

## THE AREA OF PRODUCTION AND FARMERS' OPINIONS ON THE NEED FOR AND FORM OF TRANSPORT SERVICES

### Summary

The presented research results pertain to the opinions of farm owners with various areas of production on transport services for the agricultural sector. The greatest need for transport services is seen by farmers dealing with vegetable production (66.67%), the least need is seen by milk producers. Farmers mostly justify the need for services by time saving. Nearly a half of farms under analysis use such services; these are mostly farms producing livestock, while farms specializing in general agricultural production use such services the least frequently. 56.02% do not provide services due to the lack of demand and funds. Combination of transport services with commercial activities is preferred by 56.51% of farms specializing in crop production and 55.56% of farms specializing in vegetable production.

**Key words:** transport, areas of production, transport services, services

## KIERUNEK PRODUKCJI A OPINIE ROLNIKÓW O POTRZEBIE I FORMIE OBSŁUGI TRANSPORTOWEJ

### Streszczenie

Przedstawiono wyniki badań dotyczących opinii właścicieli gospodarstw rolniczych o różnym kierunku produkcji na temat usług transportowych dla rolnictwa. Największą potrzebę usług transportowych widzą rolnicy zajmujący się produkcją warzyw 66,67%, najmniejszą producenci mleka. Potrzebę usług w największym stopniu rolnicy tłumaczą oszczędnością czasu. Prawie połowa badanych gospodarstw korzysta z usług, najczęściej gospodarstwa produkujące żywiec, najmniej produkcja ogólnorolnicza. 56,02% nie daje usług ze względu na brak popytu i brak środków. Połączenie obsługi transportowej z czynnościami handlowymi, preferuje 56,51% gospodarstw produkcja roślinna oraz 55,56% warzywnicza.

**Słowa kluczowe:** transport, kierunek produkcji, obsługa transportowa, usługi

### 1. Introduction

The results of research regarding equipment and effectiveness of the operation of means of transport at farms show that their number and quality selection are directly reflected by the effectiveness of transport activities and also by expenditures of farms [1, 2, 3]. There are various forms of possible transport activities. However, transport self-service predominates here [4].

According to research by the Institute of Agricultural and Food Economics, the demand for services has increased in agriculture, which results from an improvement in the income situation of farms [5]. It results from research and analyses that one of directions for reducing the costs of agricultural production are mechanization services, including transport services. [4, 6]. Hence, it seems important to get to know farmers' opinions concerning the needs and form of transport activities.

### 2. Aim and scope of the study

As a result of changes occurring in the agriculture, which also include agricultural transport, the aim of the study was to find the opinions of commercial farm owners on:

- the need for transport services for agriculture,
- the possible model – forms of transport services.

The study focused on commercial farms - farms situated in the Lesser Poland region supporting themselves from agricultural production 166 farms were included in the study.

The study included farms within the scope of activities of secondary and vocational agricultural schools - children of farm owners are students of such schools and after the completion of their education they declare taking over their parents' farms. Hence, it can be assumed that these farms are likely to develop. Due to high diversity of transport size depending on the area of production, the farms under analysis were divided into groups. The division was made on the basis of the share of sales per 1 ha of cultivated land – the highest share determined the area of production. The following groups of farms were distinguished:

- A – general agricultural production 79 farms – 47.59%,
- B – crop production 23 farms – 13.86%,
- C – animal production – milk 36 farms – 21.69%,
- D – animal production – livestock 10 farms – 6.02%,
- E – vegetable production 18 farms – 10.84%.

### 3. Research methodology

The research was performed on the basis of guided clinical interview and the objects of the research were selected purposefully - declaration of conducting agricultural production at an invariable level or, which was quite frequently encountered, of an increase in the production.

### 4. Research results

It results from Table 1, which shows characteristics of the farms under analysis that the average size of farms under analysis is 26.24 ha of cultivated land and it ranges

from 12.29 ha of cultivated land for vegetable farms to 42.37 for crop producing farms. A high share of permanent pastures amounting to nearly 83% should be noted for milk production. A high share of leased land was observed for the farms under analysis, on average 38.82%, and at most nearly 54.41%. This fact shows that owners see the possibility of future development by increasing the cultivated area. The average size of the plot where agricultural activities are conducted is quite large, the variability in the individual groups is very high and it ranges from 0.01 ha to several hectares. Both the size of plots and the livestock density are basic factors generating the size of transport and determining the amount of equipment and the structure of the means of transport used.

