



## Cash Crop Network

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### **Rapeseed in Central and Eastern Europe - A lot of Room for Growth**

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## Rapeseed in Central and Eastern Europe – A lot of Room for Growth

Current forecasts seem certain that the global production of vegetable oil – including the demand for biodiesel – will have to increase by approx. 50 per cent in order to meet the raising demand. Since one of the globally relevant oilseed crops is rapeseed – especially in Europe – the question arises whether there is room for further growth. The subsequent paper is investigating FAO statistics as well as **agri benchmark's** data in order to provide some answers.

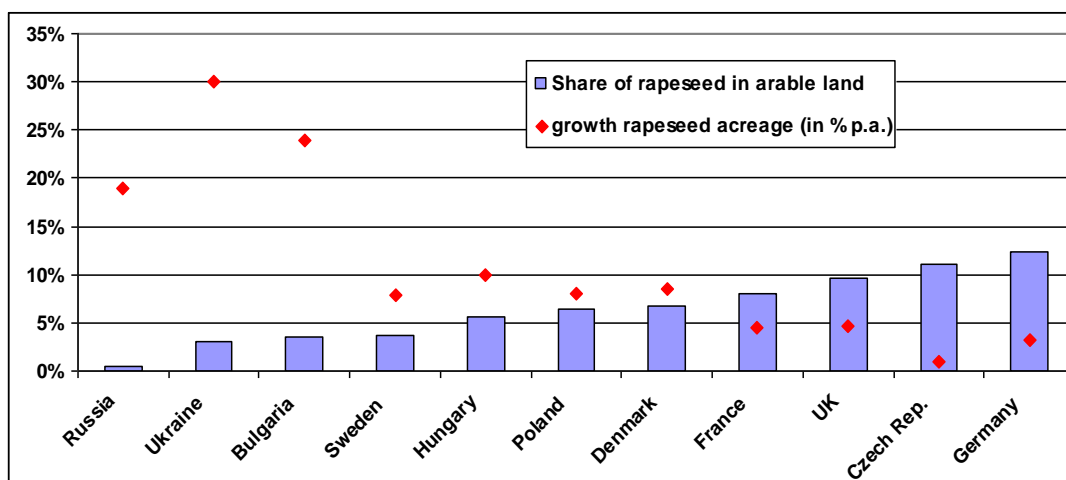
### Differentiated boom of European rapeseed

Comparing the most important rapeseed producing countries' acreage growth rates between 2000 and 2009 as well as the calculated share of rapeseed in total arable land (see [Figure 1](#)) gives a first impression of the development in European rapeseed production. Four findings emerge from this depiction:

1. In the analyzed European countries that represent about 80 % of the European rapeseed acreage and almost 90 % of the production of 2009 the acreage has increased dynamically within the past decade.
2. Germany has the highest share of rapeseed in total acreage with 13 %.
3. Russia, Ukraine and Bulgaria have, by a large margin, the highest growth rates in rapeseed acreage.
4. The tendency of growth in rapeseed acreage is the highest in those countries that have the smallest percentage of cultivation.

This depiction for Western Europe is qualified by a small decrease respectively stagnation of acreage in the main cultivation countries (Germany, France and the United Kingdom) between 2007 and 2009. Considering the growth markets it is therefore justified get a closer view to the Eastern and Central European regions.

