4 A preserved healthy natural environment

The majority of indicators measuring the exploitation of natural resources and the burdening of the environment in the long term show improvement, but in a period of economic growth it will be hard to sustain the trend without additional energy and resource-efficiency measures. After the beginning of the crisis, resource and energy use declined in line with expectations, as consequently did greenhouse gas emissions, which are a major environmental concern. Reductions were also achieved relative to GDP, but GDP per unit of resources or emissions (resource productivity) remains lower than the EU average. Faster improvement is hampered in particular by greater use of energy in transport, which, being fairly unsustainable, has a significant impact on the environment. Total use of renewable energy sources is significant, though it has not increased in recent years. On the other hand, significant progress has been achieved in terms of waste treatment. As a result, the natural environment is not excessively polluted on average, which is further helped by the large share of protected areas, high forest cover and moderate intensity of agriculture. It is, however, necessary to point to two major issues: poor air quality due to relatively high concentrations of particulate matter and ozone and irrational use of space associated with areas that remain poorly utilised or abandoned following the crisis.

4.1 A low-carbon circular economy

A low-carbon circular economy (development goal 8)

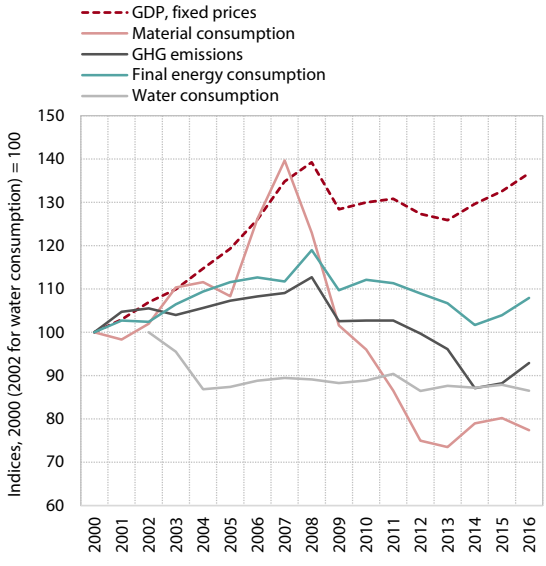
The aim of SDS 2030 is to break the link between economic growth and increasing consumption of raw materials and energy, which is associated with significant pressure on the environment. Sustainable growth will be achieved by profound changes in consumption and production patterns, and thus by more efficient exploitation of resources, waste management and energy use, and a higher share of renewable energy sources. This will also help reduce greenhouse gas emissions. Changes in this direction will be supported by education and integration, the promotion of environmental innovations, and, most notably, the phasing out of fossil fuels. SDS 2030 also highlights the necessity of changing transport by accelerating the development of sustainable mobility.

Performance indicators for development goal 8:

	Latest value		Target value for 2030
	Slovenia	EU average	
Resource productivity, PPS/kg	1.9 (2016)	2.2 (2016)	3.5
Share of renewable energy in gross final energy consumption, in %	21 (2016)	17 (2016)	27
Emission productivity, PPS/million kg CO_2	2.9 (2015)	3.3 (2015)	EU average in 2030

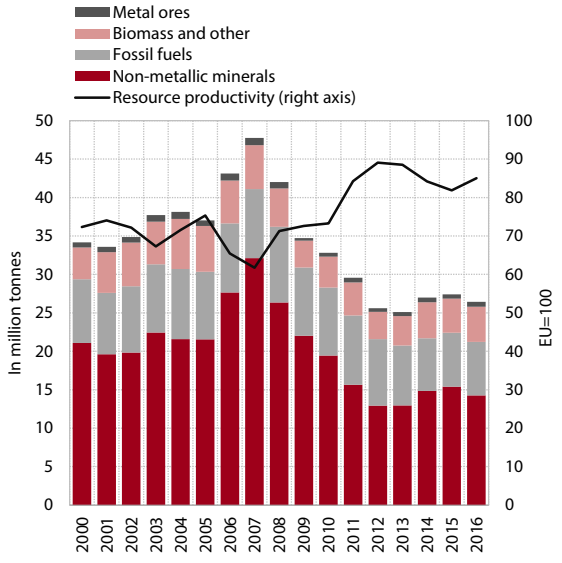
After the start of the crisis, consumption of natural resources declined at a faster pace than GDP. Analysis of the environmental dimension of economic development is typically conducted using indicators which show the ratio between economic growth and the consumption of materials, energy and water and the resulting greenhouse gas emissions. During the crisis, the amounts of most of the resources studied and hence emissions declined relatively fast. The consumption of materials decreased the most, which is attributable to the decline in construction activity during the crisis; alongside the consumption of water, the consumption of energy dropped the least, this mostly as a consequence of increased use in transport. The overall improvement was however not only a result of more sustainable solutions, given that the consumption of energy and materials increased again with the rebound in economic growth, which led to an increase in greenhouse gas emissions. Energy consumption and emissions responded to the rebound in economic activity with a slight lag; this was

Figure 19: GDP growth compared to growth of energy, material and water consumption and greenhouse gas emissions



Sources: SI-STAT Data Portal – Economy; SI-STAT Data Portal – Environment; calculations by IMAD.

