Oilseed producers not that happy

Compared to wheat, 2007 was a strange year for oilseed production on ***agri benchmark*** farms. Wheat production was profitable – in some cases even very profitable. This is not true at all for most oilseed producers. As can be seen in Figure 2.1.4: almost all EU farms were generating losses; even the US farm in Iowa was not profitable in soybeans. As regards the leguminous crop soybeans, their economic value as a previous crop for corn (see Chapter 2.3) does not show up in this crop specific analysis, but is important for the economics of corn.

What are the reasons for this? As Figure 2.1.4 shows, prices were not the major cause – in 2007 the EU rapeseed prices were relatively high with an average in the range of 450 USD/t. Compared to last year's data this represents an increase of about 50 %.

One major difference compared to the 2006 data are the yields: whereas in last year's report six European farms reported yields of about 4 t/ha, in 2007 only two were located in that range (see Table 2.1.1). In general, we can see one league of farms with rapeseed yields in the order of 1.5 to 2 t/ha – this applies for the Eastern producers as well as for those in Australia and Canada. Within the EU the bulk of typical farms was harvesting 3 t/ha and more. This is approximately the same level as in soybeans.

Crop establishment cost relatively uniform

Crop establishment costs remain uniform within the different mega-regions (see Figure 2.1.2). While on the Eastern farms these expenditures are in the range of 200 USD/ha, the EU farms spend between 400 and 600 USD/ha. The Australian and the Canadian farms are comparable to the Eastern ones – the same applies to soybean production on the Brazilian and US farms.

Operating cost within mega-regions differ quite significantly. While the two Russian farms typically invest heavily in machinery in order to get things done in time, the Kazakh farm has extremely lean mechanization. This is because yields are rather low – in wheat even more pronounced than in rapeseeds - and total crop failures do occasionally occur. Lean mechanization shows up in operating costs of about 100 USD/ha while the two Russian farms spend between 300 and 400 USD/ha.

Operating cost on EU farms

In operating cost we see a major variation among typical EU farms. The lowest can be seen in the new EU member states in Eastern and Central Europe as well as in the former GDR. Compared to the rest of Europe, in these countries we see somewhat larger farms. Figure 2.1.3 demonstrates that low labor costs are one major reason, but also depreciation is much lower than on the French, British or other German farms. At the other end of the spectrum we see farms in France, Denmark and UK which exhibit operating costs of 600 to 700 USD/ha.

Across the board it becomes obvious that energy costs have become a relevant issue. Most European ***agri benchmark*** farms spend about 100 USD/ha for diesel. When adding expenditures on nitrogen costs, spendings of about 300 USD/ha are caused by energy-related inputs: this equals 15 to 20 % of total cost.

Profit: a mixed picture

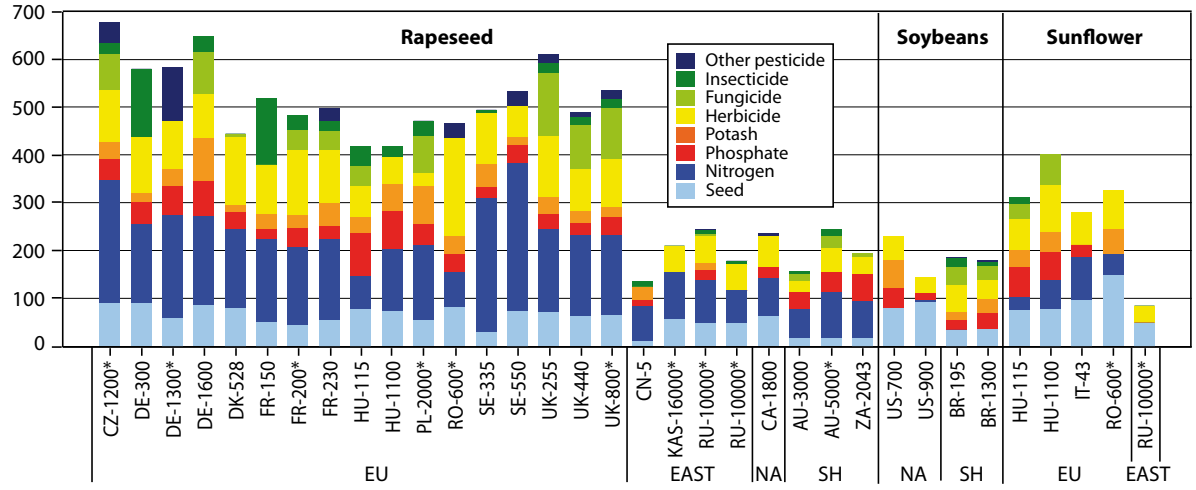
When looking at Figure 2.1.4, the tight economic situation in European rapeseed production in 2007 becomes obvious: only the two Hungarian farms and the large UK farm generate a profit in this crop. In the east, the Russian farms break-even while the Kazakh farm is extremely profitable.

