



# 2018

## 02

Territory and  
environment

Neuchâtel 2018

## Environment

Pocket Statistics 2018



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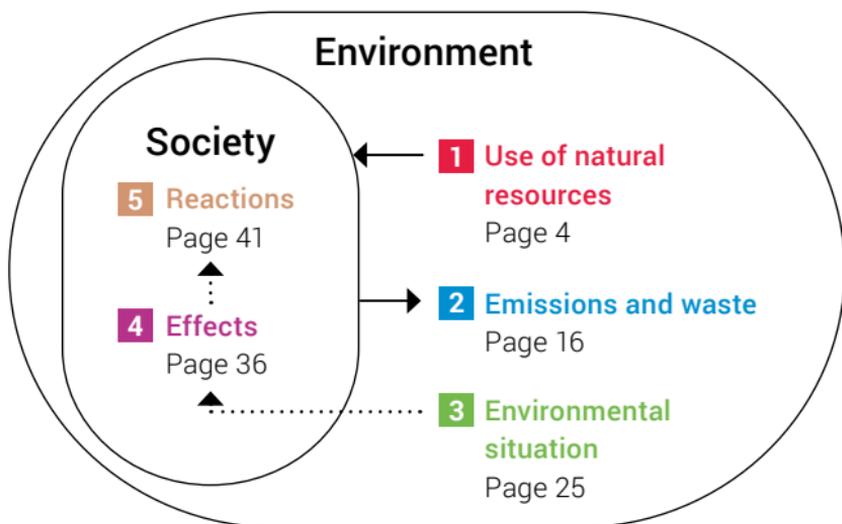
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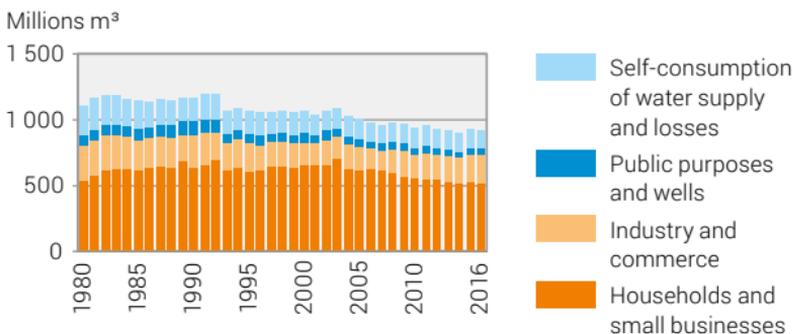


People change the environment by using natural resources and generating waste and other emissions. On the other hand, environmental conditions also have an effect on people and can prompt them to respond to certain circumstances. The present Pocket Statistics highlights such interactions by means of indicators.

## 1 Use of natural resources

On the one hand, ecosystems produce services that are useful to people. On the other hand, human activities require natural resources such as water, soil, energy or material. The way in which resources are used affects the supply available, particularly in the case of non-renewable resources.

### Consumption of drinking water<sup>1</sup>



<sup>1</sup> Corresponds to the quantity from the public water supply (own supply from commerce, industry and agriculture are not included).

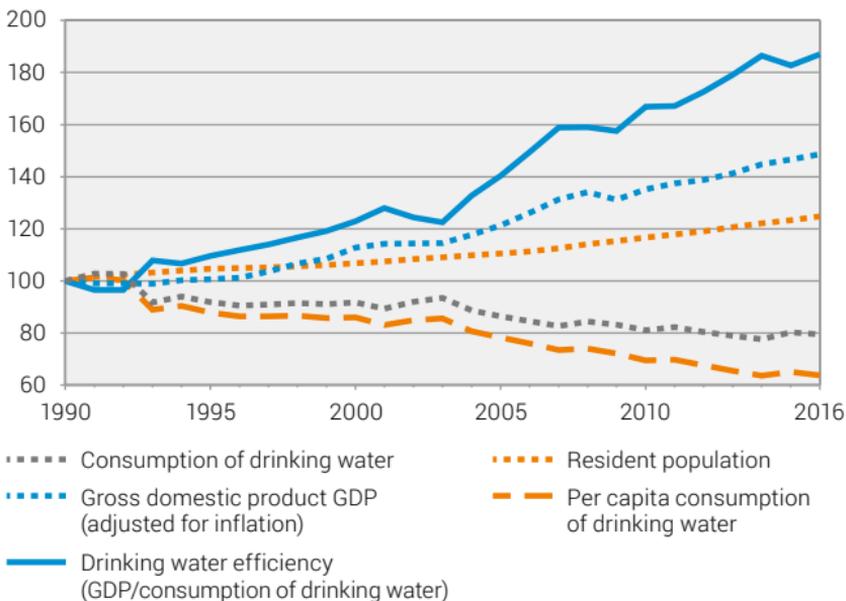
Source: Swiss Association of Gas and Water Suppliers

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Around 80% of drinking water comes from groundwater sources, approximately half of which is spring water. In 2016, 923 million cubic metres of drinking water were produced. The consumption of drinking water in Switzerland has decreased by 21% since 1990.

## Drinking water efficiency

Index 1990=100

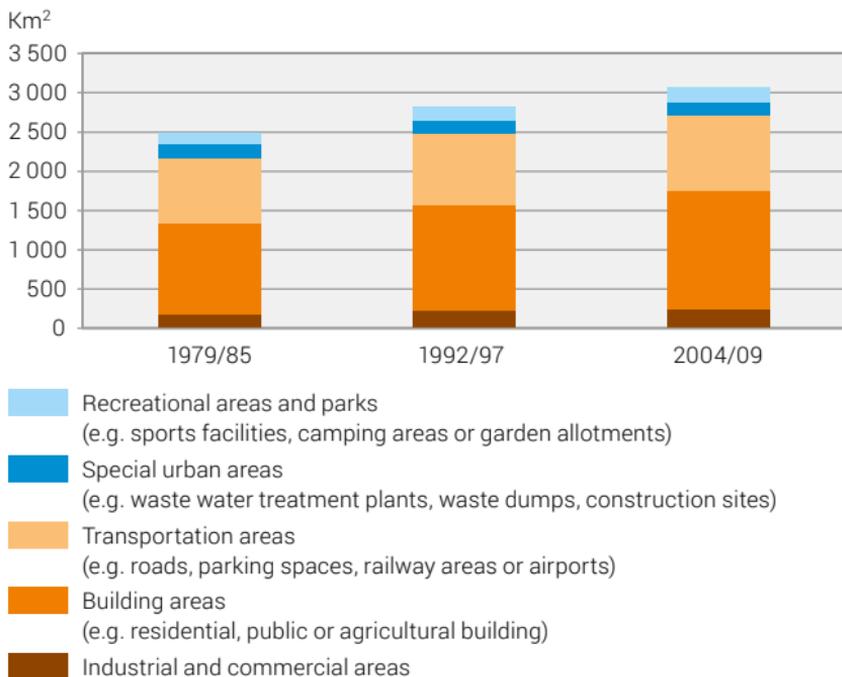


Sources: Swiss Association of Gas and Water Suppliers;  
FSO – SNA, ESPOP/STATPOP

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The consumption of drinking water has become more efficient since 1990 – the needs of a growing economy were able to be covered by the use of less drinking water. The per capita requirement for drinking water has also decreased: in 1990, daily consumption was 472 litres per person, in 2016, this figure was 300 litres. The water that is used abroad to produce imported products is, however, not included in this figure.

## Settlement and urban areas



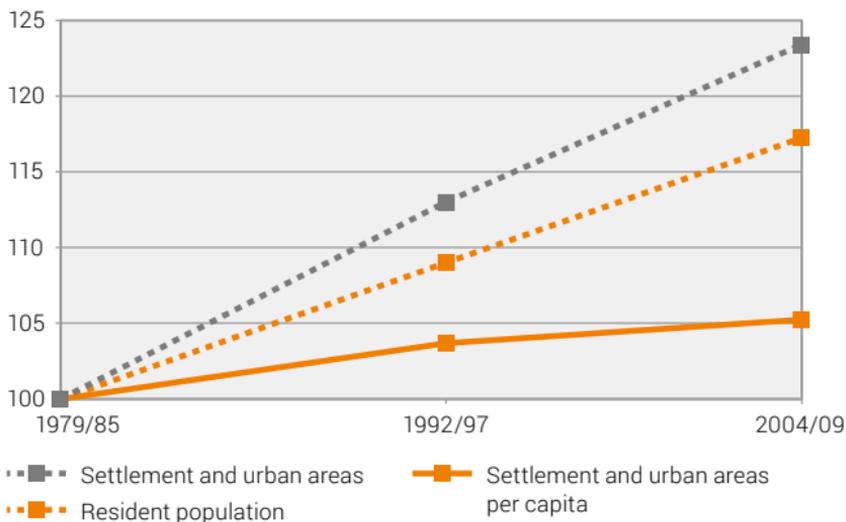
Source: FSO – Land use statistics

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7.5% of Switzerland is covered by settlement and urban areas. Within 24 years, the settlement and urban areas have grown by 23% or 584 km<sup>2</sup>, mainly at the expense of agricultural areas. This is equivalent to an area increase of nearly 0.75 m<sup>2</sup> per second.

