlying motives for starting a venture outside conventional agriculture, namely 'business development for reasons to reduce risk and to use idle resources' and 'business development for social and lifestyle reasons'. The factor scores obtained were related to measures of involvement of family members in new activities on farm level. The results showed that the motives for starting new ventures were dependent on the situation of the farm family [12]. Consumer-oriented diversification activities, such as direct sale ("deepening") as well as tourism services and care farming ("broadening"), are common business strategies of farms within urban areas. Farm characteristics, which encourage the implementation of "deepening" strategies, are: larger farm sizes, high-value production, organic farming, and livestock production. By contrast, the consumer-oriented "broadening" strategies tourism services and care farming prevail on smaller farms and on farms with horses and higher grassland shares. Agricultural extension services increase the odds to diversify the main activities of farms [21].

MATERIALS AND METHODS

The method of expert evaluation is suitable in cases when it is very difficult or practically impossible to apply objective computational or empirical research methods. In the case of this study, the aim is to test the theories spread in the public sphere that concentration or dominance of activities is observed in the cereals sector, which could distort market conditions for other market participants. Expert assessment methods are used to find an effective solution in complex informal situations, solving non-standard problems. The peer review method improves the quality and rationality of decision-making, as experts in a given field can be involved in all stages of decision-making. Expert assessment is understood as a generalized opinion of a group of experts, to which expert knowledge, experience and intuition are applied. This method makes it possible to reconcile the opinions of individual experts and to form a common approach to the problem under consideration.

The study was conducted in several stages. To determine the change in the agricultural specialisation in Lithuania, the following structural indicators were used: the share and growth of output by agricultural products categories at whole agricultural industry and at farm levels; and the share of farms by different types of farming in total farms number. The empirical analysis of agricultural specialisation at national level is based on two EUROSTAT's databases such as Economic accounts for agriculture data for 1995-2020 and Farm structure survey in 2005 and 2016 data. FADN data for 2005-2019 were used for the analysis of changes in agricultural specialisation at farm level.

In the second stage, analysis of the scientific literature was carried out in order to single out the factors that may influence the decisions of farmers. The analysis of scientific sources, supplemented by the content analysis of the specialised press sources, professional agricultural publications. The analysis was carried out according to keywords such as "concentration of agricultural activity", "diversification", "barriers to diversification",

"farmers' motivation to engage in certain activities", "farmers' decisions in farming" etc. This allowed to identify factors that could influence farmers' motives to start, change, diversify or concentrate farming activities in particular agricultural sub-sector. All the factors identified during this desk study were summarized and grouped. All factors were grouped according to their nature and three main groups of farming motives were distinguished. In this way, groups of economic, social and environmental factors formed. Based on this breakdown, a questionnaire for experts was developed.

The economic motives listed in the scientific literature and other sources reviewed were the most numerous. They were divided into two additional groups, the first group included factors related to the current situation of the farm and its environment, the decisions of the farm manager, and the second group combined factors arising mainly from the financial situation of the farm and state interventions in the agricultural sector. These factors are identified as financial. In this way, a system of four groups of factors formed.

During the third stage the pilot study was carried out. During the pilot phase of the questionnaire, several randomly selected experts were asked to submit their suggestions for improving the questionnaire. Experts who participated in the pilot phase unanimously replied that environmental factors do not have a significant impact on the concentration or diversification of farm activities and are more confusing than beneficial in the expert assessment. Environmental factors, in expert opinion have a limiting value on the concentration of farm activities, and experts were confused about the need to provide an estimate for each environmental indicator, often chose a neutral value for the estimation. Therefore, it was decided to exclude environmental factors from further evaluation. It can be concluded from the answers of the experts that environmental requirements are important for the economy insofar as their norms are mandatory and the impact is more neutral. Crop rotation requirements could be of greater importance to avoid soil degradation and monoculture cultivation.

Based on the above information, a questionnaire for expert evaluation was developed. Experts were asked to score each factor to what extent it contributes to the deepening of economic activities through specialization, increasing the concentration and dominance of activities in a particular field of farming, on a scale from 1 to 5 points, where 1 – does not contribute at all; 2 – does not contribute; 3 – neither contributes nor contributes; 4 – contributes; 5 – contributes greatly. The questionnaire was supplemented with two open-ended questions in order to find out whether farms in Lithuania tend to diversify their activities and what they see as possible main obstacles to diversification of economic activities. The open-ended questions were selected to assess those possible aspects that may have been omitted in the groups of factors presented, allowing the experts to provide their additional insights into the topic under consideration.