Figure 20: Domestic material consumption[1] and relative resource productivity, Slovenia



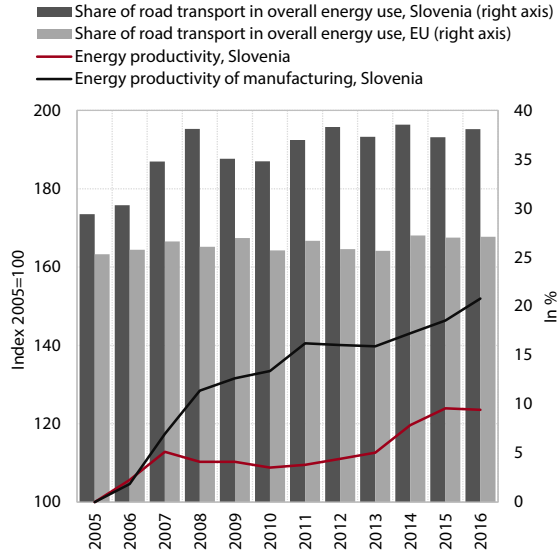
Sources: SI-STAT Data Portal – Environment, 2017; Eurostat Portal Page – Environment, 2017; Eurostat Portal Page – Economy and Finance, 2017; calculations by IMAD.
Note: [1]Domestic material consumption is defined as domestic extraction plus net imports of materials.

a consequence of the closure of a major thermal power plant and milder winters having reduced the demand for heating.

Material consumption dropped following the start of the crisis, mostly due to a decline in construction activity. *Resource productivity*, which is one of the fundamental circular economy indicators and is measured as the ratio of GDP to domestic material consumption, increased at a faster pace than in the EU as a whole in 2007–2012 on the back of a contraction of construction activity and the resulting decline in the consumption of non-metallic minerals. Fluctuations in construction activity also had a significant impact on material consumption in subsequent years. In 2016 resource productivity increased to 85% of the EU average, meaning that for a unit of consumed resources, Slovenia created 15% less GDP than the EU on average (see Indicator 4.1). Sand, gravel, lime and gypsum account for around 50% of material consumption, a share that is among the highest in the EU. Given the rebound in construction activity, a further improvement in resource productivity will be difficult to achieve, as the increase in resource productivity is expected to slow due the implementation of some major construction projects, such as the planned construction of rail infrastructure.

Due to energy efficiency measures and the impact of certain one-off factors, energy consumption has decreased substantially. The consumption of energy for heating has declined due to more prudent use, better building insulation, greater efficiency of heating installations and other efficiency measures. In individual years the decline was significantly related to above-average temperatures in the heating season. In 2014 the consumption of solid fuels decreased mostly on account of the closure of a brown coal-fired thermal power station and modernisation lignite-fired power station. In liquid fuels the consumption of petrol and heating oil[100] dropped, while the consumption of diesel has been growing due to increasing road freight transit; in 2016 this was the single biggest contributor to the increase in overall energy consumption. High consumption in transport is the main reason why overall energy consumption has declined at a slower rate in the last several years. In the future, it may even rise again due to the uptick in economic activity and the expansion of transit in the broader region, which may make it difficult to achieve short- and long-term objectives (see Indicator 4.4). As overall energy consumption declined, *energy productivity*, measured as the GDP to overall energy consumption ratio, improved over the longer time horizon: in the last several years it has been about a fifth below the EU average.[101]

Figure 21: Energy productivity in Slovenia and in manufacturing; share of road transport in final energy consumption



Sources: Eurostat Portal Page - Environment and Energy, 2017; Eurostat Portal Page - Economy and Finance, 2017; calculations by IMAD.

The share of renewable energy sources (RES), for which Slovenia has relatively favourable natural conditions, is above the EU average but has stagnated in recent years. The growing use of RES until 2009[102] was initially driven by increased consumption of wood and wood biomass and later by solar and geothermal energy. Over the subsequent seven years, the share of RES increased only modestly, by 1 pp to 21% (EU: by 5 pps to 17%). Traditional RES – wood and hydropower – account for the bulk of RES (see Indicator 4.2). The use of wood for heating is otherwise desirable from the aspect of RES, but using it incorrectly may cause problems with particulate emissions. Regarding the use of other RES, Slovenia ranks at the tail end of the EU, with the gap in wind energy being particularly wide. In heating, Slovenia has retained a much higher share of RES due to the use of wood; the share of RES in electricity consumption is almost equal to the EU average due to rapid growth in the EU as a whole, while the already small share of RES in transport has decreased further in the last ten years, unlike in the EU where it has been increasing in this period.[103] Though natural conditions such as forest, water and wind abundance are favourable in Slovenia, more intensive action will be needed to eliminate obstacles to the completion of individual projects and expand the use of RES.

Emissions of greenhouse gases, which significantly contribute to climate change, declined following the crisis. Preliminary estimates show greenhouse gas

[100] Lower consumption of heating oil has been partially offset by wood and wood pellets.