In Canada and Australia, the farms generated profits of about 100 USD/t. Also, positive results have been achieved in soybean production in Brazil and in North Dakota. Only the Iowa farm US-700 was not profitable – one major cause are high land prices of about 140 USD/t or 445 USD/ha.

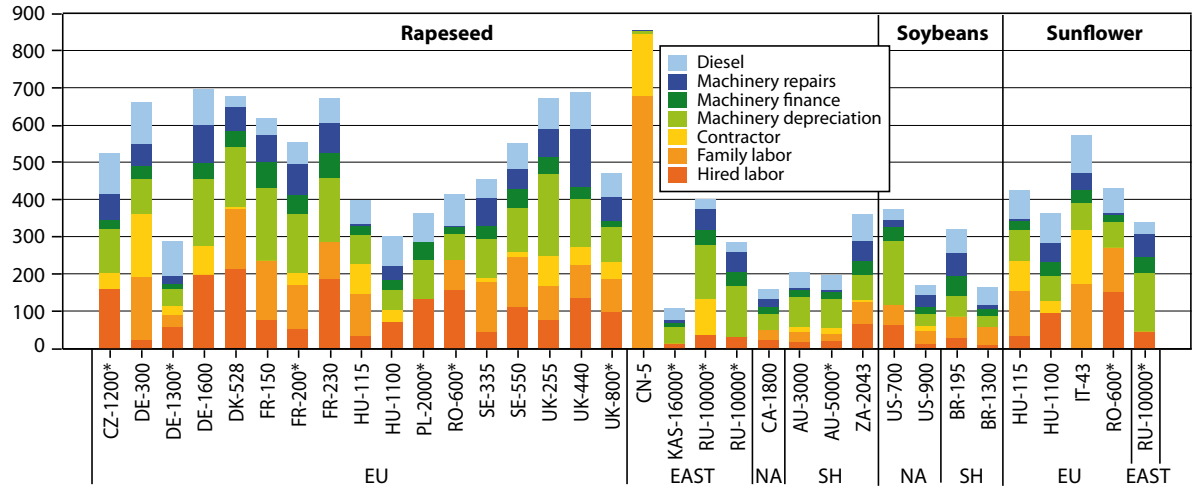
2.1.1 Oilseed yields in 2007 (t/ha)

	Rapeseed																									Soybeans				Sunflower				
Yield (t/ha)	1.6	2.3	1.8	2.5	3.0	4.0	3.0	3.5	3.8	3.4	2.8	3.1	2.1	2.7	3.3	2.5	3.5	4.0	3.4	3.4	3.4	1.5	1.9	1.5	1.6	3.2	3.1	3.2	2.4	2.2	2.0	3.1	2.8	3.0
	KAS-16000*	RU-10000*	RU-10000*	CN-5	CZ-1200*	DE-300	DE-1300*	DE-1600	DK-528	FR-150	FR-200*	FR-230	HU-115	HU-1100	PL-2000*	RO-600*	SE-335	SE-550	UK-255	UK-440	UK-800	AU-3000	AU-5000*	CA-1800	ZA-2043	BR-195	BR-1300	US-700	US-900	RU-10000*	HU-115	HU-1100	IT-43	RO-600*

