GAINS OF GRAIN PRODUCERS FROM HORIZONTAL MERGERS IN ZEMGALE REGION

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Abstract. The aim of the present research is to examine the gains of Zemgale region's grain producers from horizontal mergers. The authors selected the cooperative "LATRAPS" as a research object, since it is one of the examples of horizontal merger in Zemgale region. The authors based their research on the analysis of annual reports of 30 farms and the result of a questionnaire survey of 100 farms. It was concluded that the largest gainers from horizontal mergers were farms that farmed an area of 100–300 ha, and their major gains were as follows: a beneficial grain purchase price, a possibility to get premiums for high quality, beneficial prices on fertilisers and plant protection products, and a possibility to have additional services and stability in a long-term.
Key words: farms, horizontal merger, agricultural cooperative
JEL code: Q12, Q13, Q14, Q24

Introduction

Enterprises of the same industry merge into cooperatives to solve the industry's economic problems, which is one of the kinds of horizontal merger. In a horizontal merger, participants of cooperation remain absolutely independent economic entities, as such cooperation is most often limited to meeting the technical and trade requirements of production at each enterprise involved in it. It is similar to the most common mutual assistance among neighbours in rural areas, which is based on mutual gains and does not require making a special contract.

A cooperative is an instrument enabling farms to operate more efficiently, as in this way it is possible to reduce costs and increase the value of a product and competition (Herbert S., 2006; Aneraude B., 2010; Ewell P., 1972; Abrahamsen and Scroggs; 1957; Won W., 2005).

The nature of cooperation, according to various authors is interpreted differently, however, these explanations complement each other. Research on cooperation has been conducted by Kaufmans P., Kaupuss L., Kucinskis J., Miglavs A., Spogis K., Ozolins N., Zids S., Vedla A., et al. (Vedla A., 2000; Karmite L., 2001; Kucinskis J. 2004; Miglavs A., 1999; Spogis K., 1999; Kaupuss L. 2001; Ozolins N.,1998).

However, there is a lack of researches that would show what size farms (in terms of land area) are the greatest gainers from being a member of a cooperative, therefore, the authors set a **hypothesis** – large farms gain more from being a member of a cooperative than small and medium farms.

The authors chose the cooperative of agricultural services "LATRAPS" as the research object. The cooperative was founded on 22 April 2000 and was one of the cooperatives of horizontal merger. Its founders were 12 farms from the municipalities of Dobele and Jelgava. From a company of 12 members, the cooperative "LATRAPS" transformed into the largest grain/rapeseed cooperative in Latvia.

The **research aim** is to analyse the gains of crop industry enterprises from their membership in the cooperative "LATRAPS".

To achieve the aim, the following research tasks were set:

1) to analyse the indicators of Zemgale region's crop farming;
2) to describe the business fields of the cooperative "LATRAPS";
3) to examine the annual reports of 30 farms from Zemgale region.

The following research methods were employed in the preset research: the monographic method, induction and deduction, the graphic method, methods of marketing studies, and the expert method.

Research results and discussion

The sown area, output, and yield of grain in Zemgale, compared with the characteristics of the entire grain industry of Latvia, comprise a very significant share in the total sown area, total output, and yield of grain in Latvia. The data summarised in Table 1 prove it

As Table 1 shows, the share of sown area, output, and yield of grain in 2011 is almost the same as it was in 2009. The stability and significance of Zemgale region's grain industry is also indicated by the grain yield, although it changed from year to year, but in Zemgale region it exceeded the average yield in Latvia (on average 25.8% and even more for every year). An analysis of the grain output in Zemgale region in the period 2009-2011 shows that the grain output decreased by 112.6 thou. tons.

The greatest increase in output was observed from 2006 to 2009, when the sown area of grain sharply increased, which was affected by the increase in the total sown area, the introduction of new technologies (funding of SAPARD and the Structural Funds) as well as favourable climatic conditions.

The cooperative "LATRAPS" unites 624 farms from the entire Latvia. Of these farms, 354 are located in Zemgale region, 109 in Latgale region, 72 in Kurzeme region, 37 in Vidzeme region, and 52 in Riga region.