## Efficiency of use of settlement areas

Index 1979/85 = 100

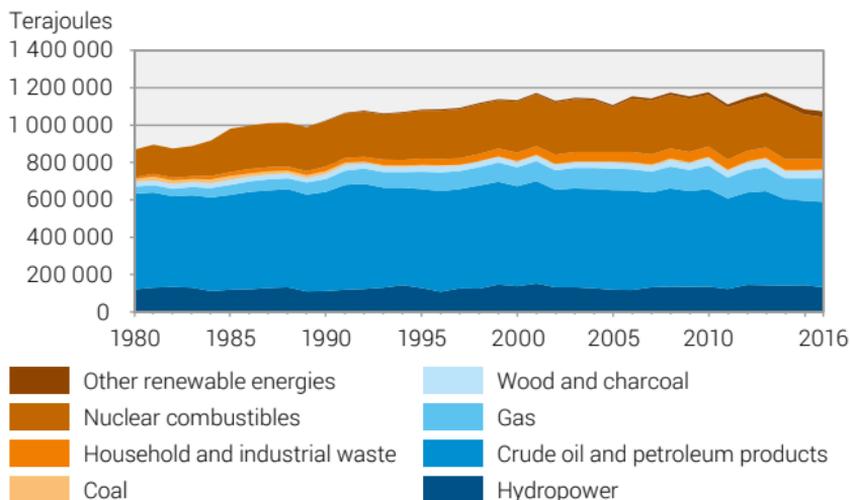


Source: FSO – Land use statistics, ESPOP/STATPOP

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Since the period 1979/85, the settlement and urban areas have grown faster than the population. The settlement and urban area requirement per person has therefore increased: according to the latest figures, this requirement is approximately 407 m<sup>2</sup> per person, which is roughly 20 m<sup>2</sup> more than 24 years ago.

## Energy use<sup>1</sup>



<sup>1</sup> Energy use corresponds to the gross energy consumption minus the import/export balance of electricity which, depending on the year, may be positive or negative and usually accounts for a few percent of the gross consumption. In 2016, more electricity was imported than exported. The energy use was approximately 1.3% lower than the gross consumption. Neither energy use nor gross consumption take into account conversion and distribution losses which can vary greatly depending on the energy carrier. It is assumed, for example, that when producing electricity from hydropower, no losses occur whereas when converting nuclear combustibles, roughly two thirds of the energy escapes in the form of heat that is, however, partly used in district heating.

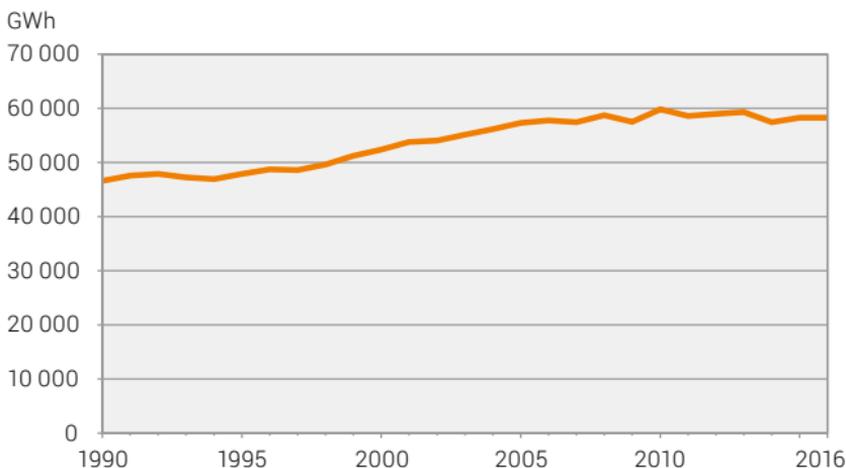
Source: FSOE – Overall energy statistics

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In the short term, energy consumption is dictated by the economic situation and weather conditions. In the long term, however, population and economic trends as well as technological and lifestyle changes are also important influencing factors. In 2016, 76% of the energy used in Switzerland came from abroad. Gross energy consumption stood at approximately 1.09 million terajoules.

## Electricity consumption

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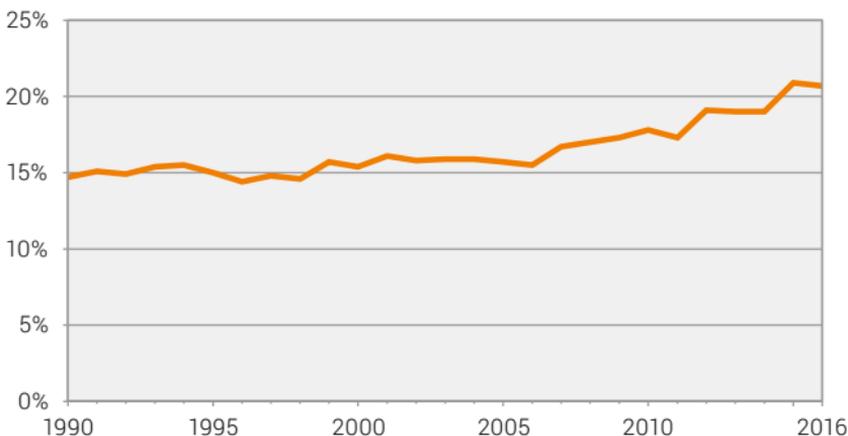
Source: FSOE – Overall energy statistics

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Between 1990 and 2016, electricity consumption in Switzerland increased by 25%, although since the mid-2000s this has been seen to stabilise. In 2016, around 58 000 gigawatt hours of electricity were consumed, corresponding to approximately 6 900 kilowatt hours per person. 59% of electricity was produced by hydropower and 33% from nuclear energy. The remainder came from conventional thermal power plants (5%) and various renewable sources (3.2%), such as biogas, as well as solar and wind energy.

## Renewable energies

Share of renewable energies in gross energy consumption



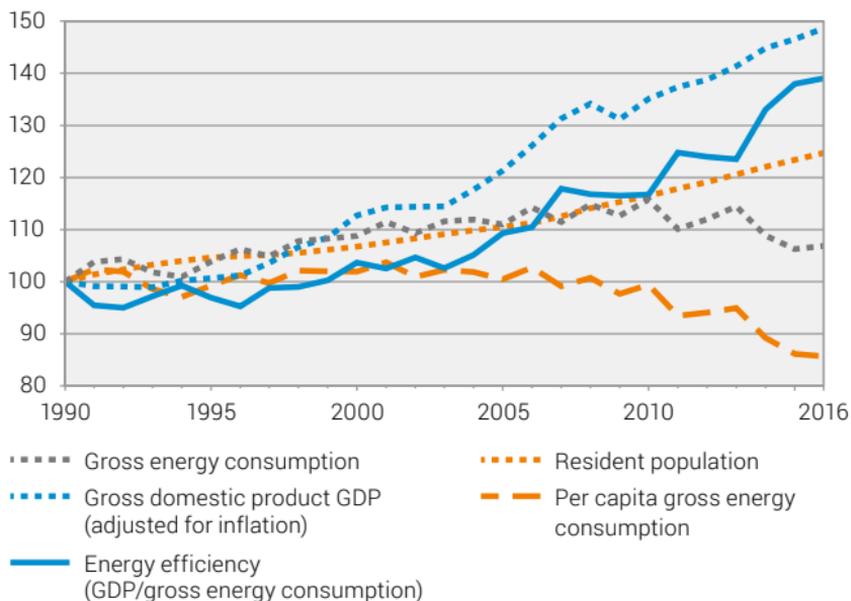
Source: FSOE – Renewable energy statistics

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In 2016, 20.7% of gross energy consumption came from renewable sources. 58% of renewable energies were obtained from hydropower, followed by wood with 19% and energy generation from renewable waste with 12%. Ambient heat (7%), solar energy (3%), biogas (2%), biofuel (1.6%) and wind energy (0.2%) were involved to a lesser extent in the production of energy. Between 1990 and 2016 the consumption of renewable energies rose by 51%, a greater increase than that seen for total energy consumption which rose by 7% over the same period.

## Energy efficiency

Index 1990 = 100



Sources: FSOE – Overall energy statistics; FSO – SNA, ESPOP/STATPOP

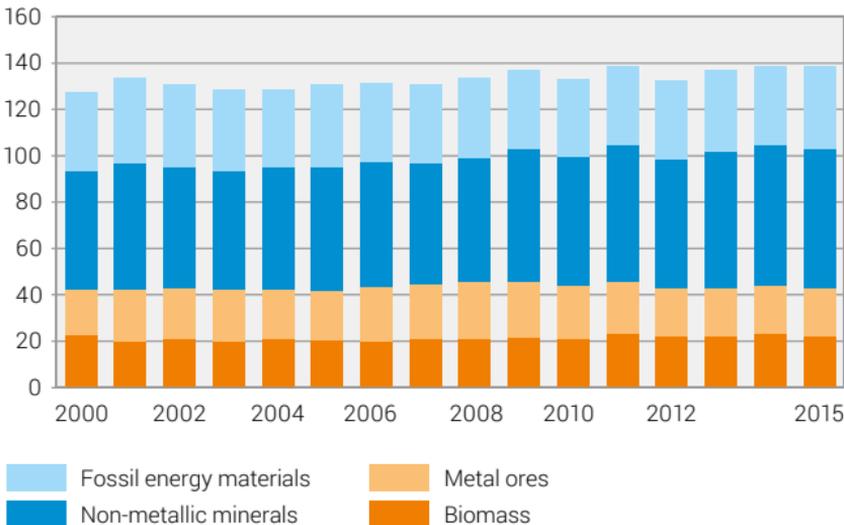
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Since 1990, both the gross domestic product (GDP) and the resident population have grown more considerably than gross energy consumption: In 2016, less energy had to be used to generate one Swiss franc and less energy was used per capita than in 1990. However, this does not include so-called “grey energy”, i. e. the energy that has been used abroad for the production and transport of imported products.