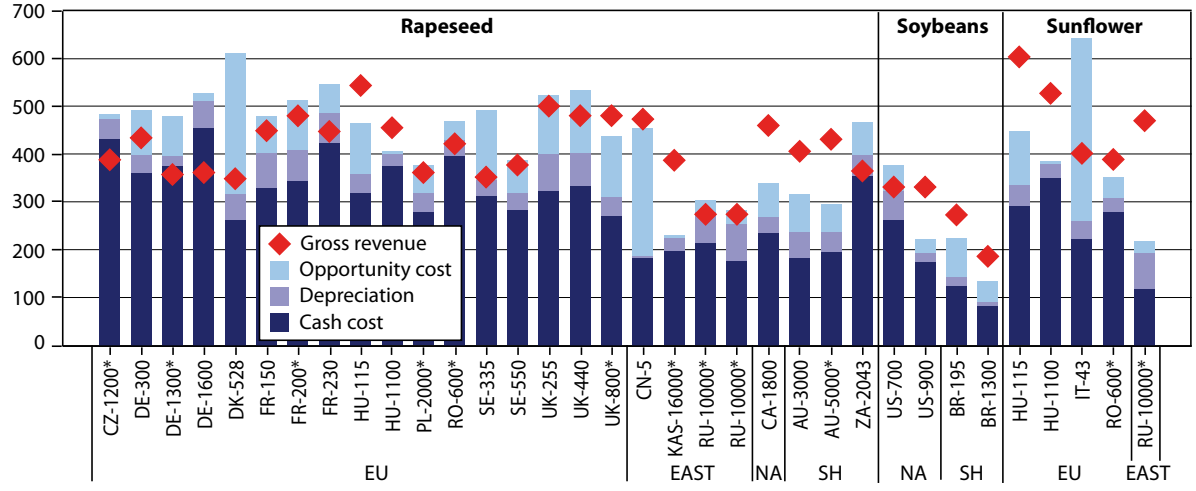
2.1.2 Crop establishment cost oilseeds (USD/ha)



2.1.3 Operating cost oilseeds (USD/ha)



2.1.4 Total cost and gross revenue oilseeds (USD/t)



2.2 Vegetable oil: cost of raw material

How to compare different oilseeds?

One of the key findings from the production cost comparison for rapeseed, soybeans, and sunflower seeds was that costs per ton are much lower for soybeans than for rapeseed or for sunflower. However, the composition of the output is rather different. With an oil content of about 18 %, soybeans are much more a protein crop than an oilseed crop. However, rapeseed and sunflowers are primarily oil-producing crops, with an oil content of 42 % in rapeseed and 50 % in sunflower seeds. Hence the question arises, what are the cost of raw material production for the different vegetable oils.

Vegetable oil production per hectare

In order to make production comparable, the vegetable oil production per hectare has been calculated using the above-mentioned shares of oil content. The result is displayed in Figure 2.2.1. Key findings are:

- Vegetable oil production per hectare from rapeseed is much higher than from soybeans.
- Sunflower production yields as much vegetable oil per hectare as rapeseed production. On the farms that grow both crops – such as HU-1100, RU-10000 or RO-600 – the oil yield of sunflowers is even higher than that of rapeseed.
- With more than 1 t of vegetable oil per hectare, the Russian winter rapeseed production on farm RU-10000 is yielding more oil than either rapeseed-based production in Australia or Canada, or soybean- based production in general.

Cost per tonne of vegetable oil

The next step is to allocate the cost of arable production to the vegetable oil output from oilseed crops. The following approach has been used: costs will be allocated according to the value shares of the final outputs vegetable oil and protein meal. A respective analysis reveals that about 80 % of the value of rapeseed and sunflower is derived from the oil content; whereas that share is about 40 % in soybeans.