In the fourth phase, an expert evaluation was carried out, involving experts from different fields. An expert in this case is a specialist with knowledge and experience in a certain field (Latin “*expertus*” – experienced) in the agricultural sector. The professional competence of an expert is important for the solution of the problem, which is called the competence of an expert in the methodology of expert evaluation research. An individual expert evaluation method of active interviews was used. The experts did not consult each other and did not know what was included in the study, evaluated the submitted questionnaire individually from the position of the farming field or institution/union/association they represented.

The expert evaluation was attended by experts from the Chamber of Agriculture of the Republic of Lithuania, the Lithuanian Young Farmers and Youth Union, the Lithuanian Association of Agricultural Companies, the Lithuanian Grain Growers' Association, the Lithuanian Farmers' Union and the Kaišiadorys District of the Lithuanian Farmers' Union. Institutions for expert evaluation were selected from organizations representing the Lithuanian agricultural sector. Their participation was voluntary and

unpaid. 3 experts participated in the pilot phase of the study. In the final phase, the study presented and summarized the evaluation results of six experts from different institutions.

The experts and the bodies they represent have been selected in such a way as to maintain the principle of impartiality and to obtain a comprehensive and integrated assessment. The institutions interviewed and the experts appointed by them represent all agricultural subsectors, with different groups of farms, both existing and emerging farms. It was planned to interview more experts representing specific fields of farming (organic farming, horticulture, dairy farming, animal husbandry, etc.), but this idea was rejected, because the study assumes the study of concentration processes in cereal farms and the listed types of farming are often opposed to crop cultivation activities so it could affect the final results. It was presumed, that the latter experts would be interested in highlighting the existence of concentration in the crop sector. In order to extend the study, it could be completed by involving the proposed experts from additional sectors, but then the problem should be formulated more broadly and the tendency of Lithuanian farmers to specialize/concentrate their activities in different agricultural subsectors should be examined.

The expert evaluation (including the pilot phase of the survey) was conducted from 31 August 2020 to 6 November 2020. Experts were contacted by telephone and, for their convenience, the questionnaire was sent to them in addition by e-mail. The experts had additional time to familiarize themselves with the submitted questionnaire and provided their answers and estimates after reflection. This avoids an impromptu, emotional or careless assessment if you are asked to answer the questionnaire immediately by phone without giving an extra time to reflect on the problem.

RESULTS AND DISCUSSIONS

Lithuania has a diverse agricultural sector, producing a range of crop and livestock products (Fig. 1). The mix of agricultural

production is determined by soil type, climate, the historical traditions of agricultural activity, proximity to markets and agricultural

policy. However, output gains have varied widely among different crops and livestock sectors in the last quarter of a century.

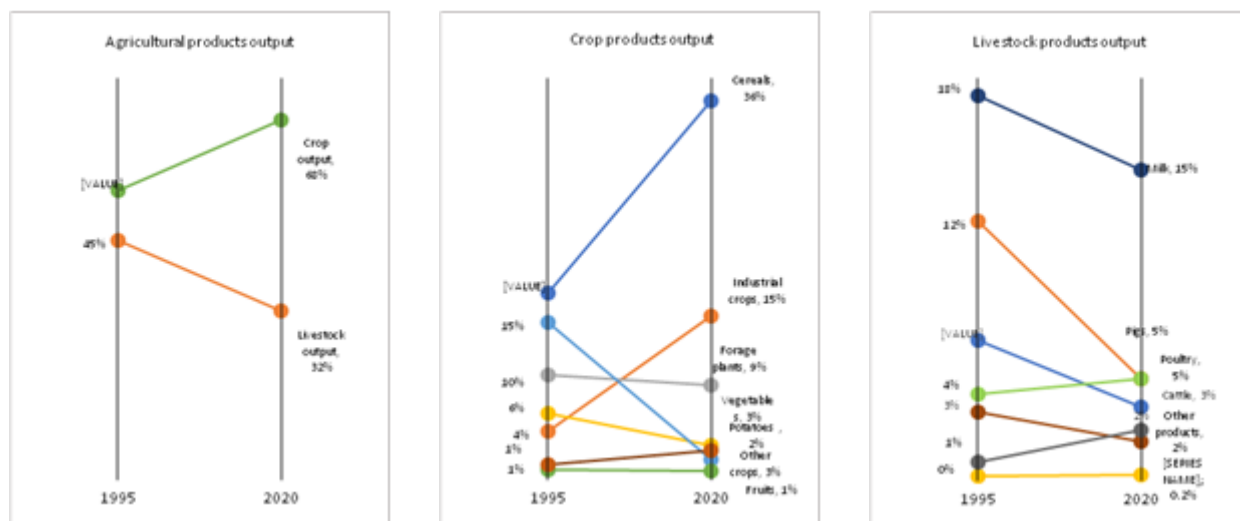


Fig 1. Changing national specialisation in agricultural production 1995-2020 in Lithuania (share of total agricultural output by products categories)

Source: own composition based on the Eurostat data: Economic accounts for agriculture.