As Figure 1 shows, the membership in the cooperative "LATRAPS" increased year by year – from 12 members in

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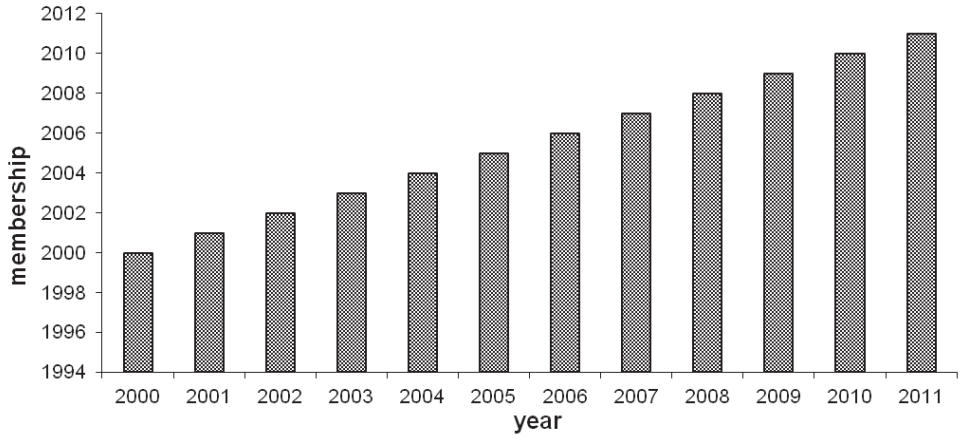
Table 1

Sown area, output, and yield of grain in Zemgale region and Latvia in 2009-2011

Indicator	2009			2010.			2011		
	Latvia	Zemgale	Zemgale/ Latvia, %	Latvia	Zemgale	Zemgale/ Latvia , %	Latvia	Zemgale	Zemgale/ Latvia , %
Sown area, thou. ha	1112.0	172.9	15.6%	1102.7	176. 8	16%	1086.7	169.8	15.6%
Output, tons	1663	677.1	40.7%	1435	614 .6	42.8%	1412	564.5	40.1%
Yield, tons ha^{-1}	30.8	39.2	127.3%	26.5	34.8	131.3%	26.8	33.2	123.9%

Source: authors' construction based on the CSB data, 2011



Source: authors' construction based on the cooperative "LATRAPS" data, 2012

Fig.1. **Changes in the membership of the cooperative "LATRAPS" in 2000–2011**

the year 2000 up to 607 in 2011, which indicates that the farms significantly benefit from their membership in the cooperative.

The cooperative "LATRAPS" expanded from a small company with a turnover of LVL 0.2 million in 2000 to an influential company of agricultural services with a turnover of LVL 56.4 million in 2011. Such a large turnover is made up by the sales of grain/rapeseed and resources for crop production (fertilisers and plant protection products).

The present research author, D. Glusaka, surveyed 100 Zemgale region's farms that were members of the cooperative "LATRAPS". After processing the survey data, it was found out that 25% of the respondents joined the cooperative because they were offered a higher price for their products, while 24% believed in the idea of cooperatives – stable operation in a long-term – as the feeling of security is very essential. Of the respondents, 18% were members of the cooperative because they could purchase resources that were necessary for production, cheaper. For many of the questioned farms (13% of the respondents), the most important was that the cooperative "LATRAPS" provided grain pre-processing and drying services, which was one of the determining reasons why the farmers wanted to be members of the cooperative "LATRAPS".

Over the years, the cooperative "LATRAPS" significantly expanded its activity, and the following additional services were offered for its members:

— supply of necessary raw materials;
— pre-processing and storage of grain and rapeseed;
— sales, including exports, of grain and rapeseed;
— trade of agricultural machinery;
— servicing and the supply of spare parts;
— production of rapeseed oil;
— production of biofuel from rapeseed grown by the cooperative's members.

Based on the data of questionnaires, one can conclude that the farmers used all the services provided by the cooperative "LATRAPS". The percentage distribution is quite similar, which means that every kind of services provided by the cooperative is very important to its members.

