Agricultural intensity

The consumption of all mineral fertilisers, including the consumption of NPK fertilisers[1], which is displaying a downward trend, rose in 2010. Consumption of mineral fertilisers in agricultural production in 2010 was up 10.7% on 2009 (consumption of NPK fertilisers was up 11.8%). Measured per hectare of utilised agricultural area (UAA), which increased in the analysed year,[2] this was 102.9 kg NPK fertilisers per hectare, 8.5% more than in the previous year. Having decreased in the preceding period, consumption in 2010 was around the same level as in 2008, yet approximately a third lower than in 2000. Fertilisation intensity does not only affect the quantity and quality of produce but is also important from the environmental perspective, as inexpert and excessive consumption of fertilisers may increase the intensity of pollution of aquifers and consequently, drinking water. Despite the relatively rapid downward trend, the consumption of NPK fertilisers in Slovenia is still much higher than in the EU as a whole. It is also higher than in Italy, Austria and Hungary, where it is below the EU average[3] (2009 figures: Slovenia 94.8 kg/ha, EU 76.9 kg/ha, Italy 67.1 kg/ha, Austria 36.0 kg/ha, Hungary 63.5 kg/ha).

Pesticide consumption continued to drop in 2010. The total quantity of active ingredients in pesticides sold in Slovenia, which are not used solely in agriculture, decreased by 2.5% in 2010, and was down almost a quarter on 2000. Measured per unit of UAA, this was a decline of more than 5% relative to the previous year. Sales of insecticides and herbicides continued to drop at a more rapid pace (10.8% and 8.0%, respectively), while sales of fungicides declined more slowly (0.7%).[4] The figures for quantity are a sum of active ingredients with greatly varying levels of toxicity, so that a comparison of pesticide consumption between countries is not really appropriate.[5] However, a rough comparison of pesticide consumption per unit of UAA shows that countries with similar breakdowns of cultivated plants and similar conditions for agricultural production also have fairly similar pesticide consumptions. Pesticide consumption in Slovenia is higher than in Austria and Hungary, but lower than in Italy.

Agricultural efficiency measured by average yields of the two most important crops improved in 2010, while agricultural efficiency measured in milk yield per animal dropped again. Although for both crops the area sown was smaller than a year earlier, the harvest, which is also highly dependent on weather conditions, was one of the best in the whole period analysed. The yields per unit of area sown with wheat and maize increased by 21.2% and 9.0%, respectively. The yields in Slovenia are much lower than in the EU as a whole for both wheat (2009 figures: Slovenia 4.0 kg/ha, EU-25 5.8 kg/ha) and maize (2009: Slovenia 7.8 kg/ha, EU-25 8.5 kg/ha EU-25), which is an indicator of the relatively poor exploitation of natural resources. Conversely, Slovenia has a relatively high environmental load from livestock production measured by the number of animals per unit of utilised agricultural area. GHG emissions from this source are therefore relatively high, although in a downward trend.[6] At the same time the average milk yield per animal, one of the most important indicators of the efficiency of animal production in livestock farming, is fairly low.[7] After the relatively rapid increases in the previous years, it fell in 2010 for the third consecutive year, to 5.3 l. The average milk yield per animal in Slovenia is significantly below the EU average, and lower than in all neighbouring Member States (2009 figures: Slovenia 5.5 l/animal, EU-15 6.6 l/animal, Italy 6.2 l/animal, Austria 6.1 l/animal, Hungary 6.7 l/animal).

Organic and integrated farming increased in 2010, but relatively little compared with its growth in 2000–2007. The total areas under controlled sustainable (organic and integrated) farming rose by 3.1% in 2010; area cultivated with integrated methods was up 2.4%, while area cultivated organically, which is one of the most efficient ways of sustainably using natural resources, was up 4.5%. Overall 18.6% of UAA was under controlled sustainable farming, two thirds in integrated and one third in organic farming. The number of agricultural holdings with organic farming also increased again, including the number of newly registered holdings shifting to organic farming. In the last few years the increases have no longer met the targets set in the Rural Development Programme 2007–2013 (64 thousand hectares by 2013) and the Action Plan for Organic Farming (20% of UAA by 2015). Only 30.7 thousand hectares of land were organically

[1] NPK fertilisers are mineral fertilisers that contain the three most important plant nutrients: nitrogen, phosphorus and potassium.

[2] Utilised agricultural area expanded by 3.1% in 2010, from 468 thousand to 483 thousand hectares.