## Material footprint

Raw material consumption (RMC)<sup>1</sup>

Million tonnes



<sup>1</sup> Estimation

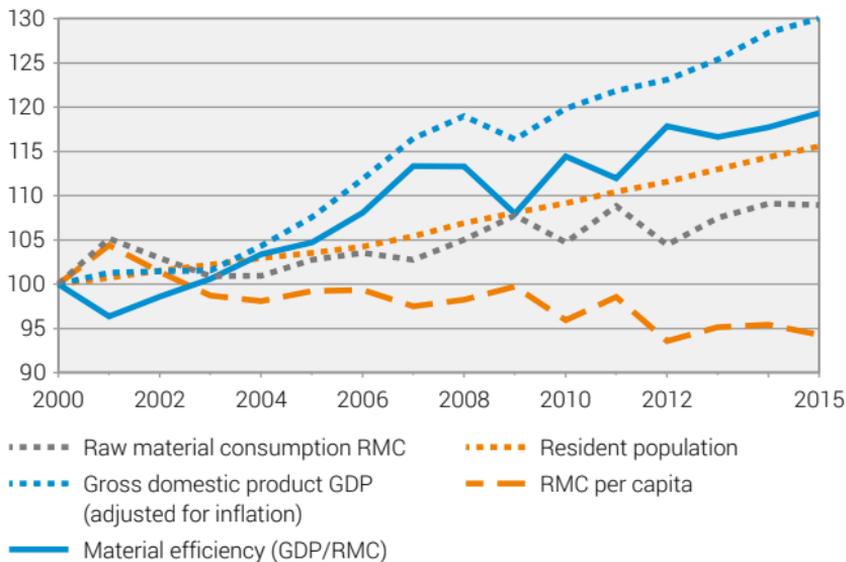
Source: FSO – Environmental accounting

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Since 2000 Switzerland's material footprint – measured by domestic raw material consumption (RMC) – has risen by approximately 9%. This corresponds to the amount of raw materials extracted in Switzerland or abroad to meet Swiss final demand. In 2015, the material footprint was 140 million tonnes. Over this period raw material extracted in Switzerland accounted on average for 46% of the footprint. Expressed in tonnes of raw material, imports increased by 20% between 2000 and 2015.

## Material efficiency

Index 2000 = 100



Source: FSO – Environmental accounting, SNA, ESPOP/STATPOP

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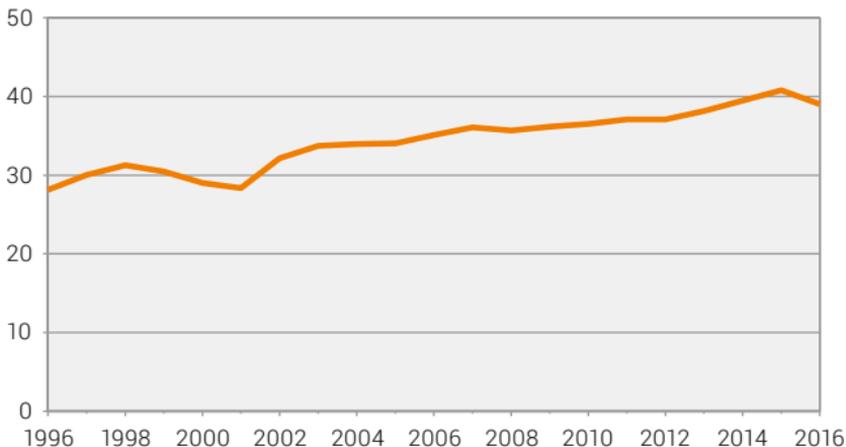
Switzerland's raw material consumption (RMC) or material footprint was around 17 tonnes per capita in 2015 and was therefore lower than the level measured in 2000. However, the gross domestic product (GDP) has increased more than material consumption since 2000: This means that in 2015, a higher value added was attained per material amount used than in 2000.

## Pollination

Farmland for which pollination by animals contributes to production

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Thousand hectares



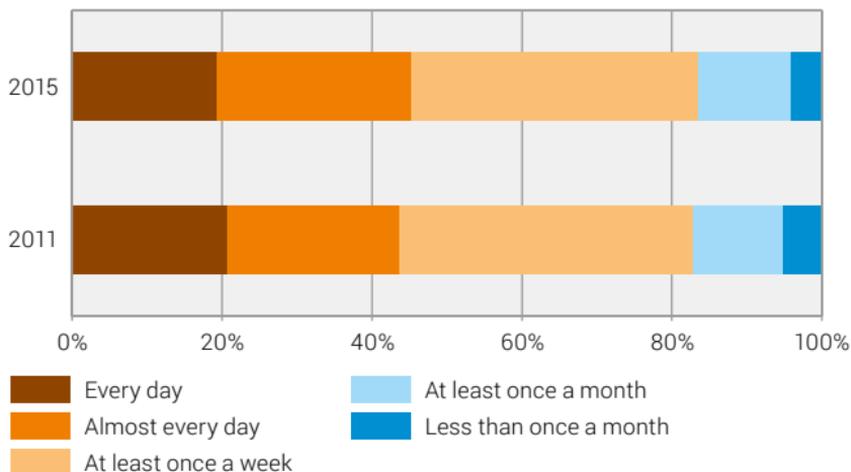
Source: FSO

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In 2016, around 39 000 hectares of cultivated area benefited from pollination by animals, corresponding to 4% of utilised agricultural area and 13% of arable and perennial crop areas. Particularly in the case of fruit or berries, but also rapeseed and sunflowers, production is stimulated by pollinators. The remaining arable land is used mainly for cereal crops whose pollination takes place by the wind.

## Leisure time spent outdoors

Share of population



Source: FSO – Omnibus surveys 2011 & 2015

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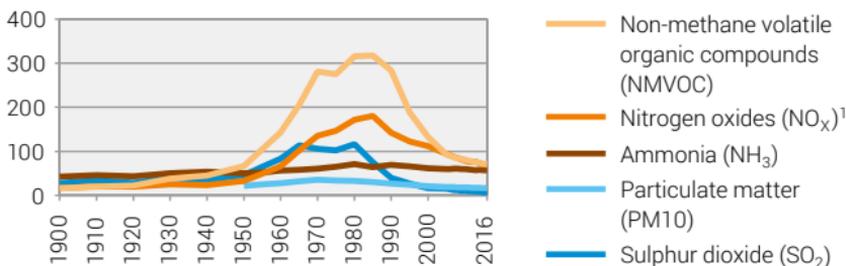
In 2015, 45% of the Swiss population indicated that they spent their leisure time outdoors, every day or almost every day. Another 38% do this at least once a week. Only 4% of the population says they spend their leisure time outdoors less than once per month.

## 2 Emissions and waste

Human activities generate waste and other emissions that enter the air, soil or watercourses. The higher the emissions, the greater the impact on the environment.

### Emissions of air pollutants

Thousand tonnes



<sup>1</sup> NO<sub>x</sub> comprises NO and NO<sub>2</sub>. Emission values are given in NO<sub>2</sub>.

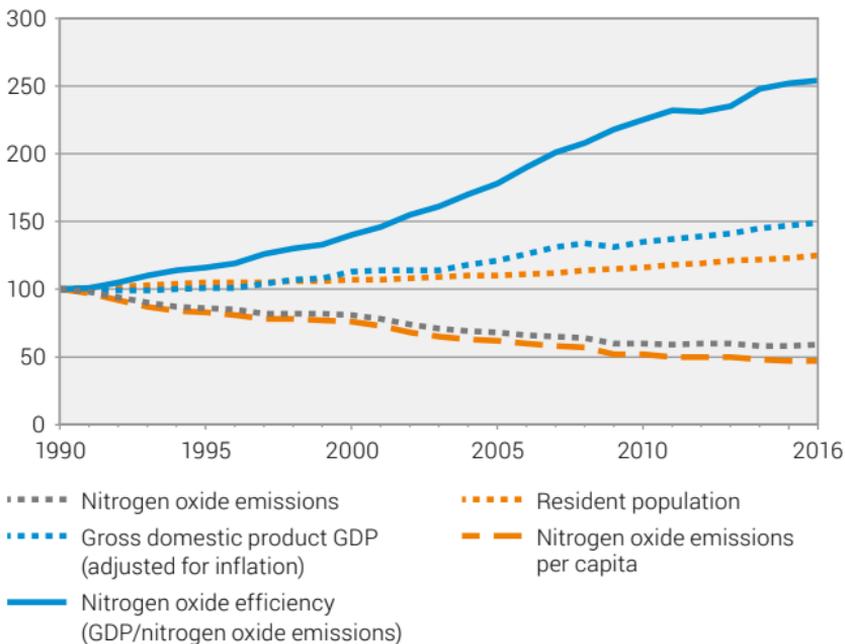
Source: FOEN

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Nitrogen oxides (NO<sub>x</sub>) are released during the combustion of fuels, with motorised transport being the main source. NO<sub>x</sub> and volatile organic compounds (NMVOC) are precursors for the formation of ozone (O<sub>3</sub>) and particulate matter. NO<sub>x</sub> together with ammonia (NH<sub>3</sub>) lead to the acidification and the over-fertilisation of natural ecosystems such as fens and forests. Emissions of most air pollutants in Switzerland have decreased since the 1990s.

