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COMPARISON OF FARM SIZE CALCULATION IN PLANT PRODUCTION IN THE CONDITIONS OF THE SLOVAK AND CZECH REPUBLIC

The agricultural sector in the Czech and Slovak Republic has problems in big and also in small farms. The paper is based on the assumption of the family farm algorithm, which is focused on the plant production. A family farm is represented by two adults and two children. The aim is to calculate the minimum size of the farm in hectare needed to achieve the average income (in the national economy) of the 4-member family in the Czech Republic and in Slovakia.

The algorithms for determining the size of a family farm focused on crop farming in the corn production area in the economic and production conditions of the Czech Republic and the Slovak Republic were given the following inputs: the average annual income of a 4 member family, own costs for chosen crops, prices crops, average subsidies for agricultural land, average annual harvests of chosen crops. Data were obtained from the ministries of agriculture and statistical offices from both states.

We calculate the average 4 member family in Slovakia needs to earn minimum 16 77.44 Euro per year and in the Czech Republic 18 322.08 Euro per year. The results of the paper proved that, according to the model of an average farm focused on crop production, the acreage of 89.99 ha in Slovakia and 122.31 ha in the Czech Republic of agricultural land needs to have one family farm. We are calculating with following commodities: wheat, barley, grain maize, sunflower, oil rape, potatoes and pea.

One way to track changes in farm structure is to examine trends in the average size of holding, or average herd size in the case of livestock farms. However, this measure can seriously underestimate the pace of change where much of the growth (in area farmed, or in livestock numbers) takes place on the larger holdings. The persistence of many small holdings, even though the share of the land or livestock that they control is small and may be falling, tends to mask the extent of structural change as measured by averages.

The aim of submitted paper is to determine the minimum size of agricultural land of a small family farm focused on plant production in the economic and production conditions of the Czech and Slovak Republics.

In the submitted paper the data on farmers has been used in Slovakia and the Czech Republic from the data of business calculations by Research Institute of Agricultural and Food Economics from Slovakia and Research Institute of Agricultural Economy from Czech Republic.

Key words: farm size, agricultural land, crop production, crops, costs, prices, subsidies.

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Problem statement and analysis of recent research. Entrepreneurship on the agricultural land belongs among the oldest economic sectors of every country. Slovakia and the Czech Republic were for many centuries typical agrarian countries. Despite the areal industrialization after 1950 agriculture remained its characteristic feature. Evidential sector organization of agricultural production was created as a result of manufacturing expansion. It was caused by industrialization process. It caused largely one-side orientation of rural regions towards the agricultural activities. Agriculture nowadays is a small but important sector of the economy which has steadily declined since the "velvet revolution" of 1989. In the current era of globalization, especially after the accession to the EU, the position of agriculture is changing especially in the trend of EU CAP reforms [1, 2, 3].

Even today, agriculture is an important source of income and the world's largest business. One-third of the economically active population obtains its livelihood from agriculture. The agricultural sector is one of the main land users in Europe and thus shapes landscapes in rural areas. It has various direct and indirect impacts on the environment and is itself dependent on natural resources. [4] The changing position of agriculture and the differentiated rural areas is also reflected in the theoretical approaches trying to explain this transformation with agriculture seen as one of the sectors and industries in the rural areas which can ensure the sustainability of rural households and the quality of life in rural areas through combination of agriculture and other activities (tourism or other services)

in the frame of multifunctionality concept [5, 6]. There are many authors who are calculating with size of farm and economical results. Some results show that there is a negative relationship between farm size and productivity and positive relationship between credits and productivity. These results were statistically significant in all models at coefficient estimation using the method of least squares and the fixed effect model. According to the reached results by authors Ladvenicová and Miklovičová [7] can say that for Slovak farmers it would be better to operate on smaller size of farm than they do [10]. Many studies estimated that in agriculture there are constant returns to scale. In our case we can follow decreasing returns to scale – each hectare of land leads to the decrease of production. Positive effect can be followed in credits. Access to credits can depend on farm size. If the amount of credits depends on collateral, then larger farms may have easier access to credits. They can use more inputs and it causes that productivity will depend positively on farm size.