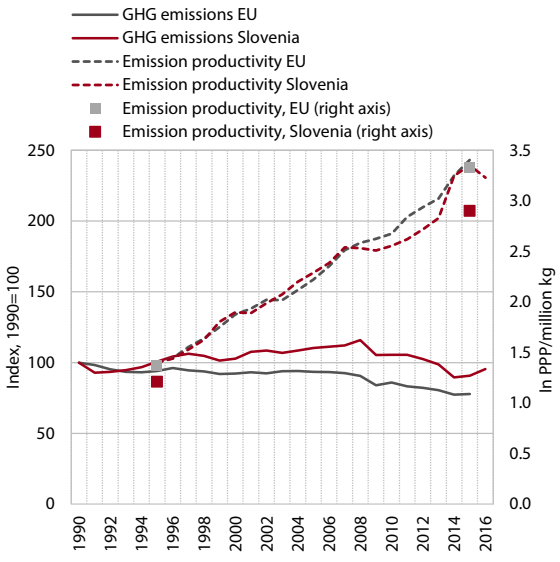
[101] In comparisons over time, we use GDP at fixed prices for overall energy use; in comparisons between countries or with the EU, GDP in purchasing power standards (PPS) is used.

[102] In that year, the share of renewables increased the most, not only as a result of the crisis and hence a decline in overall energy use, but also of improved statistical capture.

[103] In 2016 the share of biofuels in transport was 1.6%, with the EU target for 2020 at 10%.

emissions in 2016 were about 18% lower than in the peak year 2008 (see Indicator 4.3). After the decline in emissions from the energy sector (mainly as a result of the closure of a major thermal power plant), the biggest source of greenhouse gases in the country has become transport. The goal for 2020 that emissions from sectors not included in the Emission Trading Scheme (ETS) will not increase by more than 4% on 2005[104] was exceeded in the initial years. Continued achievement of the goal will be contingent on the rising emissions of the transport sector, which accounts for half of these sectors' emissions. Particularly problematic is the use of fossil fuels; this had been promoted with higher subsidies in previous years, which is contrary to emission reduction goals.[105] *Emission productivity*, measured as the ratio of GDP to greenhouse gas emissions, is below the EU average, but the gap has narrowed over the last several years; in 2015 emission productivity in Slovenia was roughly 13% lower than the EU average. Its growth, which had been similar to the EU average during the boom years, slowed more than in the EU during the crisis, before accelerating again in the last several years. This has however been mainly due to one-off factors (such as the closure of a thermal power plant and reduced heating in milder winters); to achieve longer-term headway, even with faster GDP growth, improvements of a more permanent nature will be required.

Figure 22: Greenhouse gas emissions and emission productivity



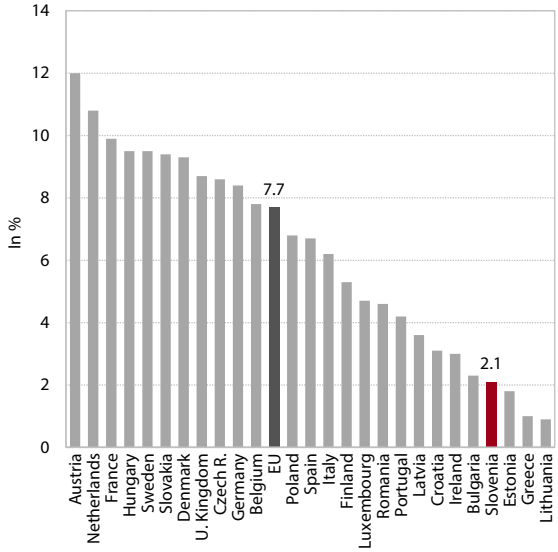
Sources: Eurostat Portal Page - Environment and Energy, 2018; Eurostat Portal Page - Economy and Finance, 2018; calculations by IMAD.
Notes: The figure for 2016 is the preliminary estimate by the Environment Agency. Comparison in PPS is sensible between countries in an individual year but not over a longer time horizon.

[104] Decision No 406/2009/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions (OJ L 140, 5.6.2009) and Operating Programme of Measures to Reduce Greenhouse Gas Emissions by 2020 (Government of the Republic of Slovenia, 2014).

[105] Second annual report on implementation… until 2020, 2017.

The volume of transport, which has a significant impact on the environment, has increased sharply after each round of EU enlargement, with growing road transport a particularly pressing problem. Transport shapes the modern way of life; it connects and it facilitates trade, but it has a significant harmful impact on the environment and the health of the population. The main problem is the high, and growing, consumption of non-renewable fossil fuels. In Slovenia most goods are transported by lorry and most passengers travel by car, neither of which is particularly environmentally friendly. Though they are also the dominant transport modes in other EU countries, in Slovenia they account for an above-average share of total transport. The share of road freight surged in the middle of the last decade and has accounted for roughly four-fifths of total freight transport in recent years (see Indicator 4.5). The volume of road freight services performed by Slovenian road hauliers has increased significantly, mostly on account of services performed abroad; in Slovenia, meanwhile, an increase has been recorded in the transport operations of foreign hauliers, which are already estimated to account for over three-quarters of all hauliers on Slovenian motorways. In passenger transport, cars are a more common mode of transport than in the EU, whereas the use of public transport, in particular railways, is relatively low by international standards. This can partly be attributed to a lower degree of urbanisation and higher dispersion of settlements, but in recent years the trend has also been affected by reduced frequency of operation and discontinuation of public transport lines, as evident from the relatively high share of the population who assess public transport as poorly accessible.[106] Sustainable