**Figure 1:** Development rapeseed acreage in selected European countries (share: 2009, growth rate: 2000– 2009)

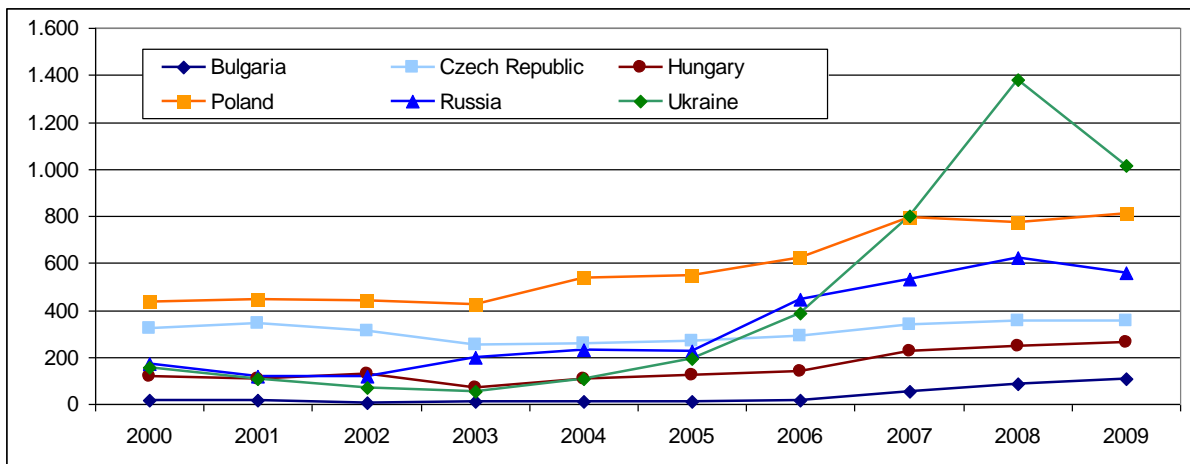


Source: FAO (2011), own calculations

## Rapeseed: Winner in Eastern and Central Europe

Figure 2 shows the development of acreages over time. It indicates a dynamic growth of acreage in the considered countries. In Poland for example, the rapeseed acreage increased by about 100 % in Russia even by 200 %. In some countries the increase has been slowing down a bit recently.

Figure 2: Development rapeseed acreage Eastern / Central Europe (in 1,000 ha)

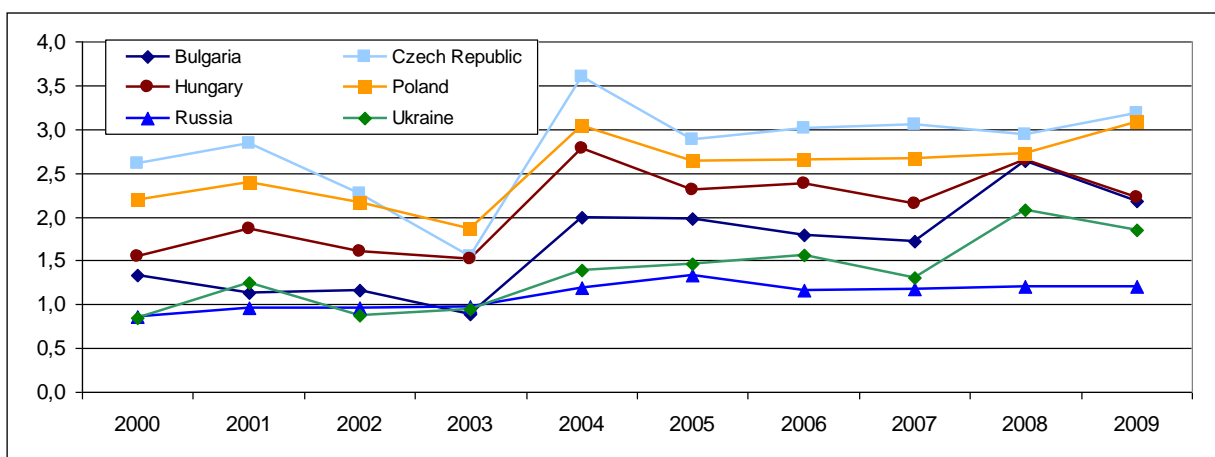


Source: FAO (2011), own calculations

Considering the production of rapeseed, the growth in yields is another important point. The relevant details can be seen in Figure 3.

While yield increases have been rather strong, the absolute level even at the end of the period considered here is rather low. Except for Poland and Czech Republic none of the Eastern European countries was able to produce more than an average of 2.5 t/ha (on average). Contrary to that, yields in Western Europe have been well above this level even back in 2000.

Figure 3: Development of rapeseed yields in Eastern and Central Europe (t/ha)



Source: FAO (2011), own calculations

The past decade's yield increases in the fast-growing regions Russia and Ukraine have risen up to an average percentage of 4 respectively 8.7 % per year, in

Bulgaria to more than 8 % p. a. In Hungary, Poland and the Czech Republic, the increase in rapeseed yields averaged between 3 and 5 % per ha.

This development, that is very positive for rapeseed, raises the question whether economic indicators can explain it. **agri benchmark** the global network of farm economists, advisors and producers is generating annual farm comparisons. More detailed information about **agri benchmark** is available at [www.agribenchmark.org](http://www.agribenchmark.org).