During the last quarter of a century, production of cereals and industrial crops (oilseed crops) are the fastest growing segments and now together contribute 51% of the total agricultural products output, outstripping more than doubled their historical share (22%) a quarter of a century ago (Fig. 1, middle panel). On the contrary, forage plants, vegetables, potatoes and fruits production fell sharply (about 50-55%) at the same time. In volume terms, crop production has increased more than 2.7 times, while livestock production has increased only by 14%. Upon

examining the increase volume outputs of over the long-term by crops product categories in greater detail (Fig. 2, left panel), were find that only a few products account for most of the increase and the concentration of crop production. There also continue to be stark differences between crops and livestock production. Volume of production of most livestock products fell, with the exception poultry meat and eggs (Fig. 2, right panel) and now collectively accounts for less than a third of the total agricultural products output.

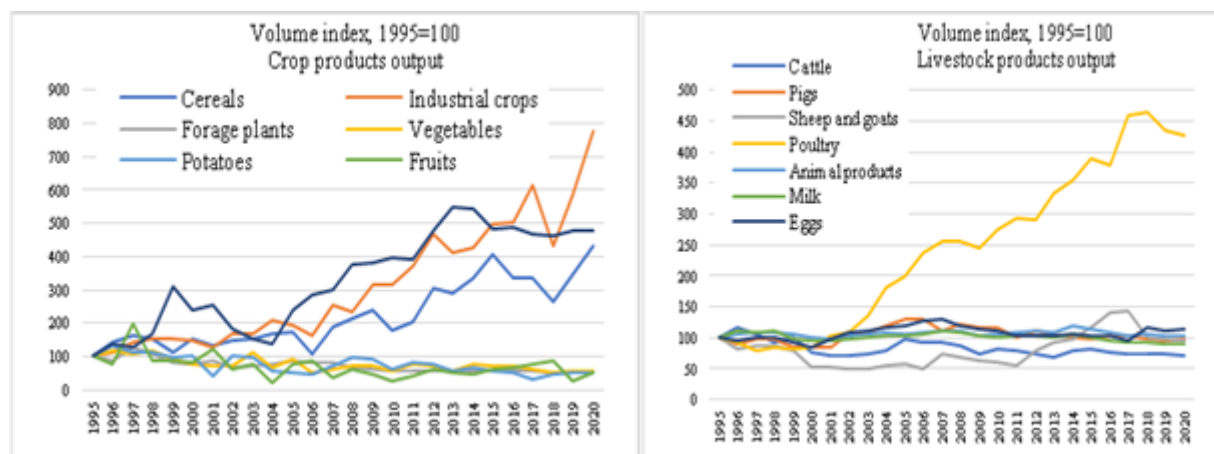


Fig. 2. Cumulative growth of output by agricultural products categories 1995-2020 in Lithuania

Source: own composition based on the Eurostat data: Economic accounts for agriculture.

In the structure of Lithuania's farms by types of farming, the biggest changes to the farm population over the last fifteen years been an increase in the share of crop-specialist farm businesses and a decline in the share of mixed farm businesses. As shown below (Fig. 3), specialisation in Lithuanian agricultural sector is exemplified by a strong increase in the proportion of farms specialised in cereals,

oilseed and protein crops sector from 2% in 2005 to 22% in 2016, outstripping the historical domination of specialised dairy farms. At the same time in farm structure, have seen a dramatic decrease the share of mixed livestock farms (by 20 percentage points) and mixed farms that combine crops and livestock farming (by 10 percentage points).