Czechoslovakia was a socialist country from 1948 till the Velvet Revolution in 1989. Those who did not comply with its diktats were punished. Hundreds of people were executed in show trials. 95% of all privately owned companies were nationalised. 95% of farms were nationalized. No one could own more than 50 hectares of land. Collectivization worked for some but not others. Larger farms were organized on 3 levels of hierarchy which actually reduced worker participation in decision making. Younger workers left for better jobs in the cities and productivity fell. Reforms in the 1970s saw more investment and improvements began to appear gradually. There were record harvests in the 1980s.

The Czech Republic, Slovakia and eastern regions of Germany stand to be particularly severely affected by a cap because their farms are simply bigger than enterprises elsewhere in the EU. Today, the Czech Republic has the EU's largest farms by far: Its average size of 133 hectares per farm dwarfs the European average of 16 hectares.

The relationship between farm size and output is one of the basic questions in development economics which was already solved in many research studies.Large-scale dairy farms had a higher labor productivity and NFI than other dairy farms, without compromising on phosphorus surplus, energy use or ghg emission. Higher profits were accompanied by a lower solvency ratio on large-scale farms. Pesticides use, however, was higher on large-scale dairy farms due to a lower share of grassland. Large-scale farms had a shorter cow lifetime and applied less grazing compared to other dairy farms [8].

The aim of the study. The aim of submitted paper is to determine the minimum size of agricultural land of a small family farm focused on plant production in the economic and production conditions of the Czech and Slovak Republics.

Material and methods of research. In the submitted paper had been used the data on farmers in Slovakia and the Czech Republic from the data of business calculations by Research Institute of Agricultural and Food Economics from Slovakia and Research Institute of Agricultural Economy from the Czech Republic. For determination of the farm size value and the number of livestock in the cattle category of a small family farm, we can determine the following algorithm.

Each step of the algorithm must be unambiguously and precisely defined; in each situation, it must be fully clear what and how to do and how will the algorithm continue.

Algorithm usually works with some inputs, quantities that are available before or during the activity. Inputs have defined sets of values they can acquire. The algorithm has at least one output, quantity that is in the desired relation to the inputs, thus forming the answer to the problem that the algorithm solves. In general, we require that the algorithm has to be effective, in the sense that we require each operation required by the algorithm is simple enough to be at least in principle converted at the end time only by the use of pencil and paper. The algorithm does not solve one specific problem (e.g., "how to calculate 3×7"), but solves a general class of similar problems (e.g., "how to calculate the product of two integers").

The algorithms for determining the size of a family farm focused on plant production in the corn production area in the economic and production conditions of the Slovak Republic were given the following inputs:

1. Annual consumer expenditures of the average four-member family.
2. Own costs of chosen plant commodities.
3. Producers prices for chosen plant commodities.

4. Support mechanisms in corn areas for plant production.
5. The average annual hectare yields of the chosen crops.

The outputs of the presented algorithm will be the following variables:

1. Acreage of arable land required for 1 family farm in Slovakia and in the Czech Republic.

The paper is calculating with average household expenditures in amount of 16 177,44 EUR in the Slovak Republic and amount of 18,597.34 in the Czech Republic (year 2016).

Research results. A particular type of farm structure is not an explicit policy objective of the EU's Common Agricultural Policy (CAP). However, facilitating structural change is an objective of the CAP, set out in Article 39 of the Treaty on the Functioning of the European Union, as a way of ensuring a fair standard of living for the agricultural community and increasing the individual earnings of persons engaged in agriculture (the Treaty language speaks of "ensuring the rational development of agricultural production and the optimum utilization of the factors of production, in particular labor").