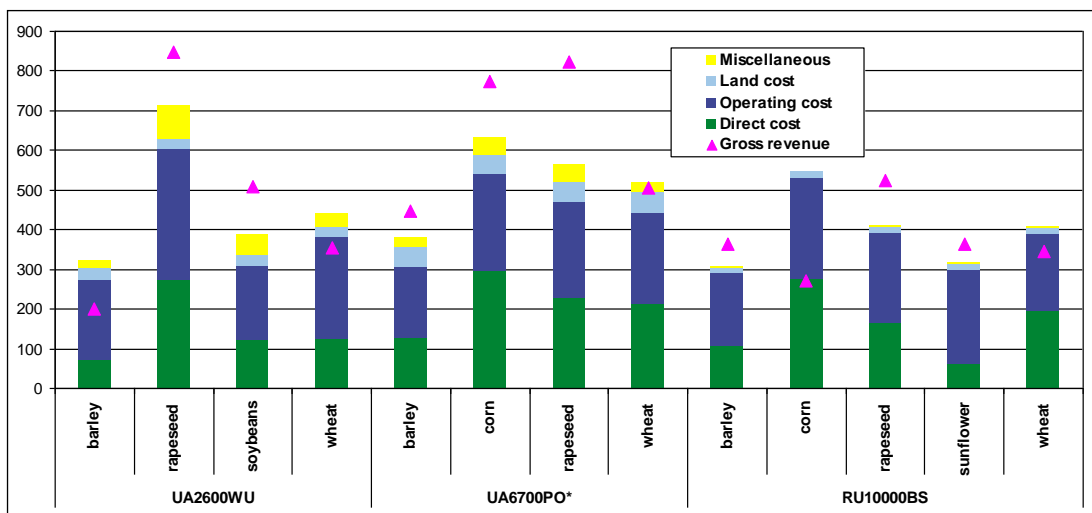
### On-farm competitiveness of crops

With regard to the on-farm competition between different crops in Figures 4 and 5 cost and revenue data for farms in East and Central Europe are shown.

In qualification, it has to be stated, that farms in the Ukraine and Russia do not represent the focus of national production – in contrary to normal **agri benchmark** methodology. The reason for that is that former collective farms, that still cultivate a considerable percentage of the acreage, neither can nor want to take part in international farm comparisons. However, the introduced farms for these two countries represent the modernized ones that are least partly using western technology.

Descriptions of typical farms on the x-axis are to be read as follows: the first two letters indicate, in which country the farm is located, the size (in ha) can be seen from the following numbers and the annex shows the region within the country.

**Figure 4:** **agri benchmark** farms: costs and revenues of arable crops (Ø 2008 – 2010, €/ha)

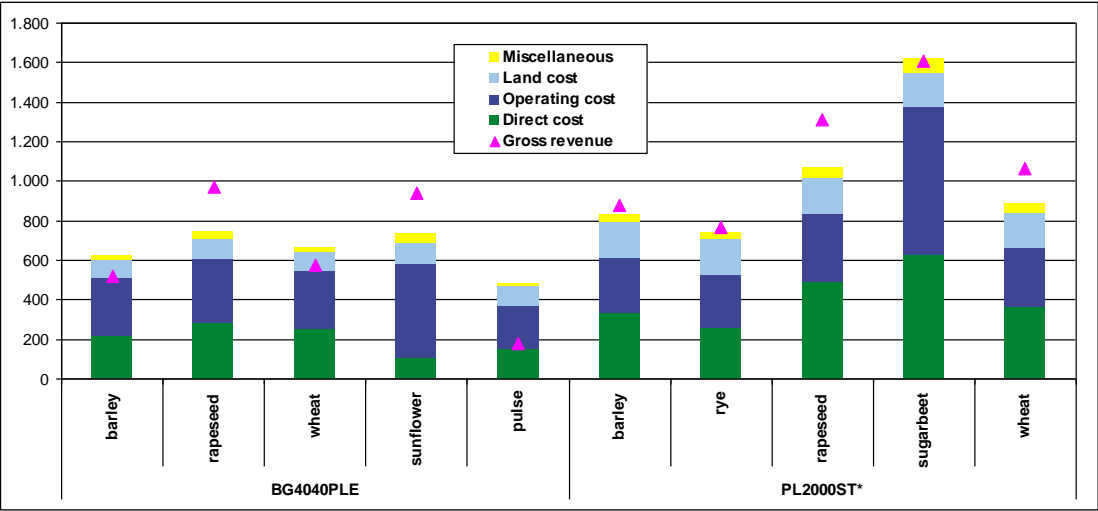


Source: agri benchmark Cash Crop (2011)

Figures 4 and 5 show that rapeseed was in all cases the most profitable crop, compared with cereals the difference in profits is up to 200 € / ha. Even compared to soybeans and sunflowers - as far as cultivated – rapeseed ends up at least a bit better.