## Nitrogen oxide efficiency

Index 1990 = 100



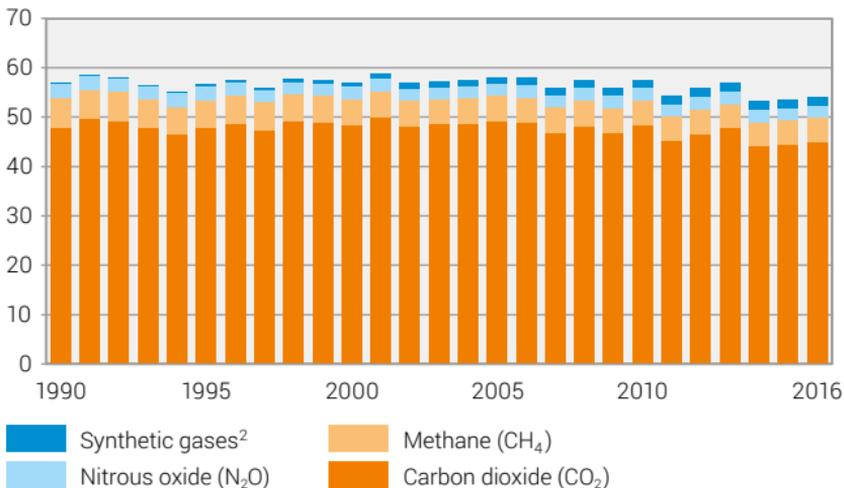
Sources: FOEN; FSO – SNA, ESPOP/STATPOP

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Since 1990, the gross domestic product (GDP) has grown more considerably than nitrogen oxide (NO<sub>x</sub>) emissions, so that nitrogen oxide efficiency has increased. This means that in 2016, less NO<sub>x</sub> was emitted per Swiss franc generated than in previous years. The resident population also increased more considerably than nitrogen oxide emissions between 1990 and 2016. Subsequently, less NO<sub>x</sub> is released per capita today than several years ago.

## Greenhouse gas emissions<sup>1</sup>

Million tonnes CO<sub>2</sub> equivalents



<sup>1</sup> According to the FSO air emission accounts which are largely based on the FOEN greenhouse gas inventory. The former are consistent with the National Accounts and for this reason discrepancies occur with respect to the latter.

<sup>2</sup> HFC, PFC, SF<sub>6</sub>, NF<sub>3</sub>

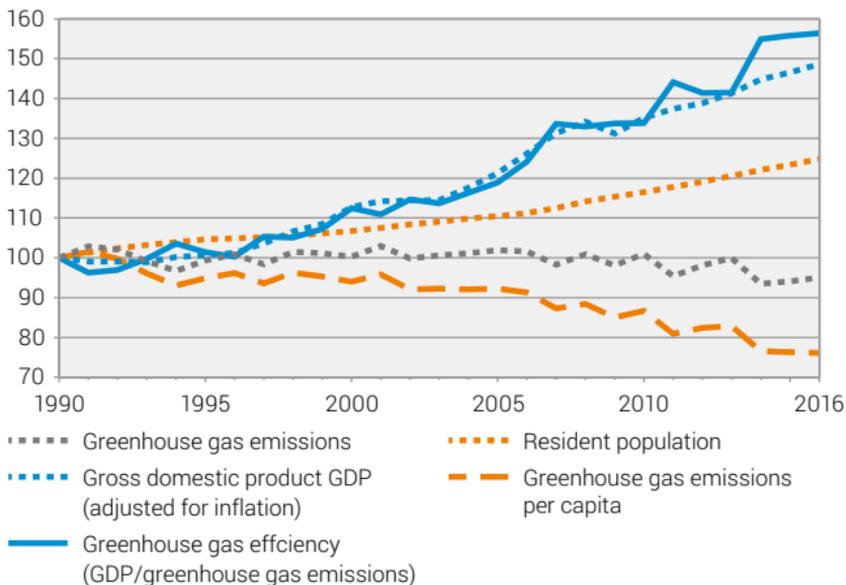
Source: FSO – Environmental accounting

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Due to greenhouse gas emissions, humans intensify the natural greenhouse effect and influence the climate in this way. The majority of these greenhouse gas emissions come from the burning of fossil energy carriers. In 2016, Switzerland emitted around 54 million CO<sub>2</sub>-equivalent tonnes (incl. international aviation). This corresponds to less than half of Switzerland's carbon footprint that also includes emissions generated abroad by Swiss imports.

## Greenhouse gas efficiency

Index 1990 = 100



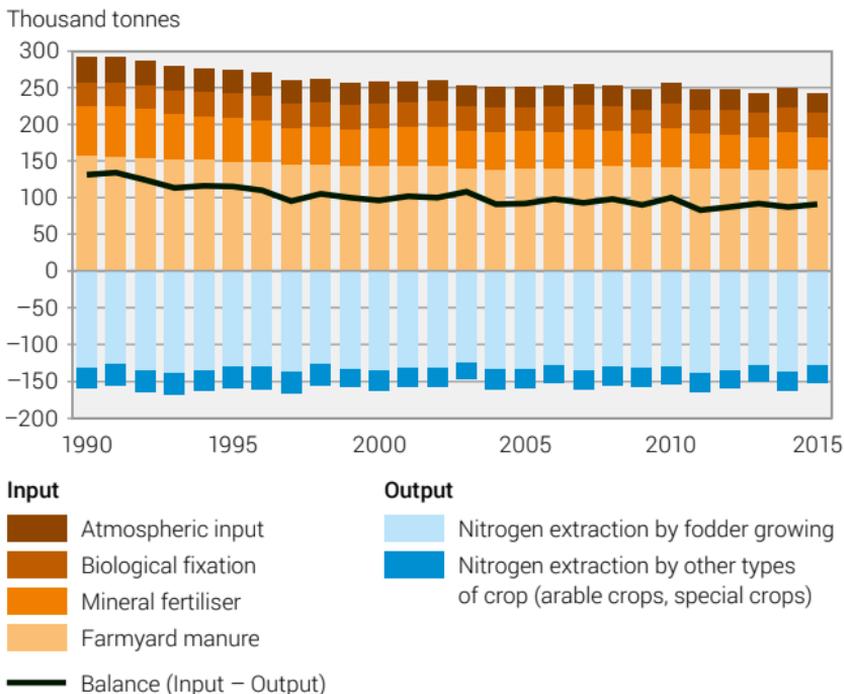
Source: FSO – Environmental accounting, SNA, ESPOP/STATPOP

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Since 1990, the gross domestic product (GDP) has grown more considerably than greenhouse gas emissions, meaning that greenhouse gas efficiency has increased. The resident population has also increased at a faster pace than greenhouse gas emissions, with emissions per person having decreased. In 2016 they amounted to 6.4 tonnes of CO<sub>2</sub> equivalents. If the greenhouse gas emissions caused abroad by the manufacturing and transportation of Swiss imports are also considered, the amount would be approximately 14 tonnes of CO<sub>2</sub>-equivalents per person.

## Nitrogen balance of agricultural areas

Amounts of nitrogen entering agricultural soils or extracted from them



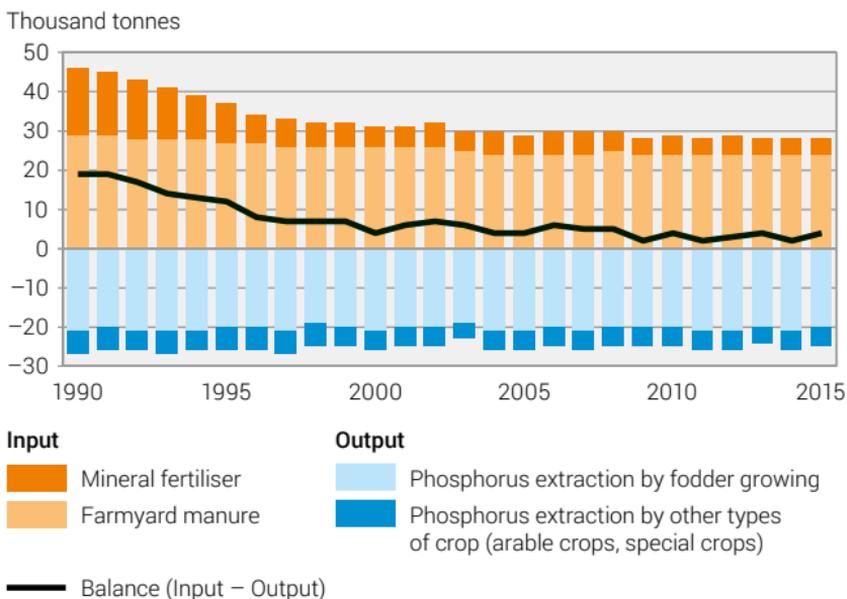
Source: FSO – Environmental accounting

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Nitrogen (N) is used as a fertiliser in agriculture. From the excess amount, a part is released into the air as ammonia ( $\text{NH}_3$ ) and another part is leached as nitrate ( $\text{NO}_3$ ) into groundwater. In the last ten years, the nitrogen surplus has been around 90 000 tonnes per year on average.