Figure 23: Share of rail transport in overall passenger transport, in passenger kilometres



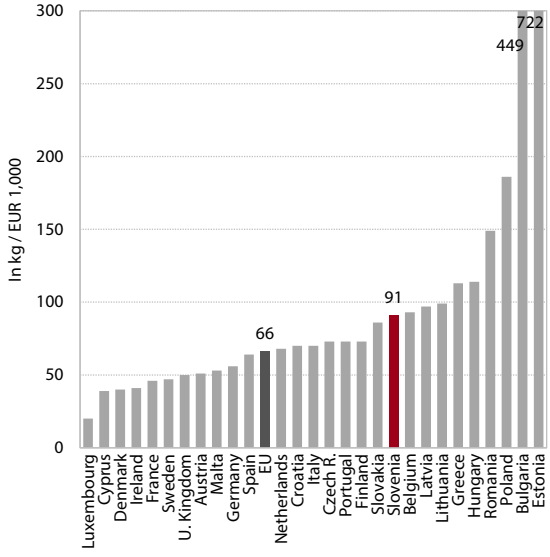
Source: Eurostat Portal Page – Tables on EU policy, 2018.
Notes: The indicator refers to travel within the country, regardless of ownership of vehicle. Cyprus and Malta do not have rail transport.

[106] Additionally, transportation costs as a share of household expenditure are the highest in the EU.

mobility would improve with an expansion of the public transport network and its modernisation, combined with the development of more environmentally friendly technologies.

Manufacturing activities create around one third more waste per unit of GDP than the EU average, but progress has been achieved in the treatment of municipal waste. In manufacturing and services, the amount of waste generated increased by a fifth in 2012–2016 (see Indicator 4.6). Reducing waste, both in absolute terms and per unit of GDP, will require a more substantial shift into a circular system, i.e. increased use of recyclable materials. Generation of municipal waste has also been increasing, but it is still slightly below the EU average. More attention will have to be paid to certain categories of waste that are problematic in a broader sense, for example hazardous waste and food waste.[107] Foreign trade in waste has been increasing, with exports outpacing imports. Net waste exports dropped to around 2% of all generated waste. *Treatment* of waste has improved significantly in recent years, also owing to newly built or modernised regional waste-processing centres.[108] Indeed, the value of total environmental investments and current expenditure on the environment was highest precisely in the waste treatment area. Better treatment reduces landfilling, the least environmentally desirable outcome of treatment,[109] while improving processing and hence recycling – actions contributing towards sustainable development. Preparation of waste for reuse contributes to a more efficient use of resources, reduces emissions of greenhouse gases and dependence on imports of raw materials, and creates opportunities for new green jobs. Further progress in this field will also be driven by joint EU guidelines, for example the recent measures regarding plastics.[110]

Figure 24: Generation of waste excluding major mineral wastes per GDP, 2014



Source: Eurostat Portal Page – Tables on EU Policy, 2018.

[107] The amount of food waste, a reflection of consumers' attitude to food and the environment, is increasing. In 2015 each inhabitant of Slovenia threw away on average 73 kilograms of food, up 14% on 2013. Food waste accounts for around 3% of all waste and about 22% of total organic waste created in Slovenia.

[108] In the previous programming period, these were among the most important environmental cohesion projects.

[109] Landfilling is also problematic in terms of greenhouse gas emissions: it accounts for about 4% of total emissions.

[110] In early 2018 the first strategy for plastic waste was adopted in a bid to change the way plastic products are designed, produced, used and recycled. Plastic is produced in excessive amounts and how it is used and landfilled does not leverage the economic benefits of a more circular approach. The new strategy is expected to increase the usefulness of recycling, reduce the amount of plastic waste, help stop plastic pollution, and encourage investments and innovations (Strategy on Plastics (EC), 2018).

4.2 Sustainable natural resource management

Sustainable natural resource management (development goal 9)

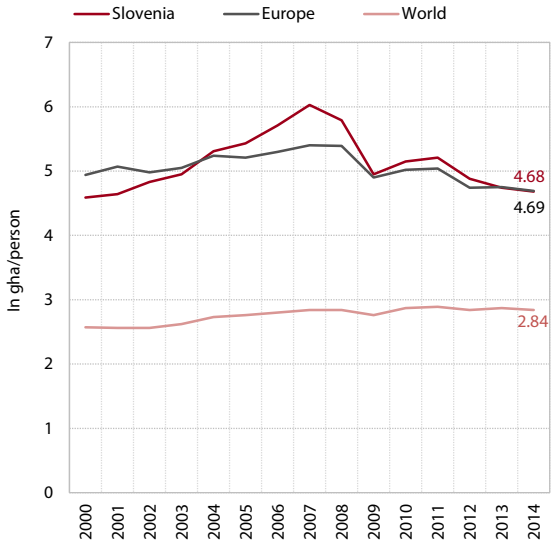
The aim of SDS 2030 is to sustainably protect natural resources and plan an efficient use thereof, as they represent a pillar of a healthy living environment, the production of high-quality food and the performance of economic activities with high value added. The goal will be achieved by overcoming silo mentality, preserving biodiversity, managing soil in a sustainable way, preserving high-quality farmland, sustainably developing forests and efficiently managing waters. SDS 2030 also recognises the importance of a responsible treatment of space. Efficient adaptation to climate change and exploitation of the opportunities that climate change brings will be particularly important.