That means, under the most recent cost-price ratio typical farms analyzed here have had a strong economic incentive to expand their rapeseed acreage at the expense of other crops, especially grains.

Figure 5: **agri benchmark** farms: costs and revenues of arable crops (Ø 2008 – 2010, €/ha)

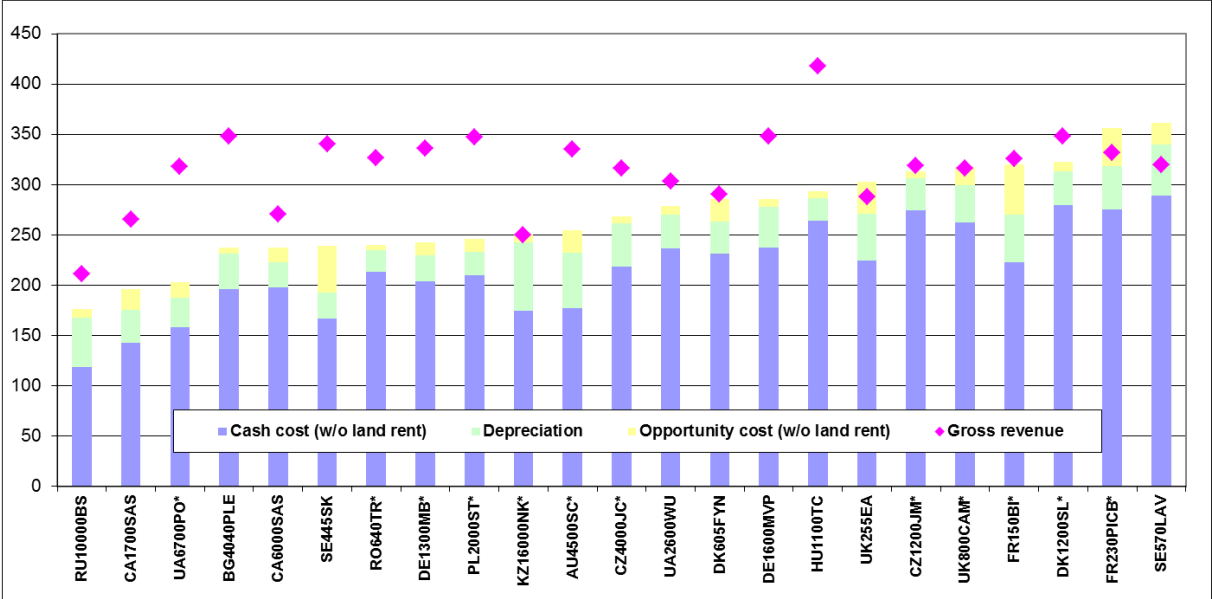


Source: agri benchmark Cash Crop (2011)

**International comparison of cost of production for rapeseed**

Apart from on-farm competitiveness of rapeseed production in Central and Eastern Europe, international competitiveness is an important parameter for development of rapeseed production for this region. Figure 6 compares the production cost of selected **agri benchmark** farms.

Figure 6: Total cost rapeseed (w/o land cost) of selected **agri benchmark** farms (Ø 2008 – 2010, € / t)



Source: agri benchmark Cash Crop (2011)

Total cost is divided into expenses e. g. for fertilizers and pesticides, depreciation for machines and buildings as well as opportunity costs (e.g. for remuneration of family workers). The total revenues include market revenues plus any coupled

governmental payments that still have a certain importance in the Eastern EU member states. The costs for land have not been taken into consideration here as they are strongly distorted by direct payments of the EU.