## Phosphorus balance of agricultural areas

Amounts of phosphorus entering agricultural soils or extracted from them



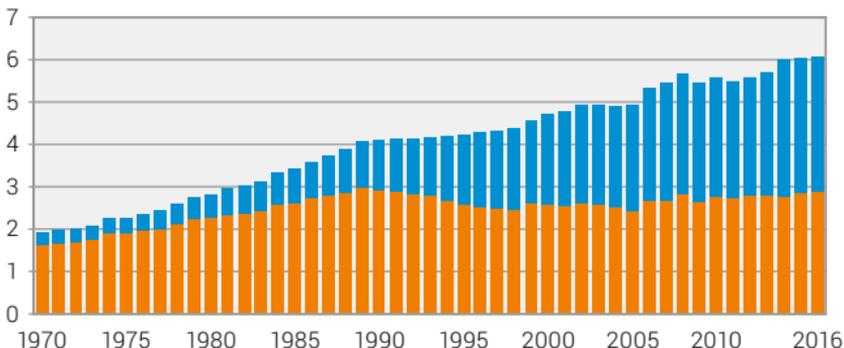
Source: FSO – Environmental accounting

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Phosphorus (P) is one of the main nutrients of plants and is used in agriculture as a fertiliser. Excess phosphorus can enter surface water through soils and stimulate algae and plant growth, particularly in lakes. When this biomass dies off and decomposes, there may be a shortage of oxygen and thus a disruption of the ecological balance. In the last ten years, excess phosphorus has been around 4000 tonnes per year on average.

## Municipal waste

Million tonnes



■ Separately collected municipal waste<sup>1</sup>

■ Municipal waste, incinerated and deposited in landfills<sup>2</sup>

<sup>1</sup> Total comprising compost, paper and cardboard, glass, tin, aluminium, PET, textiles, batteries (since 1993), electrical and electronic devices (since 2001)

<sup>2</sup> The figures from 2004 include only domestic waste without imports.

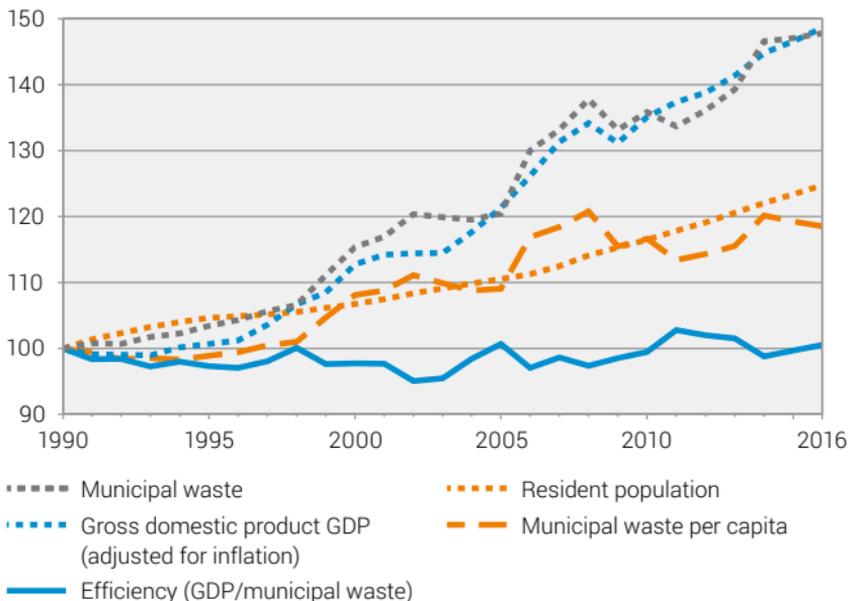
Source: FOEN

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In 2016, roughly 6 million tonnes of municipal waste was generated in Switzerland. Around 52% of this was separately collected and recycled. In 1990, the corresponding share was 29%. The remainder was burnt in waste incineration plants or (before 2005) burnt or land-filled. The heat generated by incineration is used for district heating or the production of electricity.

## Efficiency in municipal waste

Index 1990=100



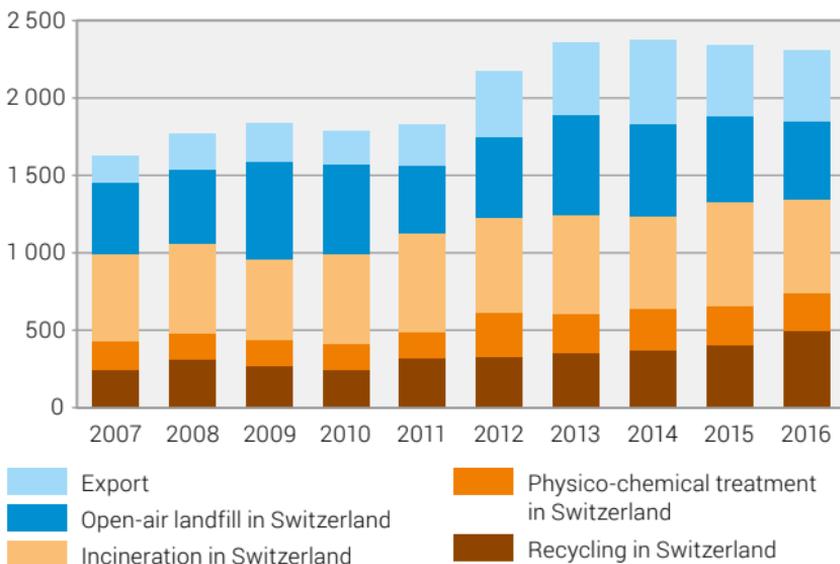
Sources: FOEN; FSO – SNA, ESPOP/STATPOP

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The increase in municipal waste since 1990 is roughly in line with the gross domestic product GDP: in 2016, roughly the same amount of waste per Swiss franc generated was caused as in 1990. However, municipal waste has increased more considerably than the resident population: in 2016, municipal waste per capita was 720 kg, around 112 kg more than in 1990. This does not, however, include waste that is generated abroad during the manufacture of imported goods.

## Hazardous waste

Thousand tonnes



Source: FOEN

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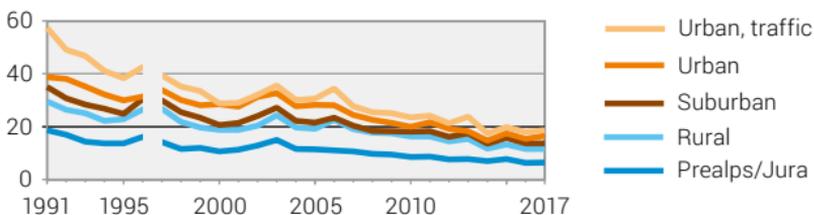
Hazardous waste requires special technical and organisational measures for disposal due to its composition and characteristics. Of the approximately 2.3 million tonnes of hazardous waste generated in Switzerland in 2016, 80% was recycled, treated, burned or landfilled, 20% was exported. The increase in recent years is mainly due to contaminated matter excavated during the clean-up of brownfield sites.

### 3 Environmental situation

The environmental situation is influenced by human activities among other things. In addition to the quality of air, water-courses, soils, ecosystems or landscapes, the supply of these resources is also of interest.

#### Concentration of particulate matter (PM10)

Annual mean in micrograms per cubic metre



Data prior to 1997 was collected by a different method.

Threshold limit (annual mean): 20 micrograms per cubic metre

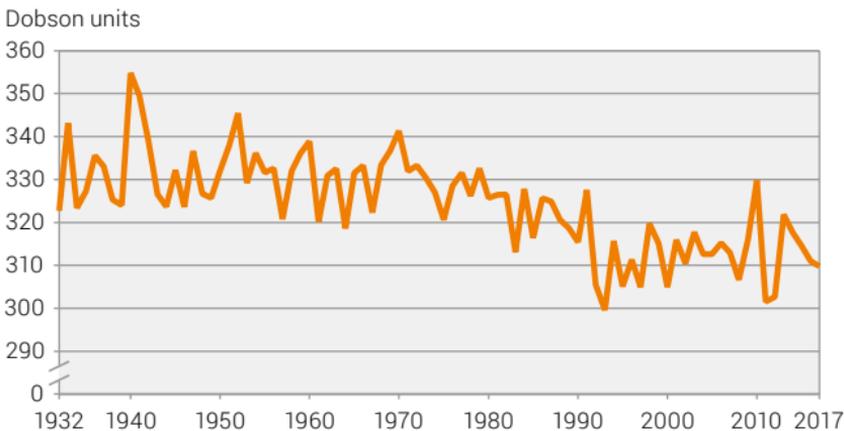
Source: FOEN – NABEL

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Pollution from particulate matter (PM10) has declined in recent years although the daily and yearly thresholds are still partly exceeded, in particular in cities and along heavily used roads. Particulate matter comes from combustion processes, mechanically due to abrasion and resuspension or is formed from precursors. Particulate matter can cause diseases of the respiratory tract and of the cardiovascular system and may also lead to an increase in the risk of cancer.