To analyse the gains of grain producers from horizontal mergers in Zemgale region, the authors summarised annual report data of thirty crop farms, of which fifteen were members of the cooperative "LATRAPS", whereas other fifteen were not its members. The area farmed by these farms ranged from 150 ha to 528 ha, this range

Table 2

Comparison of the gains of grain producers for farms with an area of more than 300 ha in 2011

Average indicators of farms	Five farms members of "Latraps" - C	Income and expenses, per 1 ha, for farms members of "Latraps"	Five farms non-members of "Latraps" - D	Income and expenses, per 1 ha, for farms non-members of "Latraps"
Farm size, ha	528	1	480	1
Premium to cooperative members for their produce, LVL	9 301	17.61	x	x
Income from grain and rapeseed, LVL	211 398	400.36	184 901	385.21
Total income, LVL	219 741	667.73	184 901	385.21
Expense on seeds, LVL	9 870	18.69	6 360	13.25
Expense on fertilisers, LVL	83 140	157.46	71 693	149.36
Expense on plant protection products, LVL	42 019	79.58	36 211	75.44
Expense on grain cleaning and drying, LVL	21 901	41.48	26 222	56.63
Total expense, LVL	156 930	297.22	140 486	292.68
Profit, LVL	**62 811**	**118.96**	**44 415**	**92.53**

Source: D.Glusaka's construction based on the data of farm annual reports, 2011

Table 3

Comparison of the gains of grain producers for farms with an area of 200 - 300 ha in 2011

Average indicators of farms	Five farms members of "Latraps" - E	Income and expenses, per 1 ha, for farms members of "Latraps"	Five farms non-members of "Latraps" - F	Income and expenses, per 1 ha, for farms non-members of "Latraps"
Farm size, ha	310	1	298	1
Premium to cooperative members for their produce, LVL	1 311	4.22	x	x
Income from grain and rapeseed, LVL	143 511	462.94	116 481	390.88
Total income, LVL	144 822	467.17	116 481	390.88
Expense on seeds, LVL	24 440	78.84	25 410	85.27
Expense on fertilisers, LVL	40 331	130.10	43 490	145.94
Expense on plant protection products, LVL	22 265	71.82	18 453	61.92
Expense on grain cleaning and drying, LVL	9 244	29.82	12 593	42.26
Total expense, LVL	96 279	310.58	99 946	335.39
Profit, LVL	**48 543**	**156.59**	**16 535**	**55.49**

Source: D. Glusaka's construction based on the data of farm annual reports, 2011

is quite large, and therefore, the gains of each farm are different. In order to better assess the gains from membership in a cooperative, the authors classified farms into three groups:

— farms with an area of more than 300 ha – the large farm group;
— farms with an area within a range of 200-300 ha – the medium farm group;
— farms with an area from 150 to 200 ha – the small farm group.

Table 2 presents the average income and expenses of five farms that were members of the

cooperative "LATRAPS" (farms "C") and five farms that were not members of the cooperative "LATRAPS" (farms "D"); the size of all the farms was within the range of 300-500 ha. One can see that the average income per 1 ha of farms "C" was just slightly greater than that of farms "D". A range of the prices offered at other grain purchase sites was not large, as grain prices were set at the commodity exchange; competition for customers among companies was tough, therefore, each of them tried to offer the best price.

Farms "C" sold their grain and rapeseed to the cooperative "LATRAPS" – the price of grain was 130 LVL/ton, and the price of rapeseed was 230 LVL/ton, whereas farms "D" sold their grain to Scandagra Latvia Ltd at 117 LVL/ton and their rapeseed to Linas Agro Ltd at 201 LVL/ton. The cooperative "LATRAPS" offered the best price, and although the price difference compared with other companies was small, a higher purchase price on grain and rapeseed might be regarded as a gain obtained from the cooperative "LATRAPS".

According to the survey, the gains of the large farms from the cooperative "LATRAPS" were different from the gains that were the most important for the small and medium farms. The broad market for sales and the developed logistics, which continued developing from year to year, provided by the cooperative "LATRAPS" were important to the large farms. Therefore, farmers did not have to deal themselves with sales of their grain, as the cooperative "LATRAPS" conducted market studies and sold its products at the best price in the domestic market as well as in foreign markets, which increased owing to the cooperative's logistics system.

In the present research, calculations were made on five farms that were members of the cooperative "LATRAPS" (farms "E") and five farms that were not members of the cooperative "LATRAPS" (farms "F"); the size of all the farms was within the range of 200-300 ha (Table 3).

As Table 3 shows, the average income per 1 ha of farms "E", which were the members of the cooperative "LATRAPS", was LVL 72.29 greater than that of farms "F", while the average cost per 1 ha of farms "E" was LVL 24.81 lower than that of farms "F". Therefore, farms "E" made an LVL 101.10 greater profit per 1 ha than farms "F". This large difference was made up by premiums paid for higher quality grain.