However, there is a widely-shared view that it is desirable to maintain the family farm model of European agriculture. There also seems to be broad political support for the view that assistance should be targeted on smaller family farms. There is keen interest in the evolution of agricultural structures, with many regretting the decline in the number of smaller farms and criticizing the emergence of larger, 'industrial' holdings.

One way to track changes in farm structure is to examine trends in the average size of holding, or average herd size in the case of livestock farms. However, this measure can seriously underestimate the pace of change where much of the growth (in area farmed, or in livestock numbers) takes place on the larger holdings. The persistence of many small holdings, even though the share of the land or livestock that they control is small and may be falling, tends to mask the extent of structural change as measured by averages.

In 2013, there were 4.4 million farms in the EU-28 that had a standard output that was less than EUR 2 000, while a further 3.1 million farms had an output within the range of EUR 2 000–EUR 8 000. Together these very small and small farms accounted for more than two thirds (69.1 %) of all the farms in the EU-28 (see Figure 1), whereas their share of standard output was considerably lower, at 5.0 %. This may be explained, at least in part, by the relatively high number of very small, subsistence households in the EU (see below for more information concerning farms where more than 50 % of their output is self-consumed).

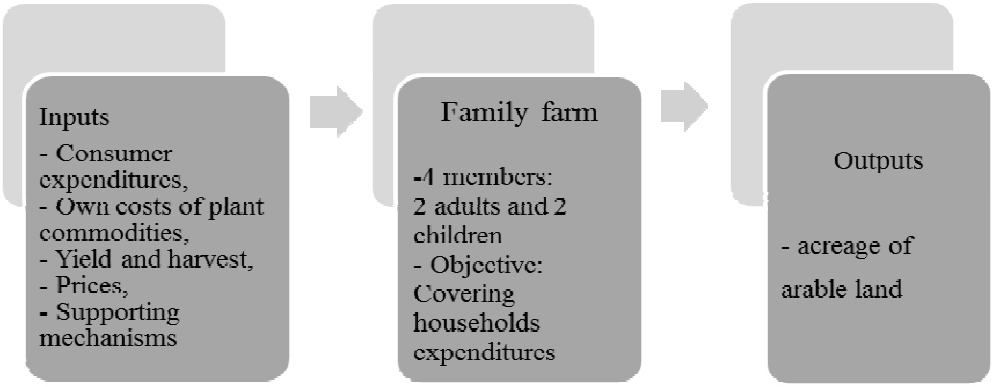

Fig. 1. **Scheme of Algorithm for Calculation of Acreage.**

Source: own processing

By contrast, there were 680 thousand farms in the EU-28 with a standard output of at least EUR 100 000; these very large farms accounted for 6.3 % of the total number of farms and for 71.4 % of the agricultural standard output in 2013. It should be noted that while many of these farms with a high level of standard output occupied considerable areas of agricultural land, there are specific types of farming which may have considerable output in monetary terms from very small areas of agricultural land, for example, horticulture or poultry farming.

The business structure in agriculture is in constant motion. In the presently existing forms of business is changing the number of farms, their size structure and their representation on the man-

aged land plots. Agribusiness is determined mainly by the EU CAP and internal socio-political development, with an emphasis on agrarian government policy (state aid) and the formation of a business environment (legislation, economic instruments, financial sector policy). The family farming represents the predominant business model in the agriculture in the European Union. The family farms, with their 97 percent share, represent the most common type of farms, including large and small farms, full-time as well as the part-time ones. Combining these basic indicators for the number of farms and the utilized agricultural area, the average physical size of each farm in the EU-28 stood at 16.1 hectares in 2013. This marked a considerable increase when compared with the corresponding ratio from 2005, when the average for the EU-28 (excluding Croatia) had been 11.9 hectares.