## Ozone layer

Total amount of ozone measured in the air column above Arosa  
(annual average values)



Source: MeteoSwiss

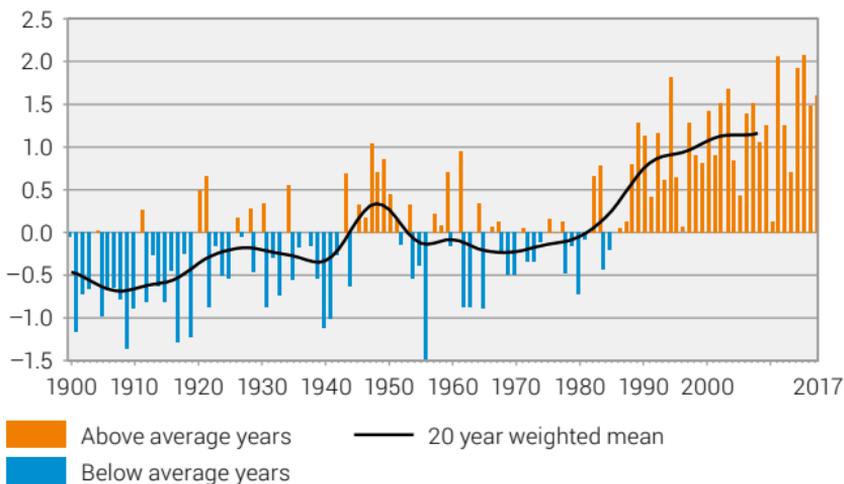
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The stratospheric ozone layer is found at an altitude from 20 to 40 km and protects the earth from UVB rays which can lead to skin damage and even skin cancer among humans. Various substances contribute to the depletion of the ozone layer. The implementation of the Montreal Protocol signed in 1987 for the protection of the ozone layer has been able to reduce the use of such substances. The overall concentration of substances which deplete the ozone layer in the stratosphere has decreased since 1997.

## Mean annual temperature

Deviation from the long-term mean (1961 to 1990)

Degrees Celsius



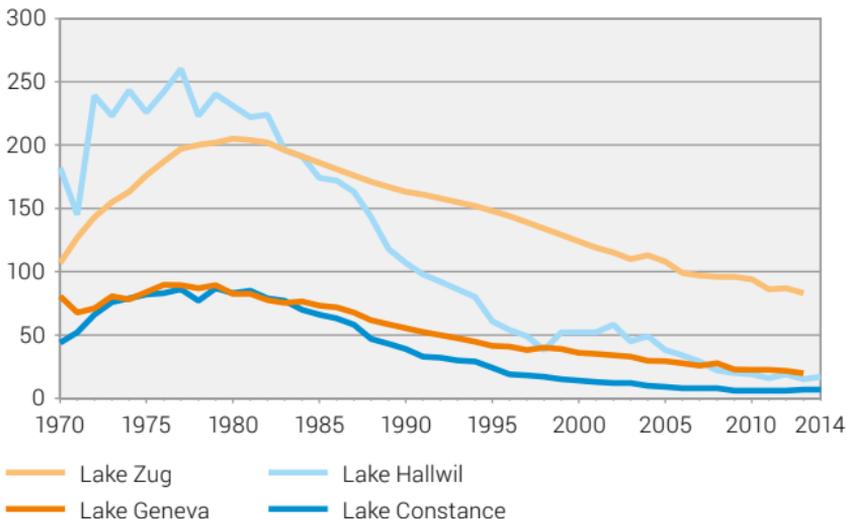
Source: MeteoSwiss

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The air temperature varies from year to year and is characterised by colder and warmer periods. Since the start of the 1990s, above average annual temperatures have been recorded in Switzerland: 9 out of 10 of the warmest years since the start of the recording of temperatures were registered in the 21st century and 2015 was the warmest year yet.

## Phosphorus levels in selected lakes

Yearly average in micrograms per litre



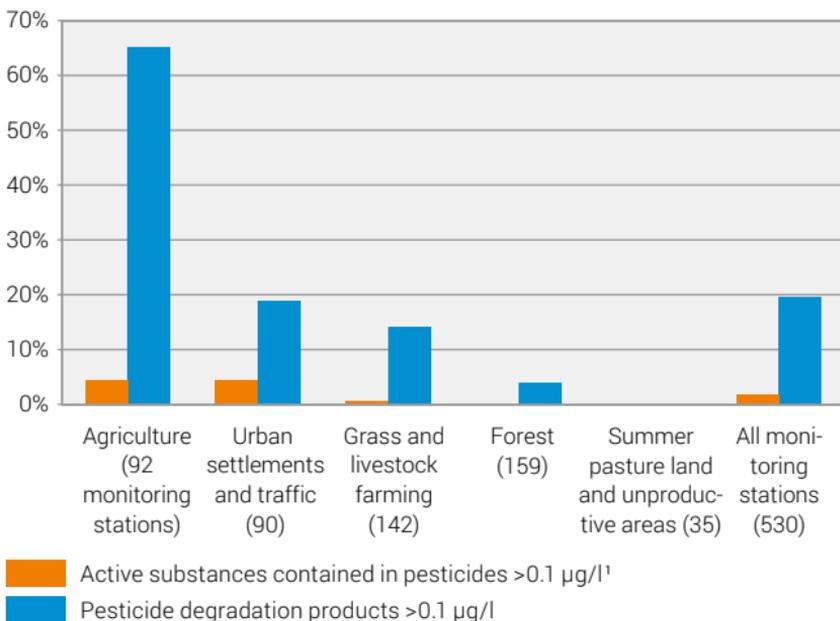
Source: FOEN – NAWA

© FSO 2018

In particular, phosphorus (P) is used as a fertiliser whereby the excess accumulates in the soil. If the latter is subject to leaching, run-off or soil erosion, phosphorus is discharged into surface waters which can stimulate algae and plant growth, particularly in lakes. In the decomposition of this biomass, there may be a lack of oxygen, presenting a threat to fish and other creatures. In Switzerland, high concentrations of phosphorus are found notably in watercourses in catchment areas with intensive animal production.

## Pesticide residues in groundwater, 2014

Share of measuring stations with excessively high concentrations, by main land use



<sup>1</sup> Value required by the Water Protection Ordinance (WPO)

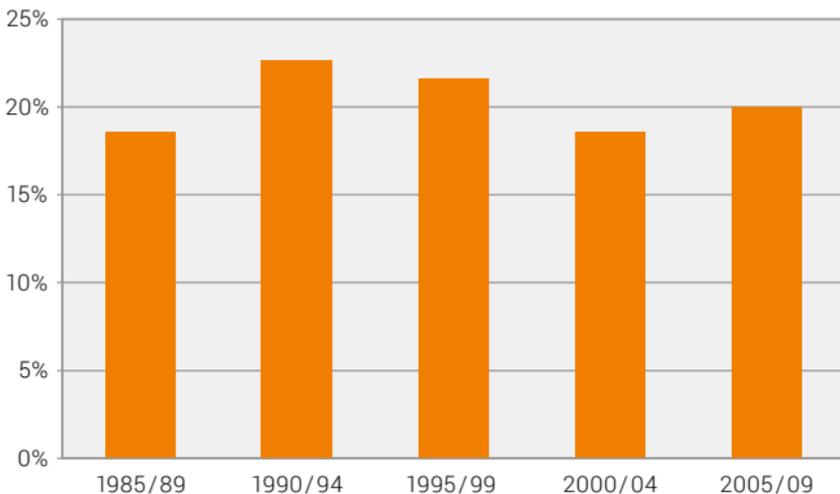
Source: FOEN – NAQUA

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In 2014 active substances contained in pesticides exceeded the threshold of the Waters Protection Ordinance of 0.1 micrograms per litre at 2% of groundwater measuring stations. Pesticide degradation products were even found in 20% of measuring stations in these concentrations. Pesticide residues were found in particularly elevated concentrations under agricultural land.

## Heavy metal soil pollution

Percentage of 97 monitoring stations with at least one measurement above benchmark limits for lead, copper, cadmium or zinc



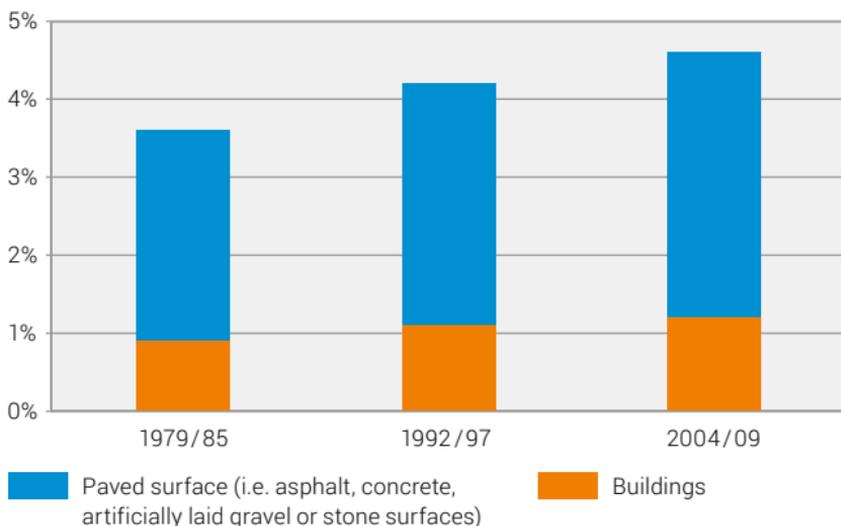
Source: FOEN/FOAG – NABO

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Pollutants, such as heavy metals and organic compounds which are difficult to break down, accumulate in the soil where they may obstruct important functions of the soil and enter the food chain through plants. During the survey period 2005 to 2009, the benchmark values were exceeded for at least one heavy metal in 20% of the soil samples tested.