Based on these considerations the cost estimates as shown in Figure 2.2.2 have been derived; they lead to the following findings:

- With cost of raw material production of about 500 USD/t, soybean-based vegetable oil production is much cheaper than production based on rapeseed, with a cost of 900 USD/t. When excluding the Italian farm for the time being, sunflower-based oil production cost comes in between rapeseed and soybeans at 600 USD/t.
- Up to now, European rapeseed oil has been traded with a premium over soybean oil of 70 to 200 USD/t (see Figure 2.2.3). However, based on the calculation presented here, this premium is not enough to offset the disadvantage in cost of production.
- The most striking result is that rapeseed-based vegetable oil production on the Russian and Kazakh farms as well as on the Canadian and Australian farms competes well relative to soybean oil production in Brazil or the US. Should rapeseed production in Russia become much more popular, this cost advantage will become an issue for EU rapeseed production.

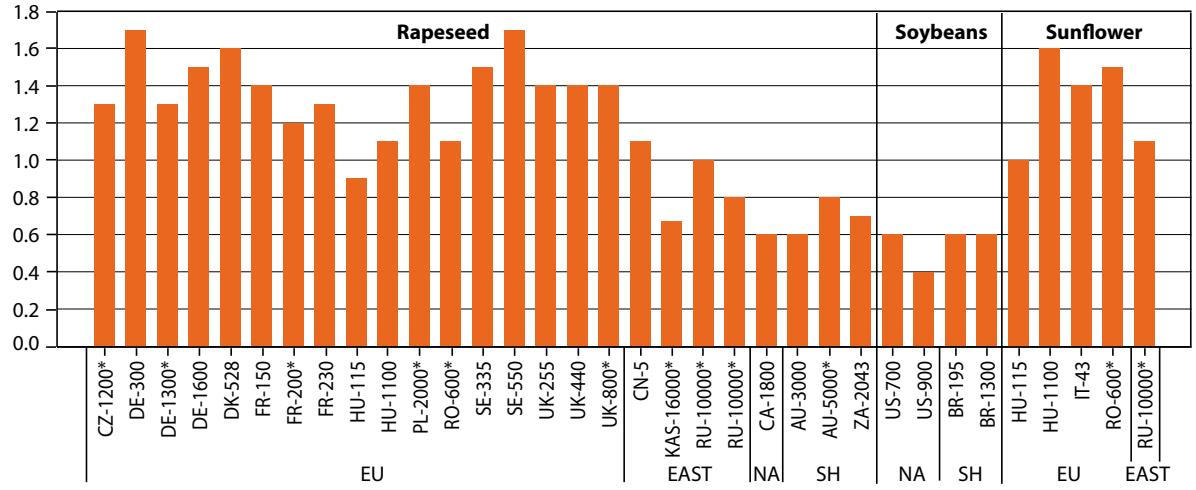
Acreage payments

Especially in the EU, farmers receive significant amounts of decoupled government payments. It can be assumed that these payments in the long run end up benefiting real estate owners by increasing land rents. This means that production costs are inflated. Therefore, these payments have been converted into US Dollars per ton of oil and marked in light blue in Figure 2.2.2.