The index of tractive force – on average 9.45 kw·ha<sup>-1</sup> of cultivated land is high. The transport distance is the basic element of transport. In this scope, the farms under analysis reach very disadvantageous values. The average transport distance amounting to 2.91 km is very high. It seems that it is connected more with the spatial distribution of the land rather than with the surface area of the farm. The considerable distance of external transport, on average 15.25 km, is characterized by high variability between farms with various areas of production. This results from the fact that all commercial farms, depending on the products offered, are

not just looking for markets to sell their products, but they are looking for markets where they will receive the best price for their product. The sale of production calculated per 1 ha of cultivated land shows considerable variability - depending on the generated transport weight.

There is considerable variability both in the number and in the load capacity of the means of transport owned. It should be added that the farms under analysis also had specialist equipment, such as forage trolleys, bulk trailers and bale trailers. At the same time, nearly each farm had a manure spreader, on average 0.94 pieces per farm with the average load capacity of 3.93 t.

The conditions of transport and means of transport owned determine the selection of an appropriate model - form of transport activities. Table 2 presents the share of answers to the question whether transport services are needed and why.

With nearly 60% of responses that transport services are needed the most because 66.67% of farmers think services are need for vegetable production, while the demand for transport services is the lowest for milk producers. Farmers mostly justify the need for services by time saving. Among those who answered no, 100% of farmers justified their response by a sufficient number of their own means of transport.

Table 1. Characteristics of farms under analysis

Tab. 1. Charakterystyka badanych gospodarstw

Specification	unit	Area of production					
		on average	A	B	C	D	E
Surface area of cultivated land	ha	26.24	25.59	42.37	24.45	25.78	12.29
% of the GO share	%	73.09	67.31	80.72	17.13	56.47	88.51
Number of plots	pcs	20.19	20.20	29.48	19.69	18.00	10.50
Average size of the plot	ha	1.30	1.27	1.43	1.24	1.43	1.17
Livestock density	SD·100 ha <sup>-1</sup> of cultivated land	69.18	39.95	45.10	136.06	159.37	44.12
Installed power	kW·1 ha <sup>-1</sup> of cultivated land	9.45	10.04	2.94	8.35	4.25	11.18
Distance - internal transport	km	2.91	3.18	2.80	2.47	3.10	2.59
Distance - external transport <sup>1</sup>	km	15.25	17.80	10.90	9.80	16.40	19.70
Sales of production	t·ha <sup>-1</sup> cultivated land	5.22	4.30	3.50	3.40	7.90	13.50
Means of transport owned*							
Pieces per farm	pcs	2.23	2.10	2.17	2.50	1.60	2.89
Pieces per 100 ha of cultivated land	pcs·100 ha <sup>-1</sup> of cultivated land	10.78	8.23	5.12	10.22	6.21	23.52
Average load capacity	t	3.88	4.05	3.99	3.51	4.06	3.44

\*includes delivery vans, trucks, load box trailers and tow tractors

Source: own work / Źródło: opracowanie własne

Table 2. The percentage share of answers to the question whether transport services are needed and why

Tab. 2. Procentowy udział odpowiedzi na pytanie: czy usługi są potrzebne i dlaczego

Specification	Area of production					
	on average	1	2	3	4	5
<b>Yes</b>	<b>59.04</b>	<b>58.22</b>	<b>56.52</b>	<b>55.56</b>	<b>60.00</b>	<b>66.67</b>
no means of transport	27.55	28.26	7.69	50.00	0.00	33.33
time saving	46.94	47.83	69.23	30.00	50.00	41.67
cheaper	25.51	23.91	23.08	20.00	50.00	25.00
<b>No</b>	<b>40.96</b>	<b>41.78</b>	<b>43.48</b>	<b>44.44</b>	<b>40.00</b>	<b>33.33</b>
I have my own means of transport	100.00	100.00	100.00	100.00	100.00	100.00

Source: own work / Źródło: opracowanie własne

Table 3, in turn, presents the share of answers to the question whether the farmer uses transport services and why. In practice, it can be concluded that a half of the farms under analysis use services (48.80% yes and 51.20% no). They are mostly used by animal production farms - livestock production, while general agricultural production farms use such services the least.

The answer to the question why is much more diverse among areas of production. From 57.14% for time saving – livestock production to 14.29% - no means of transport for the same area. On average, time saving and lower costs are the reason for using such services to the same degree. Table 4 presents the share of answers to the question whether the farmer provides transport services and why.

As shown in the table, on average more farms (56.02%) do not provide services explaining this fact by the lack of demand and the lack of means of transport. For the former group, it can be assumed that if the demand increases, they

may become potential service providers. The lack of time has the highest percentage of responses for vegetable production farms. On the other hand, a vast majority of service providers in each of the analysed production areas says additional income is the reason for providing such services. Table 5, in turn, provides the percentage share of responses to the question how the farmers see the future model (form) of transport services for agriculture.