Performance indicators for development goal 9:

	Latest value		Target value for 2030
	Slovenia	EU average	
Utilised agricultural area, in %	23.6 (2016)	40.6 (2015)	>24
Quality of watercourses, mg O_2/l	1.0 (2012)	2.2 (2012)	< 1
Ecological footprint, gha/person	4.7 (2014)	4.7 (2014)	3.8

Current production processes and lifestyles are exerting too much pressure on nature. Long-term changes in lifestyles have accelerated the exploitation of natural resources and increased pollution. The *ecological footprint,* a synthetic indicator of environmental development, increased quite rapidly in the period of economic growth, then dropped during the recession almost to the level before economic growth (see Indicator 4.10). The latest calculation, for 2014, shows it amounted to 4.7 gha/person, roughly on a par with the EU average.[111] *Nature's biocapacity*, i.e. biological areas with regeneration capacity, is below the EU average on a per capita basis. Forests account for the bulk of Slovenia's biocapacity area, but despite their large surface area they do not suffice to absorb emissions of carbon dioxide, the biggest contributor to the ecological footprint. In Slovenia the difference between ecological footprint and biocapacity, called the *ecological deficit*, is therefore above the European average and amounts to twice the biocapacity of Slovenian nature. Due to greenhouse gas emissions, one of the principal causes of climate change, the carbon footprint is the greatest single reason why ecological limits are exceeded.

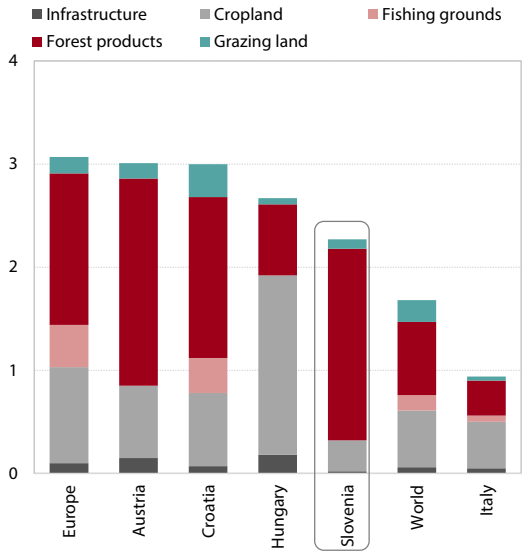
Figure 25: Ecological footprint



Source: National Footprint Accounts (Global Footprint Network), 2018.

[111] National Footprint Account (Global Footprint Network), 2017.

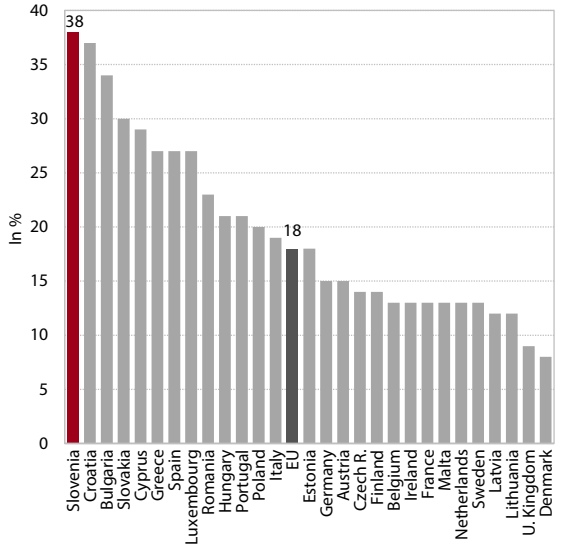
Figure 26: Biocapacity and structure, 2014



Source: National Footprint Accounts (Global Footprint Network), 2018.

Boasting extraordinary animal and plant life, Slovenia is among the areas with the highest biodiversity in Europe, a result not only of natural conditions but also of the protection of plant and animal species and prudent ecosystem management. Protected area with high biodiversity, landscape diversity and natural features is a particularly important component thereof. Measured by the share of protected area, which is key to preserve the habitats of endangered species, Slovenia ranks at the top among EU countries with twice the average share of such area. Yet despite numerous activities to protect it, biodiversity has been declining in Slovenia, largely due to non-sustainable spatial management.[112] The most pressing problems are (i) development with inappropriate spread of urbanisation, transport and industrialisation, (ii) poorly conceived management of waterways, mostly in connection with flood prevention measures, and (iii) agriculture, which provides habitat for protected species but also shrinks habitat in areas of very intensive agriculture. The challenges are to overcome silo mentality, seek compromise between the interests of nature protection and economic activity, and act in concert, in particular when it comes to land use, which will produce synergies.