## Soil sealing

Proportion of sealed areas as a percentage of total area



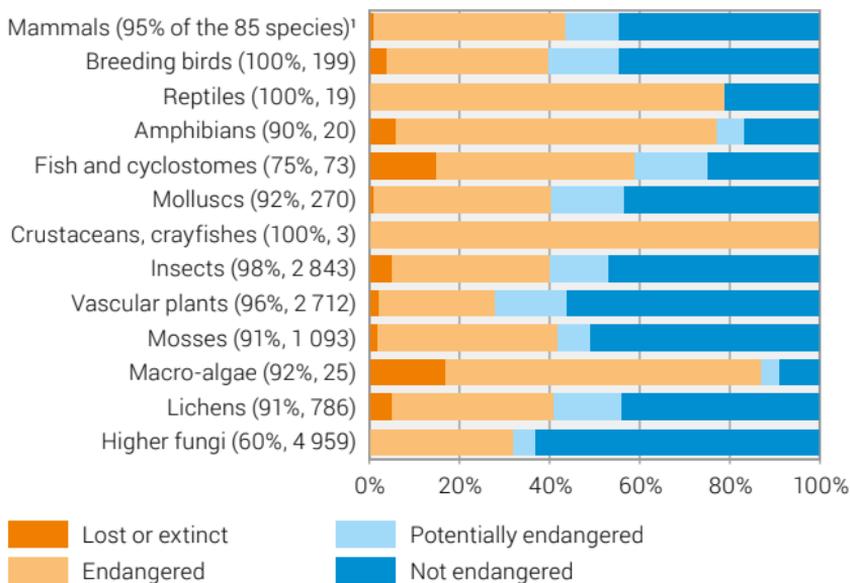
Source: FSO – Land use statistics

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Buildings and roads in particular are considered as sealed soils. Due to the soil sealing, the soil loses its natural ecological function as a habitat, reservoir and filter as well as the ability to transform and degrade substances. In the space of 24 years, sealed soils have increased by 29% in Switzerland. According to latest figures, 4.7% of Switzerland's surface area is sealed.

## Endangered animals and plants (Red lists)

Status 1994 to 2018, depending on the species group



<sup>1</sup> Reading aid: The endangerment status was assessed for 95% of the 85 mammal species. Data are deficient for the remaining species.

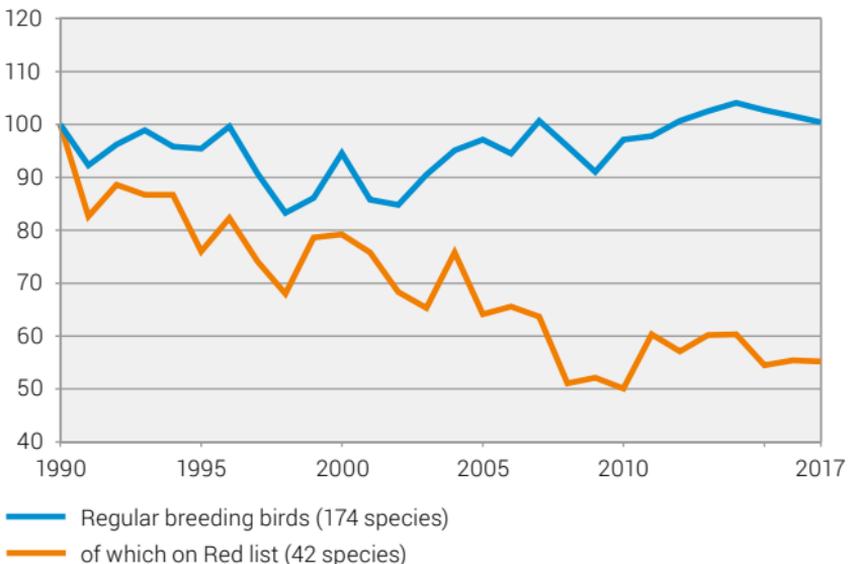
Source: FOEN

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There are around 46 000 known species of flora, fauna and fungi in Switzerland (excluding unicellular or oligocellular organisms). Of the 10 711 evaluated species, 35% are on the red list, i.e. they are considered endangered, missing or extinct. At least 49 of the endangered animal and plant species in Switzerland are classified as endangered worldwide.

## Populations of breeding birds – Swiss Bird Index®

Index 1990=100



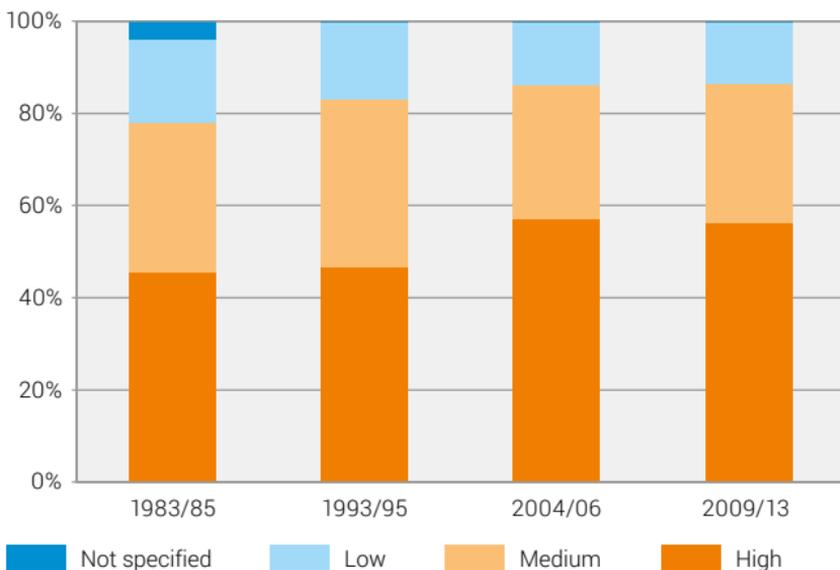
Source: Swiss Ornithological Institute Sempach

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The populations of bird species that regularly breed in Switzerland (177 species, 174 of which can be evaluated) were roughly the same in 2017 compared with 1990. However, the population of the 42 endangered species on the red list decreased over the same period.

## Ecological quality of the forest

Part of the forest area with low, medium or high biotope value



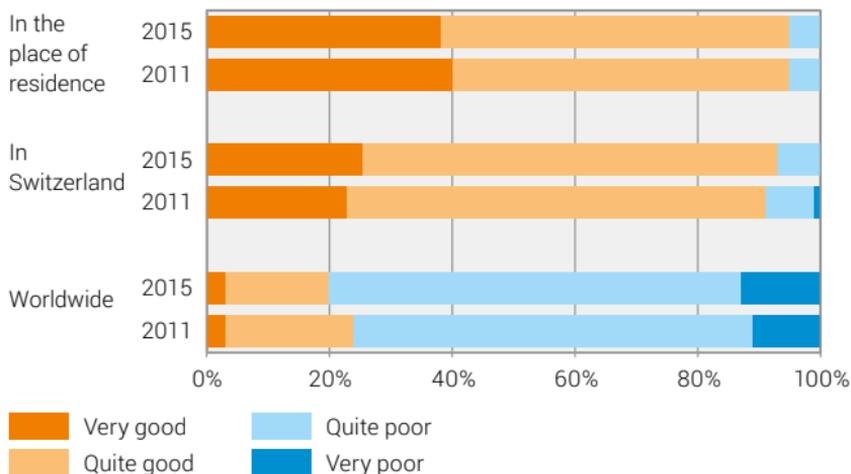
Source: WSL – NFI

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Around a third of Switzerland's surface area is currently covered by forest. Since the survey period 1983/85, the forest area has grown by around 10%. During the same period, the ecological quality of forests has improved: in 87% of forest areas, the biotope value today is rated medium to high. A forest's biotope value is used to evaluate forest populations as a habitat for animals and plants. The diversity of tree species and the structural diversity, for example, are taken into consideration.

## Assessment of the environmental quality by the resident population of Switzerland

Share of population



Source: FSO – Omnibus surveys 2011 & 2015

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In 2015, 95% of the population assessed the quality of the environment in their place of residence as very or quite good. Regarding the quality of the environment in Switzerland overall, 92% of the population had this opinion. These assessments are roughly the same as those from 2011. However, the quality of the environment worldwide was assessed less positively than it had been four years previously. Whereas 23% of the population then said it was very good or quite good, in 2015 only 20% said so.

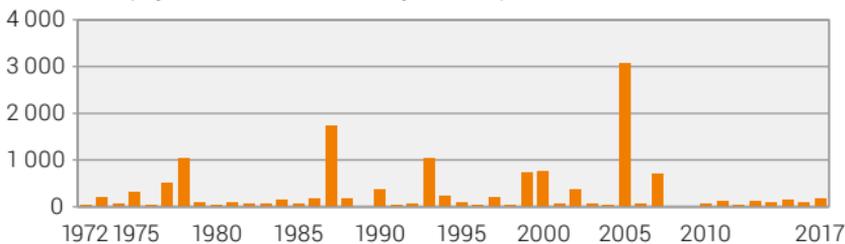
## 4 Effects on society

Environmental conditions can affect the quality of life and the health of the population and may also cause damage to infrastructure and buildings or generate other economic costs.