In 2013, the largest average farm size (in physical terms) was recorded in the Czech Republic, at 133.0 hectares of utilized agricultural area, followed at some distance by the United Kingdom (93.6 hectares) and Slovakia (80.7 hectares). There were six EU Member States that reported their average farm size was less than 10.0 hectares in 2013, they were: Hungary, Greece, Slovenia, Romania, Cyprus and Malta (where the lowest average was recorded, at 1.2 hectares per farm). Comparing these two extremes, on average, farms in the Czech Republic were approximately 115 times as large as in Malta.

Our calculations are based on algorithm on compliance with the principles of crop rotation, with maximum positive and minimal negative interactions between crops. These interactions greatly affect the physical, chemical, and biological properties of the soil and consequently the quality of grown crops. The crop rotation and arrangement of the soil fund must also respect other agro-ecological criteria for the elimination of negative factors, as for example, in the crop rotation of integrated systems, should not be higher than 50 percentage of cereals [9].

According to the above crop rotation, the crops such as wheat, barley, grain maize, sunflower, oilseed rape and pea were included in the algorithm. Their representation is shown in Table 1. The main crops grown in the conditions of the Czech and Slovak Republics enter the algorithm at the following percentages. From the point of view of the variation of crop, we had chosen the crop yields per hectare in 2015 (also in the Czech and Slovak Republics).

Table 1 – **Percentage share (in %) and yields of chosen crops** (in $t.ha^{-1}$)

	Shareon arable land in %	Czech Republic Yields (in $t.ha^{-1}$)	Slovakia Yields (in $t.ha^{-1}$)	Difference (in $t.ha^{-1}$)
wheat	37%	7,14	6,34	0,80
barley	13%	6,46	5,91	0,55
grain maize	23%	6,43	4,66	1,77
sunflower	7%	2,23	2,46	- 0,23
oilseed rape	12%	3,57	2,95	0,62
pea	8%	3,77	3,54	0,23

Source: Research Institute of Agricultural and Food Economics from Slovakia and Research Institute of Agricultural Economy from the Czech Republic, 2015 and own calculations.

Another variable in the algorithm is the price expressed in Euro per 1 ton for the year 2015, as well as own costs, closer described in the methodology per hectare per individual crops (Table 2).

Table 2 – **Prices (in $Euro.ha^{-1}$) and own costs for chosen crops** (in t. ha^{-1})

	Czech Republic	Slovakia	Difference	Czech Republic	Slovakia	Difference
	Prices	Prices	of Prices	Own costs	Own costs	of Own costs
wheat	151	157	6	1083	934	149
barley	138	164	26	897	831	6
grain maize	125	140	15	1373	1 107	266
sunflower	357	310	47	1109	914	195
oilseed rape	363	337	26	1344	1 249	95
pea	189	283	94	856	656	200

Source: Research Institute of Agricultural and Food Economics from Slovakia and Research Institute of Agricultural Economy from Czech the Republic, 2015 and own calculations.

From Table 2 we can see differences in prices and own costs in the Czech Republic and in Slovakia.

Table 3 – **Results of algorithm for crop production in Slovakia**

	Share on rable land in %	PricesPrice in Euro. t^{-1}	Own costs in Euro. ha^{-1}	Revenues in Euro.ha^{-1}	Yields in t.ha^{-1}	Economical results in Euro.ha^{-1}	Economi-cal result in EUR.ha-1 x share on arable land
wheat	37%	157	933.80	1252.38	6.34	318.58	117.87
barley	13%	164	830.80	1226.24	5.91	395.44	51.41
grain maize	23%	140	1107.00	909.40	4.66	-197.60	-45.45
sunflower	7%	310	913.51	1019.60	2.46	106.09	7.43
oilseed rape	12%	337	1248.90	1251.15	2.95	2.25	0.27
pea	8%	283	655.80	1258.82	3.54	603.02	48.24
Total	TOTAL economical result per 1 ha of arable land						179.77

Source*:* Research Institute of Agricultural and Food Economics from Slovakia, 2015 and own calculations.