Figure 27: Share of protected area, 2016



Source: Eurostat Portal Page – Tables on EU Policy, 2018.

Soil in Slovenia is largely unpolluted, yet, despite the good overall condition, there are individual areas polluted with inorganic (e.g. cadmium, lead, arsenic and copper) or organic pollutants (e.g. pesticides).[113] At individual sampling locations with past or present mining, smelting or metallurgical activity, studies have shown values for inorganic pollutants above action values and, in some cases, above critical values. The most polluted areas include the Mežica Valley, the Celje Basin, Jesenice and Idrija. The presence of cadmium and lead are particularly problematic for both environment and people.[114] Pollution of soil with organic pollutants is less problematic since in most areas action values have not been exceeded. In some areas of intensive agricultural production, limit values of pesticides or their breakdown products have been moderately exceeded.

Agriculture, one of the key factors in land management, is not very intensive by international standards. Slovenia ranks among the EU countries with the highest share of agricultural land in less-favoured areas and the highest share of grassland. Field surfaces are modest and shrinking (for regional distribution, see Figure 31. The synthetic indicator of soil quality, the "soil value number", shows that only 7% of farmland is in the top-quality class and as much as a fifth is in the lowest two quality classes.[115] These conditions hamper agricultural production, reduce efficiency and dictate a significant focus on animal production (see Indicator 4.8). Moreover, agricultural land remains poorly utilised, even though significant structural changes such as increases in the size of agricultural holdings and increased specialisation are underway. The nitrogen and phosphorous balances, which are indicators of agriculture's impact on soil and water, have significantly improved over the long term. Average yields are mostly below the EU average, which means that the impact on the environment is less severe but also indicates poor land utilisation. Consequently, self-sufficiency in the majority of basic agricultural products, in particular organic produce, is relatively low.[116]

Management of forests, which cover the majority of Slovenia's territory, is sustainably oriented but forest resources are not sufficiently exploited. Slovenia is one of the three most forested countries in Europe and forests are its best-preserved natural ecosystems. While this is favourable for the environment, a very high share of forest is not desirable in terms of optimal use of space. Slovenia's forest cover has been increasing, but the

[112] It is quite difficult to determine biodiversity because of the large number of species and interaction between them and with the abiotic environment. Indicators that broadly show the general condition include population size of selected bird species, farmland bird index, conservation of wildlife populations and forest conservation.

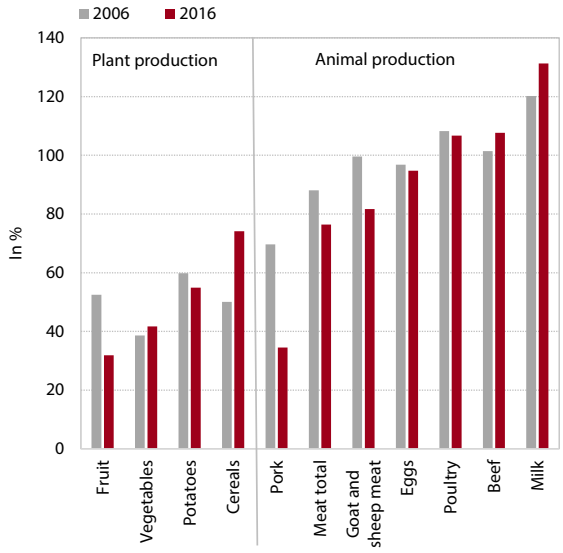
[113] Surveys of Soil Pollution in Slovenia in 2008 (Biotechnical Faculty), 2009.

[114] In the Mežica Valley, measures have been carried out since 2008 to remedy the problem of soil pollution, including the asphalting of unmetalled roads, replacing polluted soil, resurfacing with unpolluted soil and planting grass. Lead content thus dropped to below action level, but in some places, it has started to increase gradually. Before the remedial measures, 20% of children had elevated blood lead levels, while in recent years the share has dropped to 10% (Report on the Environment in the Republic of Slovenia 2017, 2017).

[115] The soil value number indicates the capacity of soil to sustain agricultural production and its capacity to perform basic ecological functions. Features such as soil depth, the ability to retain water and slope are factored in. Soil is divided into five classes (Anamarija Slabe, 2015).

[116] Increasing self-sufficiency – providing food security with stable production of safe, high-quality and accessible food – is one of the main strategic goals of the Slovenian agri-food sector (Resolution on Strategic Guidelines… until 2020, 2011).