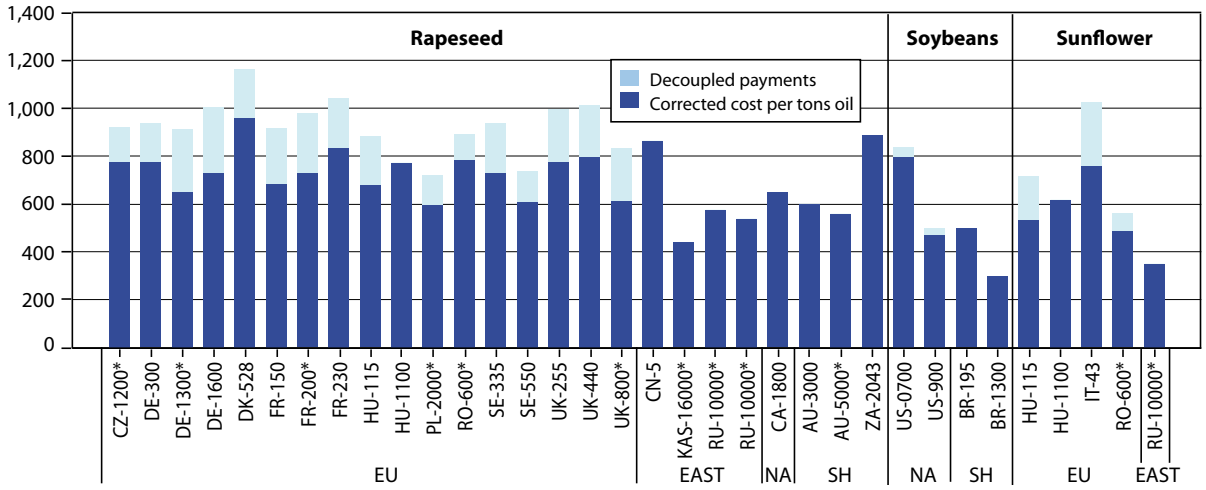
On average cost of raw material production is reduced by more than 200 USD/t when respective payments are deducted. But the gap between EU rapeseed-based production and soybean production as well as eastern and Southern Hemisphere rapeseed-based production is still in the range of 200 USD/t.

Whether cost for marketing, handling, and processing of oilseeds or vegetable oil differ significantly between the regions analyzed here remains to be seen. In case the European value chain would be organized more efficiently than elsewhere, the cost disadvantages of primary production could be somewhat off-set.

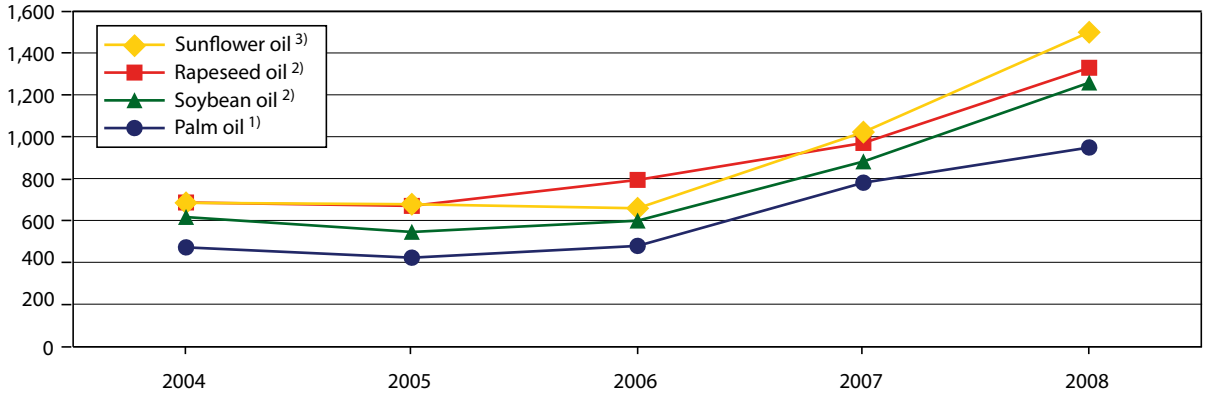
2.2.1 Vegetable oil yield per hectare (t/ha)



2.2.2 Raw material cost per tonne of vegetable oil (USD/t)



2.2.3 World market prices for different vegetable oils (2000 to 2008) (USD/t)



1) Crude, cif Northwest Europe
2) Dutch, fob ex-mill
3) fob Northwest European port

Source: FAO (2009).