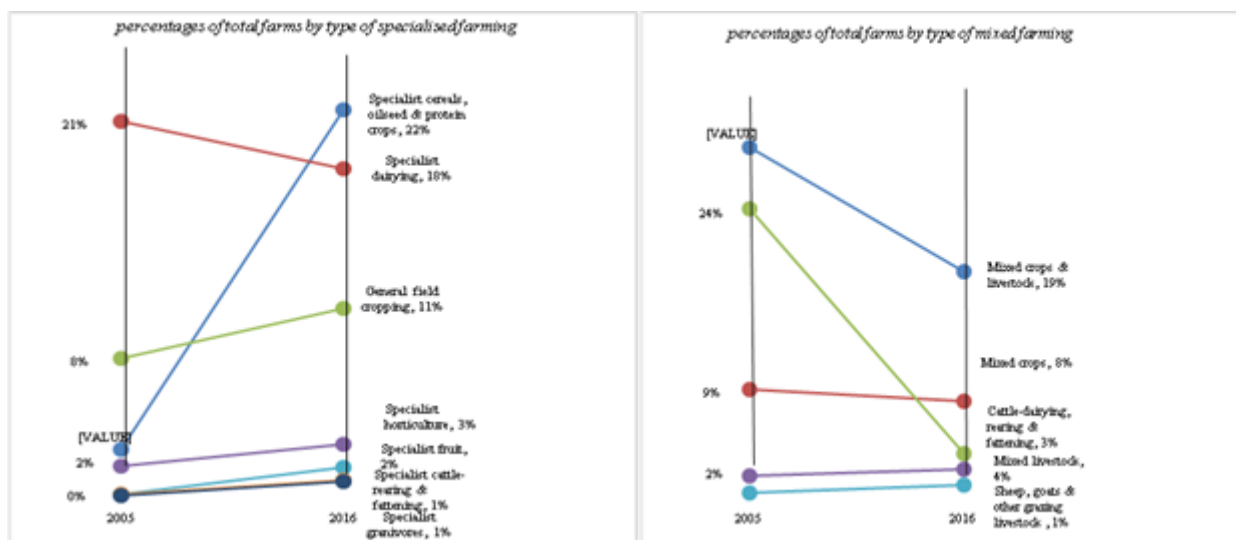


Fig. 3. Changing proportion of farms by different types of farming 2005-2016 in Lithuania
Source: own composition based on the Eurostat data: Farm structure survey.

Upon examining the structural change of total farm output over the long-term across different farm classes in greater detail by

crops and livestock product categories (Fig. 4).

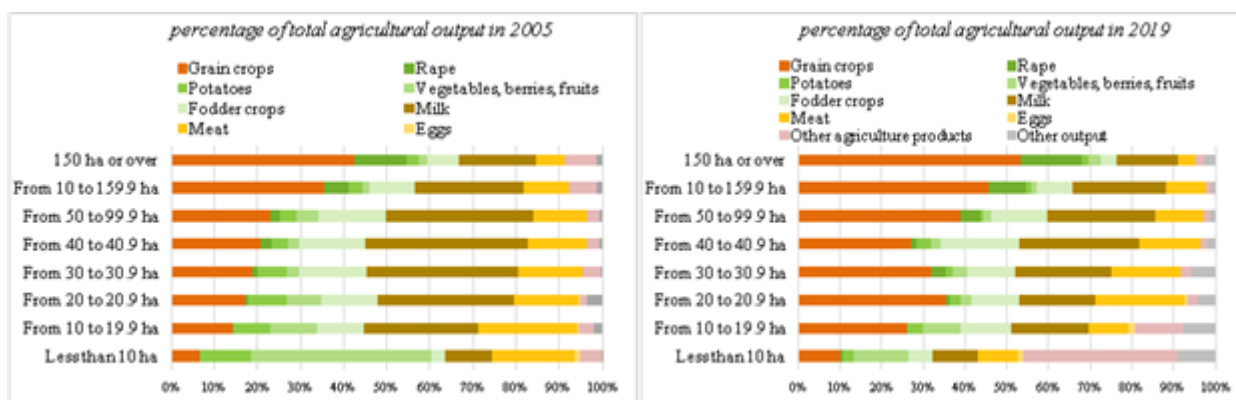


Fig. 4. Changing farms' specialisation in agricultural production across different farm classes 2005-2019 in Lithuania (share of total agricultural output by products categories)
Source: own composition based on the FADN data.

In Fig.4, we may find that, the share of crop production has increased in all physical size classes of farms except the smallest farms class. Only two crops products account for most of that increase and the concentration of

production: i.e. grain crops and rape. The combined share of both products increased by 13-19 percentage points across different farm size classes, with the exception of small-scale farms (less than 10 ha) and medium - sized

farms (from 40 to 40.9 ha), where this share increased by 4 and 5 percentage points respectively. On the contrary, in small-scale farms class, the share of share of both grain crops and rape fell by a tenth, while the share of various other crop products increased dramatically by almost a third (i.e. 32 percentage points). As for the development of livestock production over the same long period, a fell in the share of milk production was observed in all farm size classes, and the largest fell were in the two farm size classes (from 20 to 20.9 ha and from 30 to 30.9 ha) by 12 percentage points in each. The share of meat output increased by 7 percentage point in only one farm size class from 10 to 19.9 ha).