Figure 28: Degree of self-sufficiency in basic agricultural products, Slovenia

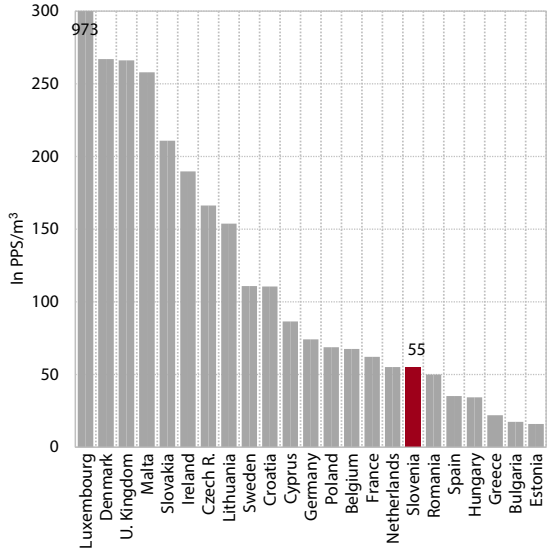


Sources: SI-STAT Data Portal – Environment and Natural Resources – Agriculture and Fishing; Agriculture Institute, 2018.

changes have not been uniform. It has increased in areas where there was already plenty of forest from the aspect of landscape diversity, and decreased in areas of intensive agriculture and, in particular, in suburban areas.[117] Since 2014 Slovenian forestry has been grappling first with the consequences of a severe glaze damage and later with a massive invasion of forest pests. At the end of 2017 forests were also hit by a strong windthrow, which means that the extensive sanitary cuts will continue. The intensity of tree felling remains relatively low, whereby the growing net exports of the best quality wood remain particularly problematic (see Indicator 4.13).

Slovenia has very abundant water sources and most water bodies have a good chemical status; however, the ecological status of some river basins is not satisfactory. Slovenia has enough water, on average: only half of the quantity of surface waters flowing into or falling on the territory is utilised, and only a fifth of groundwater. Total water consumption has been decreasing over the long term, including due to more rational use and lower losses on the network. Nevertheless, there are occasional water shortages, largely due to uneven distribution of rainfall and increased evaporation. The share of water for irrigation in total water use is almost negligible, but it will increase because of accelerated climate change. Biochemical oxygen demand, a measure of water quality, decreased to the lowest level among EU countries after 2005 due to more and better treatment of wastewater. This indicates a significant improvement in the chemical, biological and biochemical parameters and an increase in the biodiversity of aquatic ecosystems.[118] Slovenian rivers are fairly oxygen-rich and contain low levels of nutrients (see Indicator 4.9), but fertiliser and pesticides still represent a hazard for waters in areas of intensive agriculture. In 2009–2016, 96% of bodies of surface water had a good chemical status and 59% a good ecological status. The ecological condition is worrying in particular in the Mura river basin, where the majority of the body of water does not have a good ecological status.[119] Water productivity, measured as GDP per unit of pumped freshwater, has improved slightly over the long term but remains low by international standards.

Figure 29: Water productivity, 2015 or latest data available



Source: Eurostat Portal Page – Tables on EU Policy, 2018.

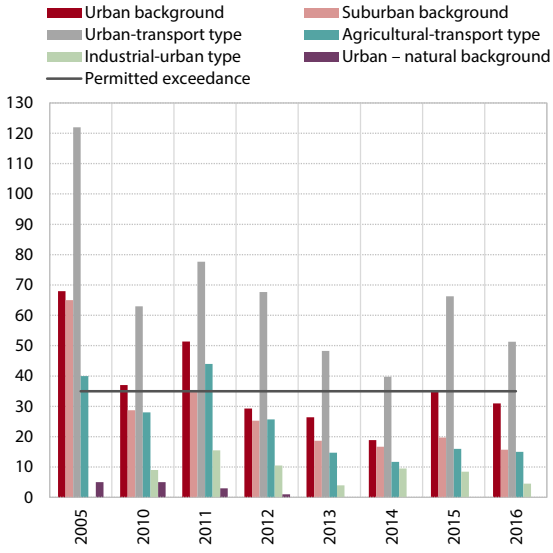
The issue of air quality in Slovenia is largely related to concentrations of particulate matter and ozone, indicators which have not been improving in recent years. *Particulate matter (PM)* is created mostly through the burning of wood biomass in household furnaces and in road transport, in particular from diesel vehicles, but it is also generated by industry and agriculture. Despite reductions, especially in the winter, exposure of the urban population to these particles is still relatively high and exceeds the EU average (see Indicator 4.11). Daily limit values of PM_{10} were most commonly exceeded at measuring points in cities affected by transport emissions, but there is significant uncertainty about the conditions in populated rural areas, where there

[117] Resolution on the National Forest Programme, Official Gazette of the RS, No. 111/07.

[118] The chemical status of waters is determined with reference to 45 priority substances including atrazine, benzene, cadmium and mercury. The ecological status of waters is assessed based on the condition of communities of water plants, algae, invertebrates and fish.

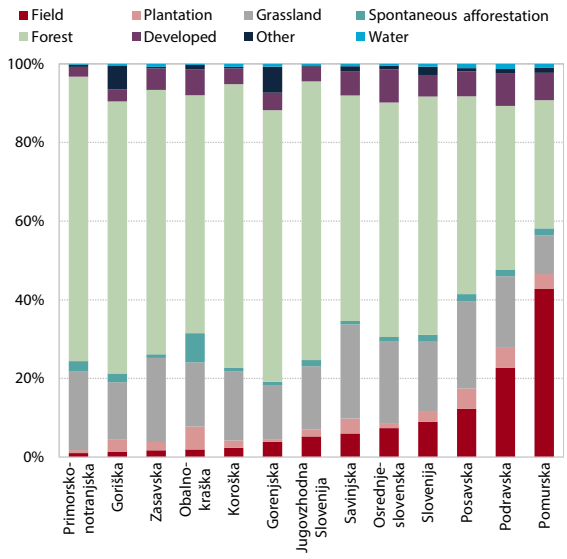
[119] Trobec, T., 2017; Environment Indicators, ARSO, 2017; National Environment Protection Action Programme, 2017.