2.5 Economics of coarse grains

New crops: malting barley and rye

Due to an increase in available figures, this year's report on the economics of coarse grain production does not only cover barley and corn but also malting barley and rye. Rye is a crop which has a clear regional focus, originating in Northeastern Germany and from there, moving further north and east. Rye has hardy properties which include its resistance to drought as well as its ability to withstand cold winters, both of which are valuable features in a continental climate.

Crop establishment cost

Major results from the comparison of crop establishment costs are displayed in Figure 2.5.2:

- Most of the corn crops are treated only with herbicides. Therefore, even on a per hectare basis plant protection costs are much lower than in the case of barley and rye. As a result, there is a cost advantage of 100 to 150 USD/ha. However, in the US GM traits for insect resistance must be paid for – which ultimately show up in seed cost but not in crop protection.
- European ***agri benchmark*** farms that grow corn spend approximately 100 USD/ha on herbicides which is almost double the cost that farms in the Southern Hemisphere and in the US spend, partly because they have access to herbicide-resistant crops. Yet the Russian farm RU-10000 also only spends about 50 USD/ha, even though it uses conventional seeds.
- In comparison to the production of barley, rye is less intensive with regard to fertilizer application and plant protection. This becomes obvious when the direct costs of both crops grown on the same farm are compared to one another. For example this difference amounts to app. 100 USD/ha (20 % of total direct cost) on the German farm DE-1600 and on the Polish farm PL-2000.

Total cost and gross revenue

Figure 2.5.4 illustrates a wide range of prices realized. While the US and Brazilian farms only realized prices of between 100 and 150 USD/t for corn; barley and malting barley prices reached as much as 250 USD/t.

In coarse grains we see a similar picture to the case of wheat: while the production of corn, barley, malting barley and rye was widely profitable in 2007 (see Figure 2.5.4), there were however, some farms – especially within the EU – which are just break-even.

The farms that stand out in terms of their profitability are farms such as PL-2000 (barley), RU-10000 (corn and malting barley), AU-5000 (malting barley) and HU-1100 (barley). These farms were able to generate profits between 100 and 150 USD/t; but even more remarkable was the fact that all corn production was profitable, irrespective of where the farm was located. The poor performance of the German farm DE-1600 in rye can be explained with extremely low yields of 4 t/ha (see Table 2.5.1). At a yield level of about 6 t/ha this farm would be break-even in rye.

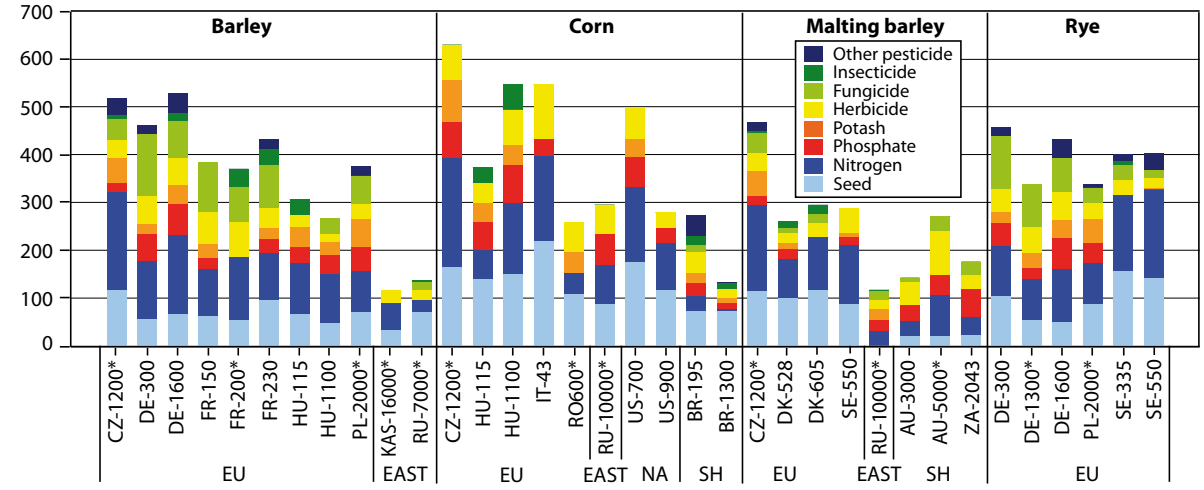
Particularly noteworthy is the extremely successful position of corn production on the Russian farm RU-10000. The cost per tonne (130 USD/t) is less than on the Iowa farm US-700 and only a little bit higher than on the US-900 farm. Should current cost levels and current yields in corn prove sustainable and become even more common in Russia, it appears likely that Russia will become a major player in global corn production.