Moving on to the results of the expert evaluation, five out of six experts, answering the question whether they notice manifestations of deepening the concentration/specialization of agricultural activities in Lithuania, when economic entities expand their activities in one direction of farming, noted that they see such a trend (Fig. 5). It was pointed out that the concentration of activity in crop production was noticeable, followed by cattle farming, as well as the poultry and pig farming sectors.

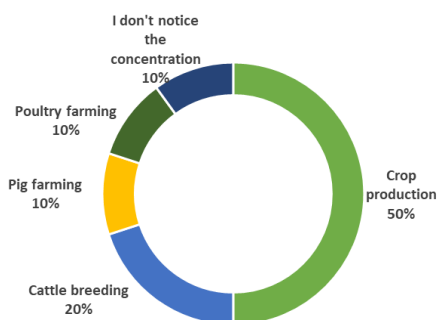


Fig. 5. Lithuanian agricultural sectors, where experts notice the concentration of activities

Source: own elaboration based on expert evaluation.

Only one in six experts noted the lack of concentration through deepening activities in certain farming sectors and pointed to a natural redistribution of business in search of opportunities to make more profitable use of existing infrastructure. Farmers running farms are looking for opportunities in the beef cattle or poultry sectors, with larger or smaller areas

of land looking for opportunities for crop development. Another expert supplemented these insights by noting that concentration occurs in all branches, but the observed intensity of the process varies.

The following are expert evaluation estimates for different groups of factors, with each expert assigning scores to each factor, the average of the estimates provided is calculated, giving the different experts the same weight.

Among the **economic motives of Lithuanian agricultural entities to deepen their economic activity through specialization**, increasing the concentration of activity in a certain field of farming, three main motives dominate: the pursuit of profit, the pursuit of stable income and the availability of advisory services (Fig. 6).

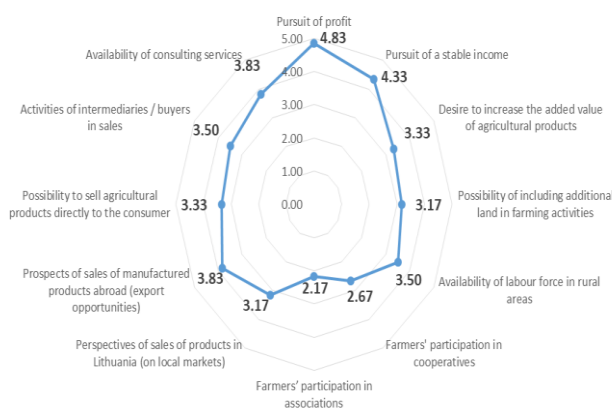


Fig. 6. Assessment of economic motives of Lithuanian agricultural entities to deepen their economic activity through specialization, increasing the concentration of activity in a certain field of farming, average score

Source: own elaboration based on expert evaluation.

Among the factors that **do not affect the increase of the concentration of activities in a certain field of farming**, experts noted the participation of farmers in the activities of associations or cooperatives, which should be a serious signal for the further development of cooperative activities among farmers. Theoretically, cooperation should contribute to increasing the specialization of individual farm groups and achieving economies of scale. Also, it can be seen that Lithuanian experts evaluated advisory services that contribute to increasing the concentration of

activities, which is in contrast to the experience of other countries, when training and advisory activities are focused on risk management and diversification of farm activities.

Among all the **financial instruments that contribute most to increasing the concentration of economic activity**, the most important are: direct area payments, access to EU support (in general), greening payments and coupled area payments for vegetables, fruit, berries, protein crops, sugar beet, seed potatoes and growing cereals from certified seed) (Fig. 7). In general, all financial instruments contributed to the concentration of farm activities in a particular farming direction. This is linked to area payments and crop cultivation.