After processing the data of the survey, it was concluded that 21% of the medium farms believed that their greatest gain was a possibility to purchase raw materials needed for crop production at a lower price. The largest gainers were the farms of this particular farm group, as competing companies offered discounts, if raw materials needed for crop production were purchased at large quantities, which was beneficial to large farms, therefore, the small and medium farms gained from horizontal mergers.

Of the owners of small and medium farms, 19% considered a good grain purchase price a significant gain, as it was very important for small and medium farms to sell their products at a certain price, besides, there was a possibility to get a premium for high quality, which was, according to the owners of farms, a very important gain.

Table 4 presents calculations on five small farms which are members of the cooperative "LATRAPS" (farms "I") and five small farms which are not members of the cooperative "LATRAPS" (farms "J") (the area farmed was within the range of 150-200 ha).

An analysis of the data of Table 4 and their comparison with the data of Tables 2 and 4 showed that

Table 4

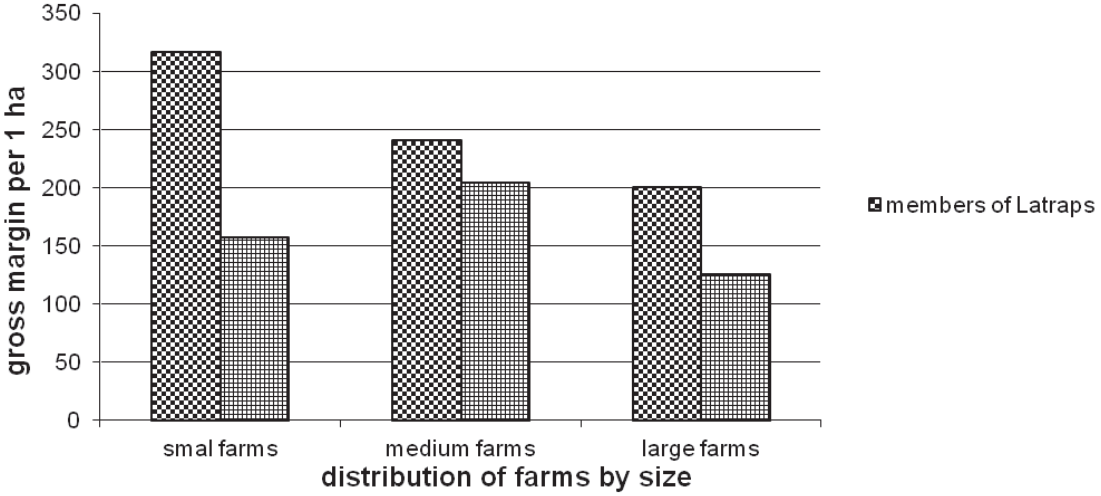
Comparison of the gains of grain producers for farms with an area of 150 - 200 ha in 2011

Average indicators of farms	Five farms members of "Latraps" - I	Income and expenses, per 1 ha, for farms members of "Latraps"	Five farms non-members of "Latraps" - J	Income and expenses, per 1 ha, for farms non-members of "Latraps"
Farm size, ha	150	1	179.5	1
Premium to cooperative members for their produce, LVL	154	1.02	x	x
Income from grain and rapeseed, LVL	74 296	495.31	37 328	207.96
Total income, LVL	74 450	496.33	37 328	207.96
Expense on seeds, LVL	11 713	78.09	0	0
Expense on fertilisers, LVL	10 567	70.45	6 264	34.90
Expense on plant protection, LVL	6 949	46.33	9 115	50.78
Expense on grain cleaning and drying, LVL	2 829	18.86	6 893	38.40
Total expense, LVL	32 059	213.73	22 272	124.08
Profit, LVL	**42 390**	**282.60**	**15 056**	**83.88**

Source: D. Glusaka's construction based on the data of farm annual reports, 2011

the largest gain from grain drying and cleaning services at the cooperative "LATRAPS" was obtained by small farms, which, according to the authors' classification, was from 150 to 200 ha and by medium farms, as mainly such farms did not have their own drying-house, therefore, it was important for them to consider the best offer.