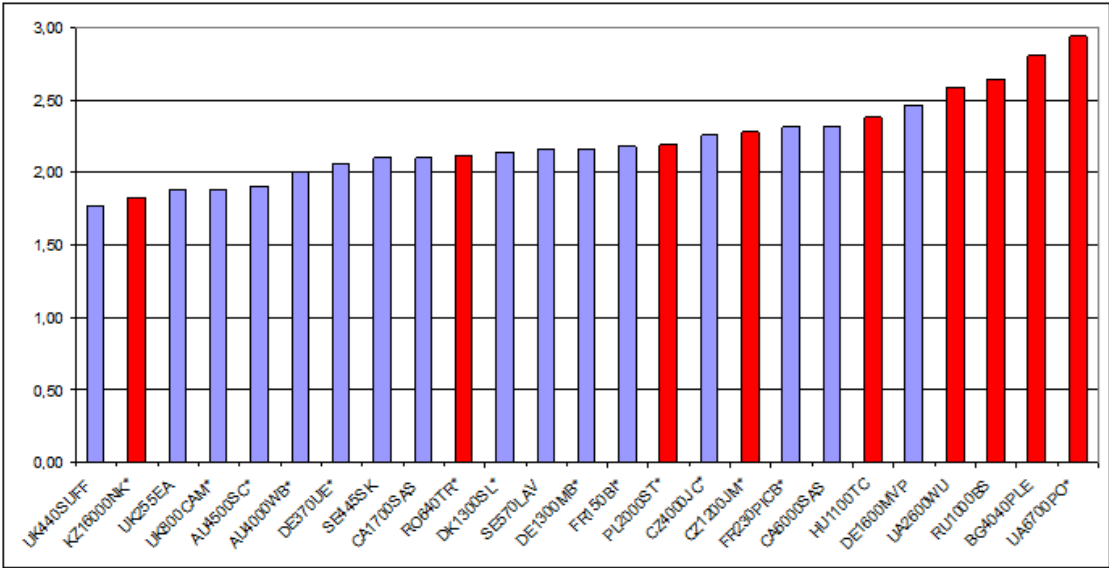
The following conclusions can be drawn from Figure 6:

1. As well as in other crops, the cost is widely dispersed between under 200 €/t up to over 350 €/t.
2. The West European farms show the highest production cost of 300 €/t and more
3. The production cost of most Eastern and Central European farms is, together with those from overseas, the lowest.
4. The farms in Eastern and Central Europe as well as those from overseas, do not only produce more economical, but they also get significantly higher profits with rapeseed.

**East and Central Europe are good at rapeseed – even in the long run?**

A possible explanation for the strong position of rapeseed at Eastern and Central European farms could be a skewed price ratio in favor of rapeseed. A view to Figure 7 shows, that in fact, a wide range of Eastern and Central European farms realize a remarkably wider price ratio between rapeseed and wheat than Western European farms.

Figure 7: Price ratio rapeseed / wheat for **agri benchmark** farms (ø 2008 – 2010)



Source: agri benchmark Cash Crop (2011)

While Eastern and Central European farms are mostly found in between a range of 1:2.3 (see red bars of Figure 7) and 1:3 the majority of Western European farms are characterized by ratios of less than 1:2.3.

There are two different hypotheses about the background of this finding: In Western Europe and Overseas farms are more often able to produce high value wheat which leads to relatively high wheat prices compared to Eastern and Central Europe. Furthermore, wheat is more bulky than rapeseed. Since