From Table 3 appears that, according to mentioned crop rotation and all costs metering in Slovakia, will be achieved a profit of 179.77 Euro per hectare of agricultural land. If the family farm hired the employees and paid their wages and social costs, there would be need for 89.98 hectares' acreage. This was calculated as the share of household expenditures (16,177.44 Euro per year for the 4-member family) to the economical results per 1 ha from Table 3.

Table 4 – **Results of algorithm for crop production in the Czech Republic**

	Share on rable land in %	PricesPrice in Euro.t^{-1}	Own costs in Euro.ha^{-1}	Revenues in Euro.ha^{-1}	Yields in t.ha^{-1}	Economical results in Euro.ha^{-1}	Economical result in EUR.ha-1 x share on arable land
wheat	37%	151	1082.97	1405.48	7.14	322.51	119.33
barley	13%	138	896.72	1213.69	6.46	316.96	41.21
grain maize	23%	125	1373.34	1126.55	6.43	-246.79	-56.76
sunflower	7%	357	1108.86	1120.03	2.23	11.16	0.78
oilseed rape	12%	363	1343.83	1619.68	3.57	275.85	33.10
pea	8%	189	856,29	1036,22	3,77	179,92	14,39
Total	TOTAL economical result per 1 ha of arable land						152.05

Source*:* Research Institute of Agricultural Economy from Czech Republic, 2015 and own calculations.

From Table 4 appears that, according to mentioned crop rotation and all costs metering in the Czech Republic, will be achieved a profit of 152.05 EUR per hectare of agricultural land. If the family farm hired the employees and paid their wages and social costs, there would be need for 122.31 hectares' acreage. This was calculated as the share of household expenditures (18,597.34 EUR per year for the 4-member family) to the economical results per 1 ha from Table 4.

Table 5 – **Results of algorithm for crop production reduced of employees' wage and social costs and production and management overheads costs in Slovakia**

	Share on arable land in %	Own costs in Euro.ha^{-1}	Personal and social costs in Euro.ha^{-1}	Produ-ction over-head in Euro.ha^{-1}	Manage-ment Over-head in Euro.ha^{-1}	Reve-nues in Euro. ha^{-1}	Econo-mical result in EUR. ha^{-1}	Econo-mical result in EUR.ha^{-1} x Share on arable land
wheat	37%	933.80	31.21	76.56	65.92	1252.38	492.27	182.14
barley	13%	830.80	32.00	75.63	66.83	1226.24	569.90	74.09
grain maize	23%	1107.00	46.92	101.54	68.60	909.40	19.46	4.48
Sun-flower	7%	913.51	42.62	67.44	64.85	1019.60	281.00	19.67
oilseed rape	12%	1248.90	36.38	113.62	78.26	1251.15	230.51	27.66
pea	8%	655.80	27.02	93.75	122.53	1258.82	846.32	67.71
	TOTAL economical result per 1 ha of arable land							375.74

Source*:* Research Institute of Agricultural Economy from the Czech Republic, 2015 and own calculations.

Table 5 shows example in Slovakia that, according to the structure of the crop rotation and the reduction of employees' wage and social costs and production and management overheads costs, will be achieved a profit of 375.74 Euro per one hectare of agricultural land. This variant assumes that the

family farm will not hire another employee and will not bear the production and management overheads costs. In the given variant, in order to cover the expenditures for the 4-member farm family (16,177.44 Euro per year), the acreage of the farm was reduced to 43.05 ha of agricultural land.