From the 2007 figures, yet another very strong competitor emerges: with the highest profits per tonne in the entire sample, malting barley production on the Australian farms was very profitable. Moreover, the cost of production were roughly 120 USD/t – which is about half of what the efficient Czech or Swedish farms spent.

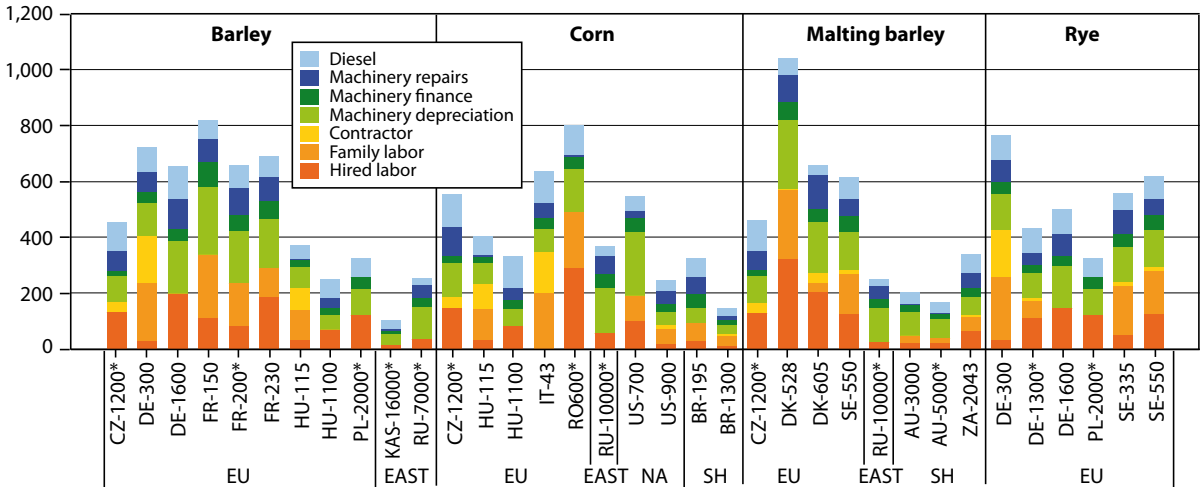
2.5.1 Coarse grain yields (t/ha)

	Barley											Corn										Malting barley							Rye					
Yield (t/ha)	5.5	6.4	7.8	5.8	6.4	5.6	4.8	4.0	7.0	2.0	3.2	7.5	4.5	3.3	8.7	9.0	5.7	11.0	7.7	4.2	9.6	5.0	5.7	6.5	3.2	3.8	5.0	2.9	7.6	4.0	8.5	5.0	7.0	3.0
	CZ-1200*	DE-1600	DE-300	FR-150	FR-200*	FR-230	HU-1100	HU-115	PL-2000*	KAS-16000*	RU-7000*	CZ-1200*	HU-1100	HU-115	IT-43	RO-600*	RU-10000*	US-0700	US-900	BR-1300	BR-195	CZ-1200*	DK-528	DK-605	RU-10000*	AU-3000	AU-5000*	ZA-2043	DE-1300*	DE-1600	DE-300	PL-2000*	SE-335	RO-600*

2.5.2 Crop establishment cost coarse grains (USD/ha)



2.5.3 Operating cost coarse grains (USD/ha)



2.5.4 Total cost and gross revenue coarse grains (USD/t)