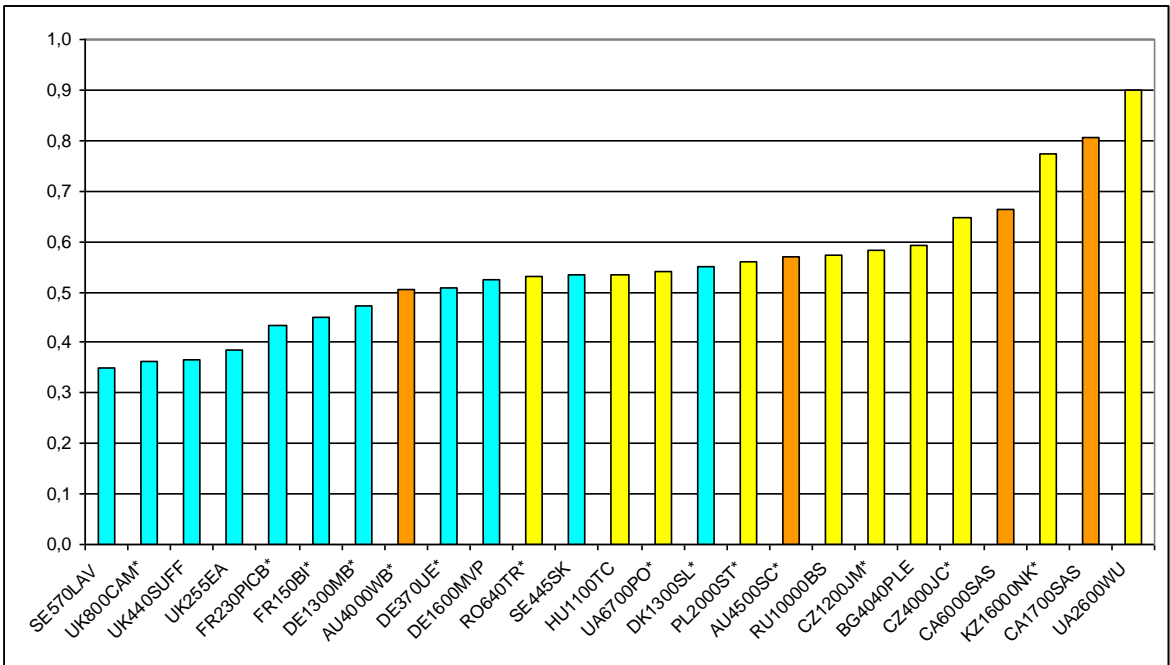
especially in the Ukraine and Russia domestic prices are driven by export parity the high transport and logistic cost in these countries affect wheat more than rapeseed.

Irrespective whether these are real causes, one should draw the conclusion that, in comparison to Western Europe, the observed price ratio between rapeseed and wheat in Eastern and Central Europe was, at least in the past, a driving factor for the strong economic positioning of rapeseed in typical **agri benchmark** farms.

**... and how do yield ratios work?**

Systematic differences between yield ratios can be the reason for differences in internal competitiveness of different crops, too. Therefore, Figure 8 shows the ratios between rapeseed and wheat yields for the typical farms.

Figure 8: Yield ratios rapeseed / wheat of **agri benchmark** farms (ø 2008 – 2010)



Source: agri benchmark Cash Crop (2011)

It has to be noted, that the Eastern and Central European farms (see yellow bars in Figure 8) show significantly closer yield ratios than the Western European farms (blue bars). As the latter harvested mostly less than half as much rapeseed as wheat, the dominating yield ratios for Eastern and Central European farms are higher than 1:0.5. The same is true for the overseas farms (see orange bars) – with the exception of AU4000WB.

## Conclusions

In conclusion the strong position of rapeseed on **agri benchmark** farms in Eastern and Central Europe is caused by the predominantly more favorable price ratio as well as by the better yield ratio which gives rapeseed a competitive edge compared to Western Europe. From this the following conclusions can be drawn.

1. The advantages of rapeseed in Eastern and Central Europe in terms of the yield ratio seem to be stable at medium term, as it is not to be expected that the wheat yields increase sustainably "overnight" and that at the same time the yields of rapeseed stagnate. In contrary, since in this region rapeseed experienced annual growth rates in the range of 8 % while wheat yields went up only by a maximum of 3 % p. a. it can be assumed that this relative advantage of rapeseed will become even stronger in future.
2. In contrary to this, the observed relative advantages of price for rapeseed are generally more volatile. However, the competition between rapeseed, sunflower and soybeans has to be taken into consideration. While those alternatives are not or seldom economically available for Western European farms, the opposite is true for Eastern and Central European farms. As Figures 4 and 5 indicate, those crops have been the only ones that were comparably as profitable as rapeseed.
3. European biodiesel production for legal and technical reasons is currently based on rapeseed to large extent. Therefore demand is rather price inelastic. Given the above mentioned availability of alternative oilseed crops any major change in the price ratio to the disadvantage of rapeseed would growers cause to shift acreage to sunflowers and soybeans instead of rapeseed. ON the other hand, the particularities of the demand for rapeseed that would cause rapeseed prices to go up again. Therefore it can be concluded that a major shift in price ratio between wheat and rapeseed is not very likely to happen. Hence, price incentives to expand rapeseed production are likely to stay in place.