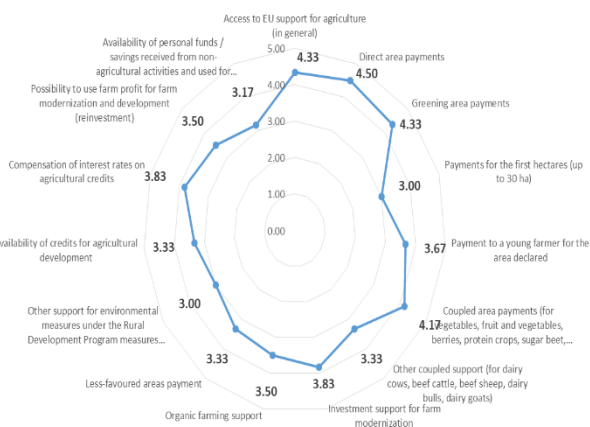


Fig. 7. Contribution of financial instruments available to Lithuanian agricultural entities to the deepening of economic activities through specialization, increasing the concentration of activities in a certain field of farming, average score
 Source: own elaboration based on expert evaluation.

Taking into consideration the **social motives for deepening economic activity through specialization**, increasing the concentration of activity in a certain field of farming, three main ones are identified: 1) available farming experience and knowledge, 2) available managerial/entrepreneurial skills and 3) aspiration to create a job when working on a farm is the main source of livelihood (Fig. 8). There are no social motives that, according to the general expert assessment, would be identified as completely irrelevant to the concentration of economic activity. But it should be appreciated that social motives are more reflective of the general motives for

carrying out farming activities, i.e. the desire to create a job for oneself, and the chosen activity usually depends on the available farming experience and available knowledge and skills.

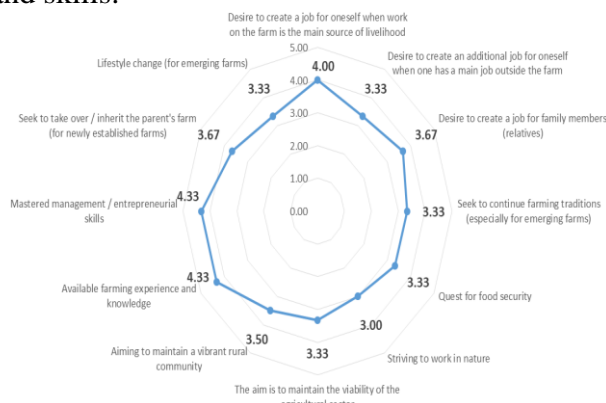


Fig. 8. Social motives of Lithuanian agricultural entities to deepen their economic activity through specialization, increasing the concentration of activity in a certain field of farming, average score
 Source: own elaboration based on expert evaluation.

When asked whether farms in Lithuania tend to diversify their activities, expert opinions differed, but most agreed that the level of diversification was not sufficient but still was an important as main risk management tool or an opportunity to supplement seasonal income. According to the representative of Lithuanian young farmers and the Youth Union, the level of diversification of farming activities in Lithuania is really low, but it is necessary to ensure higher and more stable income from the agricultural sector and to manage risks. There is a lack of education and training on the economic benefits of a diversified economy.

The Lithuanian Grain Growers' Association emphasized that due to the high seasonality (in the grain, horticultural sectors, etc.), farms are looking for activities that could be carried out of season. Extensive livestock and poultry farming directions are chosen.

Representatives of the Chamber of Agriculture noted that farm diversification occurs when new farmers or young farmers come to the countryside, looking for and finding new activities, taking into account the experience of other countries – they chose good and attractive examples, participation in

educational programs, trainings, exhibitions, etc. Farms of young farmers are established by taking over farms from parents and changing activities, e.g. from dairy cow breeding to beef cattle breeding, sheep breeding, poultry breeding, etc., new branches of crop and berry growing are emerging, sometimes also focused on processing – blueberries, quinces, sea buckthorn, nuts, etc. According to the Lithuanian Farmers' Union, diversification of activities allows to reduce business risk, distribute production means and workload more efficiently. Diversification of activities manifests itself in all branches, first of all in the chosen specialization by searching for niche products, for the production of which most of the already acquired machinery, equipment or structures can be used, existing knowledge and experience are applied (this is the cheapest way of diversification). Another process of abandoning narrow specialization and switching to mixed farming or choosing to develop alternative non-agricultural businesses is also observed. This direction of diversification is more often driven by more financially capable farms, which have the opportunity to adequately finance the need to modernize production processes, are able to manage several farm activities at the same time.

Main obstacles to economic diversification of farm activities are: lack of funds, necessary investments to start new activities, unstable purchase prices of livestock (especially dairy), lack of professional knowledge and practical skills, lack of specialized consultants (narrow areas and deep knowledge of specific subjects), poor farmers cooperation, unfavourable political situation, negative public attitude towards farming, new markets for products are needed, and farmers lack marketing knowledge. A representative of the Lithuanian Young Farmers and Youth Union expressed the initiative that many young farmers could create new jobs in order to process the products grown on the farm, but there is a lack of funds for this. Cooperation could be useful here, but incentives are needed, such as support for cooperative farms only. Training and counselling on the benefits

of cooperation, risk management and collaboration are needed. Experts unanimously argued that diversification of activities requires a lot of specific knowledge from different fields, lack of experience, and lack of skills makes it more difficult to manage production and marketing processes.