In general, after comparing thirty various farms, the authors concluded that the farms that horizontally merged into the cooperative "LATRAPS" had a greater profit from crop production than the farms that did not join the cooperative "LATRAPS". The key gains of these farms from horizontal mergers were as follows: a higher price of grain purchase, a possibility to participate at



Source: D.Glusaka's construction based on the annual report data of selected farms, 2011

Fig.3. **Average gross margin per 1 ha for member farms of the cooperative „LATRAPS" and farms non-members of the cooperative in 2011**

Table 5

Evaluation of the gains of grain producers from horizontal mergers

Score	Strengths	1	2	3	4	5	6	7	8	9	10	11	12	13	14
10	Beneficial grain purchase price	x	1	1	1	5	6	1	1	1	1	1	1	1	14
1	Possibility to participate at informative seminars	x	x	2	4	5	6	7	8	9	10	11	12	13	14
1	Possibility to use services of an agronomist	x	x	x	3	5	6	7	8	9	10	11	12	13	14
1	Possibility to use accounting services	x	x	x	x	5	6	7	8	9	10	11	12	13	14
10	Possibility to get a quality premium	x	x	x	x	x	6	7	5	5	5	5	5	5	14
11	Beneficial price on fertilisers	x	x	x	x	x	x	6	6	6	10	6	6	6	14
9	Beneficial price on plant protection products	x	x	x	x	x	x	x	7	7	10	7	7	7	14
7	Possibility to get services of grain pre-processing and drying	x	x	x	x	x	x	x	x	9	10	8	8	8	8
6	Good logistics	x	x	x	x	x	x	x	x	x	9	9	12	13	14
8	Large market for grain sales	x	x	x	x	x	x	x	x	x	x	10	12	13	10
4	Quality and fast services of grain collection	x	x	x	x	x	x	x	x	x	x	x	11	13	14
5	Quality and fast servicing	x	x	x	x	x	x	x	x	x	x	x	x	13	14
8	Large capacity for grain collection and storage	x	x	x	x	x	x	x	x	x	x	x	x	x	13
10	Stability in a long-term	x	x	x	x	x	x	x	x	x	x	x	x	x	x

Source: authors' construction

seminars, a possibility to use services of an agronomist, a possibility to get a quality premium, and a better price for grain drying and cleaning services.

A comparison of gross margins per 1 ha for the farms being the members of the cooperative "LATRAPS" as well as the non-members show the gains as well (Figure 3).

D. Glusaka calculated a gross margin per 1 ha (income minus variable cost) for fifteen farms that were members of the cooperative "LATRAPS" and fifteen farms which were not members of this cooperative. As Figure 3 shows, the largest gross margin was observed for the farms being the members of the cooperative "LATRAPS". Besides, this indicator was grater among all the farm groups – small, medium, and large. The present research showed that the largest difference in gross margin per 1 ha existed between the large and medium farms, which were the largest gainers from horizontal mergers; the analysis of annual reports of farms and the survey results also indicated it.

The authors analysed the key gains by means of the matrix presented in Table 5, which was filled in by three experts from among employees of the cooperative "LATRAPS". A summary of the experts' opinions is presented in Table 5.

As Table 5 shows, the experts believed that the key gains were as follows: a beneficial grain purchase price, a beneficial price on fertilisers, a possibility to get quality premiums, and stability in a long-term. According to the analysis of annual reports and survey results, these gains were the most important for the members of the cooperative "LATRAPS".

The lowest score was assigned to the following gains: a possibility to participate at informative seminars and a possibility to use services of an agronomist and accountant, while the other gains were evaluated with a score that was close to the maximum boundary, which indicated that any gain provided by the operation of the cooperative "LATRAPS" was important. Besides, the importance of a gain depended on the size and development level of farms, which was proved by the authors while analysing annual reports and data of the questionnaire survey.

Conclusions

1. In the period 2009-2011, the sown area and output of grain in Zemgale region, compared with the characteristics of the grain industry of the entire Latvia, comprised a very significant share – 123 % and 41 %, respectively, but the average grain yield in Zemgale exceeded that of Latvia by 16 %.
2. The mot important gains of farms from their horizontal merger with the cooperative "LATRAPS" were as follows: a beneficial grain purchase price, a beneficial price on fertilisers, a beneficial price on plant protection products, a beneficial price on grain drying and cleaning services, and a possibility to get quality premiums.
3. According to D.Glusaka's calculations, the largest gross margin was observed for the farms being the members of the cooperative "LATRAPS". Besides, this indicator was grater among all the farm groups – small, medium, and large. The calculations showed that the greatest gains from horizontal mergers were obtained by medium and small farms.

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