Figure 30: Number of days with exceeded daily limit of 50 µg PM10/m3



Source: Environment Agency, 2017.

Figure 31: Actual land use by region, 2017



Source: Ministry of Agriculture, Forestry and Food, RABA graphic data for the whole of Slovenia (Repe, Lampič, 2017).

are far fewer measurements.[120] Locally, air quality significantly depends on the location and wind. Aside from greater awareness of the population, the biggest improvements could be achieved by technologically more advanced furnaces and legislative restrictions. Due to the significant impact of air quality on people's health, EU policy in this field is becoming stricter.[121] The second major air quality problem in Slovenia has to do with *ozone and its precursors*, which are mostly generated by road traffic; however, the concentration of ozone is strongly affected by transboundary pollution.[122] In *other pollutants, for example sulphur dioxide*, which were highly problematic in the past, progress has been achieved over a longer period.[123]

Slovenia's territory is unevenly populated, being characterised by high dispersion and a large number of small settlements. There are few large towns: only seven have more than 20,000 inhabitants and they are home to about a quarter of the total population. The degree of urbanisation is around 50% and has not increased in the last decade despite planning being focused on strengthening and expanding urban areas. Consequently, Slovenia is among the least urbanised EU countries. Rather than in cities, the population is concentrated in smaller settlements in larger urban zones along the motorway network. This causes fragmentation of space, interrupts green corridors between settlements and hampers the organisation of public transportation due to lower density of housing.[124] In the immediate vicinity of transport infrastructure, the population are exposed to excessive noise. Greater settlement density in functional urban areas of larger population centres increases the demand for the expansion of developed areas due to the construction of housing, and production facilities, services facilities and public economic infrastructure.

In the period of rapid economic development pressure on space escalated and during the crisis degraded areas were created at a faster pace. During the growth years, individual economic activities encroached on agricultural land and farmland, but after 2010 the impact of the crisis on space started to become apparent as well. Some initiated investments were never finished because they had not been well planned, which was often related to the easily accessible European as well as national funds. Moreover, the economic crisis caused or accelerated company closures, creating underutilised or abandoned sites with visible impact of prior use, i.e. functionally derelict areas (FDAs)[125] (see Indicator 4.14). The unsustainable use of space could be reduced with greater utilisation of built-up yet abandoned or insufficiently utilised sites.

[120] Excessive concentration of airborne PM_{10} particles is not only an environmental and health issue, it is also a legal issue in that it constitutes a breach of the directive on ambient air quality.

[121] The EU directive on the reduction of national emissions, which is the central element of the comprehensive programme Clean Air for Europe, sets stricter limits for five major pollutants, including PM particles. Slovenia is supposed to reduce $PM_{2.5}$ emissions by 25% by 2020 compared to 2005 and by 70% by 2030 (EU average by 22% and 51% respectively). This will require new investments, but the the savings on labour are supposed to be several times higher due to lower health care and sickness absence costs.

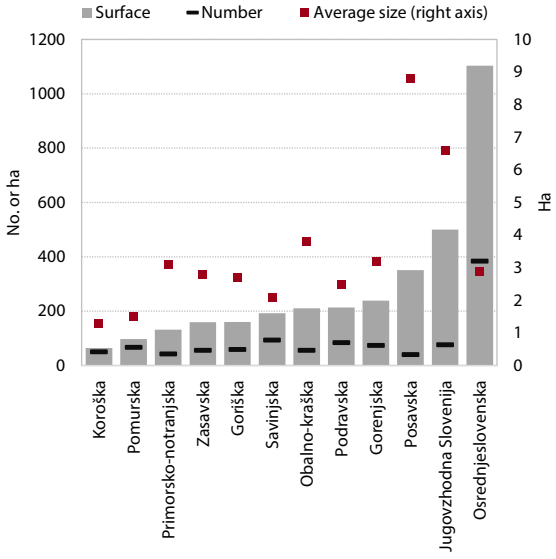
[122] Air Quality in Slovenia in 2016 (ARSO), 2017

[123] Ogrin, 2017.

[124] Environment Report, 2017.

[125] Includes areas over 0.5 ha (0.2 ha in urban settlements). Nine types of functionally derelict areas have been defined: areas of industrial or commercial activities; infrastructures; agricultural activities; defence, protection and rescue services; transitional use; mineral extraction; services activities; tourist and sports activities; and areas for housing.

Figure 32: Functionally derelict areas by region, 2017



Sources: Lampič and Bobovnik, 2017; Lampič, B., Kušar, S., and Zavodnik Lamovšek, A., 2017.