Table 6 – **Results of algorithm for crop production reduced of employees' wage and social costs and production and management overheads costs in the Czech Republic**

	Share on arable land in %	Own costs in Euro.ha^{-1}	Personal and social costs in Euro.ha^{-1}	Production overhead in Euro.ha^{-1}
wheat	37%	1 082.97	18.72	92.29
barley	13%	896.72	16.94	82.34
grain maize	23%	1 373.34	9.25	122.14
sunflower	7%	1 108.86	30.22	148.55
oilseed rape	12%	1 343.83	13.83	99.99
pea	8%	856.29	16.16	95.32
	Management Overhead in Euro.ha^{-1}	Revenues in Euro.ha^{-1}	Economical result in EUR.ha^{-1}	Economical result in EUR.ha^{-1} x Share on arable land
wheat	38.84	1 405.48	472.36	174.77
barley	26.45	1 213.69	442.69	57.55
grain maize	57.22	1 126.55	-58.18	-13.38
sunflower	92.81	1 120.03	282.75	19.79
oilseed rape	41.39	1 619.68	431.06	51.73
pea	34.36	1 036.22	325.78	26.06
	TOTAL economical result per 1 ha of arable land			316.52

Source: Research Institute of Agricultural Economy from the Czech Republic, 2015 and own calculations.

Table 6 shows example in the Czech Republic that, according to the structure of the crop rotation and the reduction of employees' wage and social costs and production and management overheads costs, will be achieved a profit of 316.52 EUR per one hectare of agricultural land. This variant assumes that the family farm will not hire another employee and will not bear the production and management overheads costs. In the given variant, in order to cover the expenditures for the 4-member farm family (18,597.34 Euro per year), the acreage of the farm was reduced to 58.75 ha of agricultural land.

Conclusions. The algorithms for determining the size of a family farm focused on crop production in the corn production area in the economic and production conditions of the Czech Republic and the Slovak Republic were given the following inputs: the average annual income of a 4 member family, own costs for chosen crops, prices of crops, subsidies in corn areas for agricultural land, average annual yields of chosen crops. Data were obtained from the ministries of agriculture and research institutes from both states.

We calculate the average 4 member family in Slovakia needs to earn minimum 16 77.44 Euro per year and in the Czech Republic 18 322.08 Euro per year. The results of the paper proved that, according to the algorithm of an average farm focused on crop production, the acreage of 89.98 ha in Slovakia and 122.31 ha in the Czech Republic of agricultural land needs to have one family farm. This option assumes that the family farm will hire another employee and will calculate with production and management overhead costs.

We calculate also with algorithm where following costs: personal and social costs, production and management overhead costs are not inculded in calculation. Family farm in this algorithm is not hiring employers and is farming independently. In this algorithm 4 member family for covering their expenditures needs to farm on the acreage of 43.05 ha in Slovakia and 58.75 ha in the Czech Republic.

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Порівняльний аналіз розмірів ферм з виробництва рослинницької продукції в умовах Республік Словакії та Чехії

Патрик Ровни, Душан Добак, Тетяна Євтеєва, Марек Плачі

Визначено, що аграрний сектор Чехії та Словаччини має проблеми в сільськогосподарських господарствах як великого так і малого типу. Розглянуто сімейне господарство (сімейна ферма), яке зосереджено на виробництві рослинної та тваринної продукції. Досліджувана сімейна ферма складається з двох дорослих та двох дітей. Здійснено розрахунок мінімального розміру ферми на гектар, необхідний для досягнення середнього доходу (в національній економіці) для чотирьох членів сім'ї в Чехії та Словаччині.

При дослідженні даної проблематики, для визначення розміру сімейного господарства, орієнтованого на вирощування сільськогосподарських культур в економічних та виробничих умовах Чеської Республіки та Словацької Республіки, було отримано наступні дані: середній річний дохід чотирьох членів сім'ї, власні витрати на вибрані культури, ціни на сільськогосподарські культури, середні субсидії на сільськогосподарські землі, середньорічні врожаї вибраних культур на основі даних міністерств сільського господарства та статистичних служб обох держав.

Дослідженням встановлено, що середня сім'я з 4 членів у Словаччині повинна заробляти мінімум 16 77,44 євро на рік, а в Чехії – 18 322,08 євро на рік. Результати дослідження підтвердили, що за моделлю середньої ферми, орієнтованої на виробництво сільськогосподарських культур, площі 89,99 га в Словаччині і 122,31 га в Чеській Республіці сільськогосподарських земель повинні мати одну сімейну ферму. У статті були розглянуті наступні сільськогосподарські культури: пшениця, ячмінь, зерно кукурудзи, соняшник, рапс, картопля і горох.