CONCLUSIONS

Analysing the long-term period, the specialisation in crop production is strengthening in Lithuania and at the same time displacing the development of animal husbandry. It is important to emphasize that significant differences remain between the specializations of farms of different farm sizes, where large farms are specialized in growing cereals and small farmers are engaged in more diversified activities.

In the expert assessment, the experts not only identified the cereals sector, where concentration processes are being monitored, although this sector has been mentioned the most, but it is not less important to focus on other sectors such as livestock, poultry and pig production to those farms that are narrowly specialized.

The results of the research showed that the main motives of Lithuanian agricultural entities to deepen their economic activity through specialization are the pursuit of profit and stable income, the availability of consulting services, per area payments, access to EU support (in general) and coupled area support.

Social motives for deepening the economic activity through specialization more reflect the general motives of farming and living in rural areas as a lifestyle or tradition.

Experts unanimously agreed that diversification of economic activities can benefit the economy as a means of risk management, income support. However, farms choose the direction and extent of diversification based on their available resources and financial capacity. The biggest breakthrough in diversification of agricultural activities is expected from young farmers who come to the sector with new ideas.

The study of the impact of environmental requirements on farming motives should be addressed in the further study, which would allow a detailed assessment of the impact of the latter requirements on farmers' decisions.

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REFERENCES

- [1]Bartolini, F., Coli, A., Magrini, A., Pacini, B., 2016, Measuring environmental efficiency of agricultural sector: a comparison between EU countries, Conference paper at the 4th Annual Conference of the Italian Association of Environmental and Resource Economists (IAERE 2016) At: Bologna, Project: IMPRESA.
- [2]Bosma, R. H., Udo, H. M., Verreth, J. A., Visser, L. E., Nam, C. Q., 2005, Agriculture diversification in the Mekong Delta: farmers' motives and contributions to livelihoods, *Asian journal of agriculture and development*, 2(1362-2016-107656), 49-66.
- [3]Bowler, I. R., 1986, Intensification, concentration and specialisation in agriculture: the case of the European Community, *Geography*, 71(1), 14-24.
- [4]Carbone, A., Subioli, G., 2008, The generational turnover in Agriculture: the ageing dynamics and the EUR support policies to young farmers, In: 109th EAAE Seminar: The CAP after the Fischler reform, 1-19. http://ageconsearch.umn.edu/record/44731/files/A074_Carbone.pdf, Accessed on 1 Aug. 2018.
- [5]Chavas, J. P., 2008, On the economics of agricultural production, *Australian Journal of Agricultural and Resource Economics*, 52(4), 365-380.
- [6]Conte, B., Desmet, K., Nagy, D. K., Rossi-Hansberg, E., 2021, Local sectoral specialization in a warming world, *Journal of Economic Geography*, 21(4), 493-530.
- [7]Czyżewski, A., Smędzik-Ambroży, K., 2015, Specialization and diversification of agricultural production in the light of sustainable development, *Journal of International Studies*, 8(2), 63-73.
- [8]Da Silva Moreira Ferreira, A., Loiola, E. Guedes Gondim, S. M., 2017, Motivations, business planning, and risk management: entrepreneurship among university students, *RAI Revista de Administração e Inovação*, 14(2), 140-150.
- [9]De Roest, K., Ferrari, P., Knickel, K., 2018, Specialisation and economies of scale or diversification and economies of scope? Assessing different agricultural development pathways, *Journal of Rural Studies*, 59, 222-231.
- [10]Dunford, R. W., Smith, A. C., Harrison, P. A., Hanganu, D., 2015, Ecosystem service provision in a changing Europe: adapting to the impacts of combined climate and socio-economic change, *Landscape Ecology*, 30(3), 443-461.
- [11]Giller, K. E., Delaune, T., Silva, J. V., Descheemaeker, K., van de Ven, G., Schut, A. G., ... & van Ittersum, M. K., 2021, The future of farming: Who will produce our food?, *Food Security*, 1-27.
- [12]Hansson, H., Ferguson, R., Olofsson, Ch., Rantamäki-Lahtinen, L., 2013, The influence of family, *Journal of Rural Studies*, 32: 240–250. DOI: 10.1016/j.jrurstud.2013.07.002
- [13]Hazudin, S. F., Kader, M., Tarmuji, N. H., Ishak, M., Ali, R., 2015, Discovering Small Business Start-up Motives, Success Factors and Barriers: A Gender Analysis, *Procedia Economics and Finance*, 31, 436-443.
- [14]Jiang, M., Bullock, J. M., Hooftman, D. A., 2013, Mapping ecosystem service and biodiversity changes over 70 years in a rural English county, *Journal of Applied Ecology*, 50(4), 841-850.
- [15]Klasen, S., Meyer, K. M., Dislich, C., Euler, M., Faust, H., Gatto, M., Hettig, E., Melati, D.N., Jaya, I.N.S., Otten, F., Perez-Cruzado, P., Steinebach, S., Tarigan, S., Wiegand, K., 2016, Economic and ecological trade-offs of agricultural specialization at different spatial scales, *Ecological Economics*, 122, 111-120.
- [16]Kontogeorgos, A., Michailidis, A., Chatzitheodoridis, F., Loizou, E., 2014, New Farmers” a Crucial Parameter for the Greek Primary Sector: Assessments and Perceptions, *Procedia Economics and Finance*, 14, 333-341.
- [17]Kostlivy, V., Fuksova, Z., 2019, Technical efficiency and its determinants for Czech livestock farms, *Agricultural Economics – Czech*, 65: 175–184.
- [18]Kryszak, Ł., Guth, M., Czyżewski, B., 2021, Determinants of farm profitability in the EU regions. Does farm size matter?, *Agricultural Economics – Czech*, 67, 2021 (3): 90–100.
- [19]Makuténienė, D., Makutėnas, V., 2010, Assessment of the Impact of External Factors on Farmers' Motivation for Organic Farming. By: Management Theory & Studies for Rural Business & Infrastructure Development, 20(1), 87-99.
- [20]Min, S., Huang, J., Waibel, H., 2017, Rubber Specialization vs Crop Diversification: The Roles of Perceived Risks, *China Agricultural Economic Review*, 2017, 9(2), 188-210.
- [21]Pölling, B., Mergenthaler, M., 2017, The Location Matters: Determinants for “Deepening” and