[3] Comparison with neighbouring countries that have similar conditions for agricultural production.

[4] Insecticides are chemical agents used for pest control; herbicides are used for weed control and fungicides for plant disease control.

[5] Slovenia uses a significant amount of older types of pesticides. They are biologically weaker and have to be used in greater quantities, but place a lower load on the environment.

[6] According to data and calculations by the Agricultural Institute of Slovenia.

[7] A higher milk yield is desirable, as it would imply a lower environmental load per unit of milk production (Agricultural Institute of Slovenia, 2011).

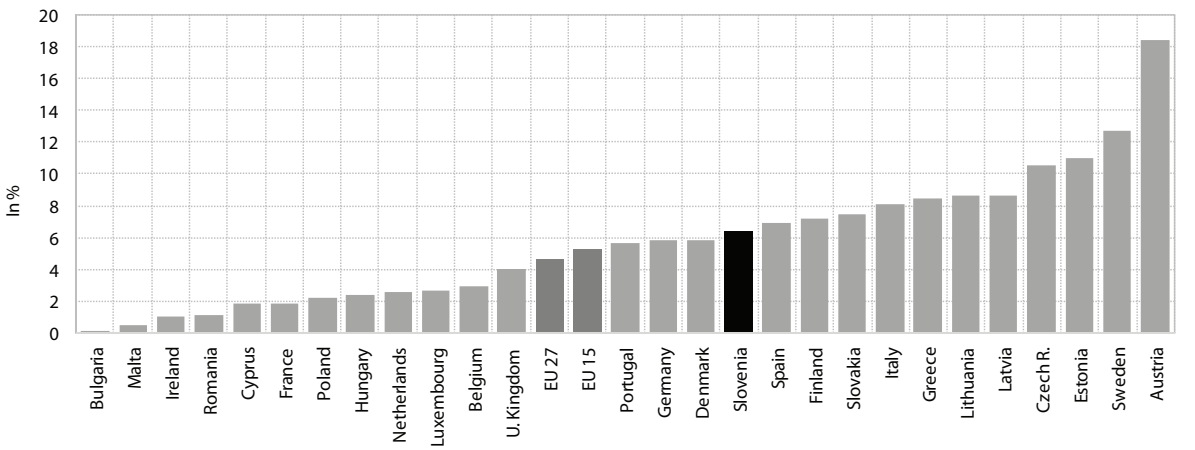
farmed in 2010, which is 6.4% of UAA. In view of the substantial increases in the early period, the share of controlled areas with organic farming in Slovenia is higher than in the EU as a whole, and higher than in Hungary, yet lower than in Italy and much lower than in Austria (2009 figures: Slovenia 6.3%, EU 4.7%, Italy 8.1%, Austria 18.5%, Hungary 2.4%).

Table: **Selected agricultural intensity indicators in Slovenia, 1995-2010**

	1995	2000	2005	2006	2007	2008	2009	2010
NPK fertiliser use								
Use per unit of utilised agricultural area, kg/ha	134.6	146.8	115.3	119.6	115.6	104.9	94.8	102.9
Pesticide sales								
Pesticide sales – total, active substance, thousand t	N/A	1.47	1.41	1.28	1.16	1.22	1.16	1.13
Production intensity								
Average yield of wheat, t/ha	4.2	4.2	4.7	4.2	4.2	4.5	4.0	4.8
Average yield of maize, t/ha	6.3	5.9	8.3	6.9	7.5	7.3	7.8	8.5
Number of livestock units per hectare, no./ha	N/A	1	0.9	N/A	0.9	N/A	N/A	N/A
Average milk yield per animal, t/cow	N/A	4.5	4.9	5.3	5.9	5.6	5.5	5.3
Sustainable production								
Controlled areas with organic farming, in thousand ha	-	5.4	23.2	26.8	29.3	29.8	29.4	30.7
Controlled organic farms, in thousand	-	0.6	1.7	1.9	2.0	2.1	2.1	2.2
Controlled areas with integrated farming, thousand ha	-	-	44.6	49.9	56.9	57.6	57.5	58.9
Controlled integrated farms, thousand	-	-	5.5	5.8	6.0	5.9	5.6	5.5

Sources: SI-STAT Data Portal – Environment and natural resources – Agriculture and fishing, 2011; calculations by IMAD.
Note: N/A – not available.

Figure: **Share of organic farming areas in Slovenia and EU Member States, 2009**



Source: Eurostat, 2011; SORS, 2011.