Уточнено, що одним із способів відстеження змін в структурі сільськогосподарських підприємств є вивчення тенденцій середнього розміру господарства або середнього розміру стада при дослідженні ферм, які займаються тваринництвом.

Проте, цей спосіб недооцінює темпи змін, що відбуваються у великих господарствах. Незмінність багатьох малих господарств, навіть якщо частка землі або худоби, яка їм належить, невелика і може знижуватися, має тенденцію нівелювати ступінь структурних змін, виміряних середніми показниками.

Метою статті є визначення мінімального розміру сільськогосподарських угідь невеликої сімейної ферми, орієнтованої на виробництво рослин в економічних та виробничих умовах Чеської та Словацької Республік.

У статті використані статистичні дані Словаччини та Чехії за даними бізнес-розрахунків НДІ сільськогосподарської та харчової економіки Словаччини та Науково-дослідного інституту аграрної економіки Чехії.

Ключові слова: розмір ферм, сільськогосподарські землі, рослинництво, сільськогосподарські культури, витрати, ціни, субсидії.

Сравнительный анализ размеров ферм с производства растениеводческой продукции в условиях Республик Словакии и Чехии

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Определено, что аграрный сектор Чехии и Словакии имеет проблемы в сельскохозяйственных хозяйствах как большого так и малого типа. Рассмотрено семейное хозяйство (семейная ферма), которое сосредоточено на производстве растительной и животной продукции. Исследуемая семейная ферма состоит из двух взрослых и двух детей. Осуществлен расчет минимального размера фермы на гектар, необходимый для достижения среднего дохода (в национальной экономике) для четырех членов семьи в Чехии и Словакии.

При исследовании данной проблематики, для определения размера семейного хозяйства, ориентированного на выращивание сельскохозяйственных культур в экономических и производственных условиях Чешской Республики и Словакии, были получены следующие данные: средний годовой доход четырех членов семьи, собственные расходы на выбранные культуры, цены на сельскохозяйственные культуры, средние субсидии на сельскохозяйственные земли, среднегодовые урожаи выбранных культур на основе данных министерств сельского хозяйства и статистических служб обеих государств.

Исследованием установлено, что средняя семья из 4 членов в Словакии должна зарабатывать минимум 16 77,44 евро в год, а в Чехии – 18 322,08 евро в год. Результаты исследования подтвердили, что по модели средней фермы, ориентированной на производство сельскохозяйственных культур, площади 89,99 га в Словакии и 122,31 га в Чешской Республике сельскохозяйственных земель должны иметь одну семейную ферму. В статье были рассмотрены следующие сельскохозяйственные культуры: пшеница, ячмень, зерно кукурузы, подсолнечник, рапс, картофель и горох.

Уточнено, что одним из способов отслеживания изменений в структуре сельскохозяйственных предприятий является изучение тенденций среднего размера хозяйства или среднего размера стада при исследовании ферм, которые занимаются животноводством.

Однако, этот способ недооценивает темпы изменений, происходящих в крупных хозяйствах. Неизменность многих малых хозяйств, даже если доля земли или скота, принадлежащего им небольшая и может снижаться, имеет тенденцию нивелировать степень структурных изменений, измеренных средними показателями.

Целью статьи является определение минимального размера сельскохозяйственных угодий небольшой семейной фермы, ориентированной на производство растений в экономических и производственных условиях Чешской и Словацкой Республик.

В статье использованы статистические данные Словакии и Чехии по данным бизнес-расчетов НИИ сельскохозяйственной и пищевой экономики Словакии и Научно-исследовательского института аграрной экономики Чехии.

Ключевые слова: размер фермы, сельскохозяйственные угодья, растениеводство, урожай, затраты, цены, субсидии.

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