“Broadening” Diversification Strategies in Ruhr Metropolis’ Urban Farming, *Sustainability*, 9, 1168.

[22]Renko, M., Freeman, M. J., 2017, How motivation matters: Conceptual alignment of individual and opportunity as a predictor of starting up, *Journal of Business Venturing Insights*, 8, 56-63. DOI 10.1016/j.jbvi.2017.06.003.

[23]Šimpachová Pechrová, M., Šimpach, O., Medonos, T., Spěšná, D., Delín, M., 2018, What Are the Motivation and Barriers of Young Farmers to Enter the Sector?, *Agris On-Line Papers in Economics & Informatics*, 10(4), 79-87.

[24]Staniszewski, J., Borychowski, M., 2020, The impact of the subsidies on efficiency of different sized farms. Case study of the Common Agricultural Policy of the European Union, *Agricultural Economics – Czech*, 66(8): 373–380.

[25]Tomić, D., Škorić, D., 2018, Contribution of science and profession to the development of the Serbian villages and agriculture, In *Proceedings of the IAE Scientific Meetings*, 155-180.

[26]Verhagen, W., van der Zanden, E. H., Strauch, M., van Teeffelen, A. J., Verburg, P. H., 2018, Optimizing the allocation of agri-environment measures to navigate the trade-offs between ecosystem services, biodiversity and agricultural production, *Environmental Science & Policy*, 84, 186-196.

[27]Vlahović, B., Puškarić, A., Šojić, S., 2015, Research into Agricultural Producers' Motives for Engaging in Organic Production in the Republic of Serbia, *Petroleum - Gas University of Ploiesti Bulletin, Technical Series*. 2015, 67(2), 31-39.

[28]Warf, B., 2010, Agricultural intensification, In *Encyclopaedia of Geography*, 1, 36-36. SAGE Publications, Inc.

[29]Wartenberg, A. C., Moanga, D., Potts, M. D., Butsic, V., 2021, Limited economic-ecological trade-offs in a shifting agricultural landscape: a case study from Kern county, California, *Frontiers in Sustainable Food Systems*, 5, 91.

[30]Yang, S., Zhao, W., Liu, Y., Wang, S., Wang, J., Zhai, R., 2018, Influence of land use change on the ecosystem service trade-offs in the ecological restoration area: Dynamics and scenarios in the Yanhe watershed, China, *Science of the total environment*, 644, 556-566.