It should be emphasized that the last 3 responses pertain to the same variant - i.e. combination of supply and sale with transport services. However, due to the fact that some farmers see the problem of supply and sale separately, the responses were divided. Generally, 44.56% of farmers prefer the combination of transport services with commercial activities. To the highest degree, this model of transport activities is favoured by crop producers (56.51%) and vegetable producers (55.56%), while this is perceived as the least useful by milk producers.

Table 3. The percentage share of answers to the question whether the farmer uses transport services and why  
Tab. 3. Procentowy udział odpowiedzi na pytanie: czy rolnik korzysta z usług i dlaczego

Specification	Area of production					
	on average	1	2	3	4	5
<b>Yes</b>	<b>48.80</b>	<b>44.30</b>	<b>56.52</b>	<b>52.78</b>	<b>70.00</b>	<b>44.44</b>
no means of transport	28.40	20.00	15.38	52.63	14.29	12.50
time saving	35.80	40.00	46.15	15.79	57.14	37.50
cheaper	35.80	40.00	38.47	31.58	28.57	50.00
<b>No</b>	<b>51.20</b>	<b>55.70</b>	<b>43.48</b>	<b>47.22</b>	<b>30.00</b>	<b>55.56</b>
I have my own means of transport	57.64	65.91	100.00	47.06	66.67	54.55
They are expensive	42.36	34.09	0.00	52.94	33.33	45.45

Source: own work / Źródło: opracowanie własne

Table 4. The percentage share of answers to the question whether the farmer provides transport services and why  
Tab. 4. Procentowy udział odpowiedzi na pytanie: czy rolnik daje z usługi i dlaczego

Specification	Area of production					
	on average	1	2	3	4	5
<b>Yes</b>	<b>43.98</b>	<b>37.97</b>	<b>47.83</b>	<b>55.56</b>	<b>40.00</b>	<b>50.00</b>
income	71.24	83.33	100.00	45.00	75.00	66.67
corvée	28.76	16.67	0.00	55.00	25.00	33.33
<b>No</b>	<b>56.02</b>	<b>14.00</b>	<b>52.17</b>	<b>44.44</b>	<b>60.00</b>	<b>50.00</b>
No means of transport	30.10	28.57	41.67	25.00	66.67	0.00
Lack of time	25.81	20.41	50.00	25.00	0.00	77.78
Unprofitable	5.38	7.25	0.00	5.38	0.00	0.00
No demand	38.71	43.77	8.33	44.62	33.33	22.22

Source: own work / Źródło: opracowanie własne

Table 5. The percentage share of answers to the question how the farmers see the future model (form) of transport services for agriculture  
Tab. 5. Procentowy udział odpowiedzi na pytanie jak widzisz przyszłościowy model (formę) usług transportowych dla rolnictwa

Specification	Area of production					
	on average	1	2	3	4	5
Specialist transport companies	13.87	15.19	8.70	13.89	0.00	16.66
Something like farmers' associations	10.84	8.86	8.70	11.11	10.00	22.22
Neighbour services	30.73	31.65	26.09	38.89	40.00	5.56
Purchase of products with delivery	6.02	10.13	17.39	8.33	10.00	27.78
Sale of produce with collection	1.81	1.27	0.00	0.00	10.00	0.00
Purchase and sale with transport	36.73	32.90	39.12	27.78	30.00	27.78
Total	100.00	100.00	100.00	100.00	100.00	100.00

Source: own work / Źródło: opracowanie własne

In this last case, it is obvious as, for milk producers, the lack of another possibility of production collection results in a conviction that these are not services but a normal fact. Also, a large number of farm owners prefers the model of neighbour services, from 5.56% of vegetable producers to 40% of livestock producers.

## 5. Summary and conclusions

On the basis of the results obtained, it can be concluded that on the farms under analysis, 66.67% of farmers see the need for services - vegetable production, while milk producers need such services the least. Farmers mostly justify the need for services by time saving. Nearly a half of the farms under analysis use services (48.80% yes and 51.20% no). They are mostly used by animal production farms - livestock production, while general agricultural production farms use such services the least. More farms (56.02%) do not provide services explaining this fact by the lack of demand and the lack of means of transport. Generally, 44.56% of farmers prefer the combination of transport services with commercial activities. To the highest degree, this model of transport activities is favoured by crop producers

(56.51%) and vegetable producers (55.56%), while this is perceived as the least useful by milk producers.

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