### Damage caused by natural events

Floods, debris flows, landslides and rockfall<sup>1</sup>

CHF million (adjusted for inflation, base year 2017)



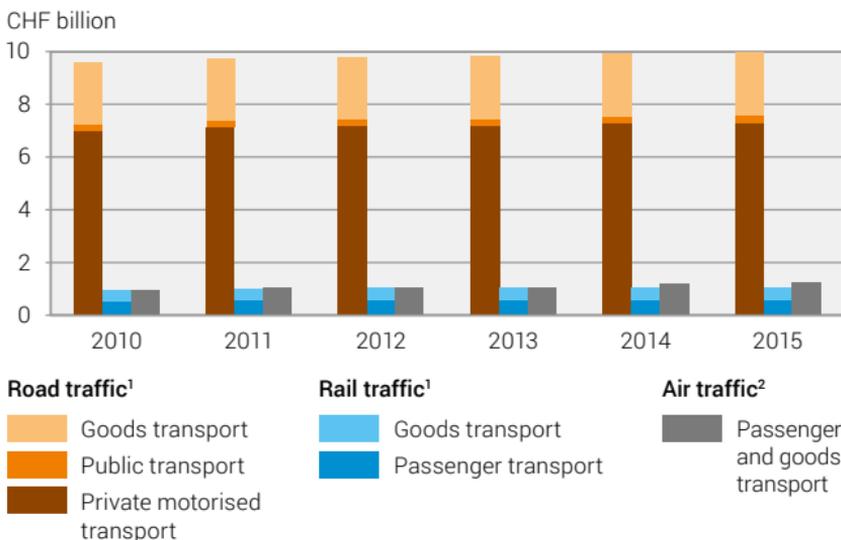
<sup>1</sup> Rockfall taken into account since 2002

Source: WSL

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Humanity has always been confronted with natural hazards. However, due to the extension of settlement areas in regions at risk and rising property values, the potential damage from natural hazards is also increasing. Flooding, mudflows, landslides or rockfall are influenced, among other factors, by the climatic conditions.

## External costs of road, rail and air traffic



<sup>1</sup> Territoriality principle: traffic within Swiss borders

<sup>2</sup> Half distance principle: Air traffic within Swiss borders and half distances from Switzerland to destinations abroad and vice versa

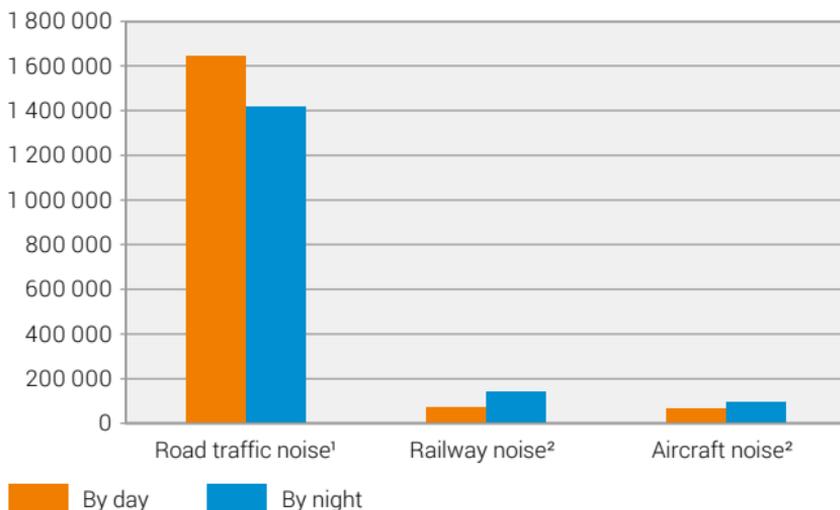
Sources: FSO; ARE

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External costs are not borne by those responsible but by third parties (often by the general public). In transport, these types of costs are usually incurred in the environmental and health sectors. However, they are also found in costs relating to the damage or depreciation of buildings due to traffic. In 2015, the estimated external costs incurred in Switzerland were CHF 9.95 billion due to road traffic, CHF 1.05 billion due to rail traffic and CHF 1.23 billion due to air traffic.

## Persons affected by noise

Number of persons exposed to noise immissions over the legal limit



<sup>1</sup> Status 2010

<sup>2</sup> Status 2006

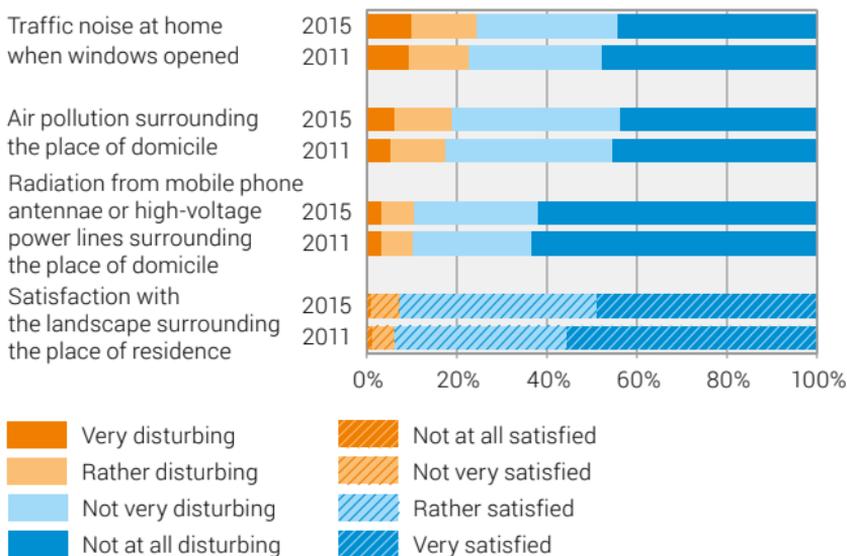
Source: FOEN

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Noise is an annoying sound which in addition to its impact on health also has an economic and social dimension (e. g. depreciation of property, social segregation). The main source of noise pollution is road traffic. In 2010, about every fifth person (21% of the Swiss population) was exposed at their place of residence to traffic noise that exceeded the legal limit set by the Noise Abatement Ordinance.

## Perception of environmental conditions in the place of residence

Share of population



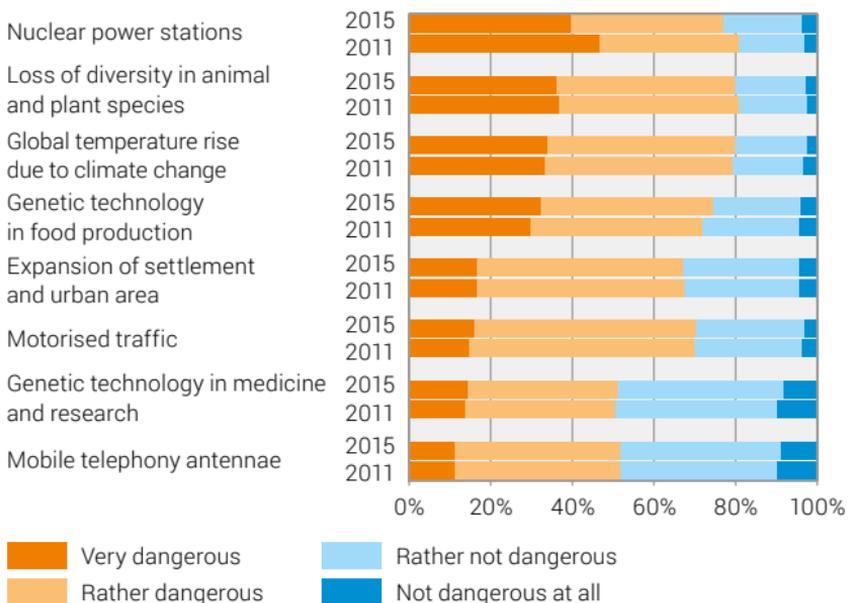
Source: FSO – Omnibus surveys 2011 & 2015

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In 2015, 24% of the population said they were very or rather disturbed by traffic noise at home with the window open, 19% by air pollution surrounding the house and 10% by radiation from high-voltage power lines or mobile phone antennae. 93% of the population were very or rather satisfied with the landscape surrounding their place of residence. However, the percentage of people who were very satisfied with the landscape in the residential environment fell between 2011 and 2015 from 56% to 49%.

## Assessment of the danger for humans and the environment

Share of population



Source: FSO – Omnibus surveys 2011 & 2015

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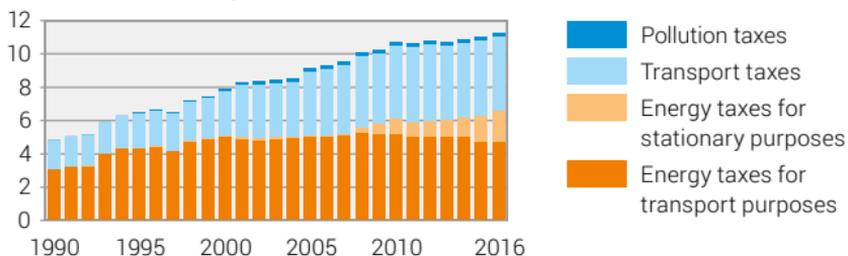
Nuclear power stations are seen as the greatest danger for people and the environment. In 2015, 40% of the population said that they were very dangerous. In 2011, 47% were of this opinion. However, it should be noted that the nuclear reactor accident in Fukushima took place one and a half months before the 2011 survey began. With 36%, the loss of diversity in animal and plant species was considered to be the second greatest danger for people and the environment, followed by rising global temperatures due to climate change (34%).

## 5 Reactions from society

Society can respond to modified environmental conditions, for example, by taking protective measures, creating incentives to reduce pollution or changing behaviour.

### Environmentally related taxes revenue

CHF billion, at current prices



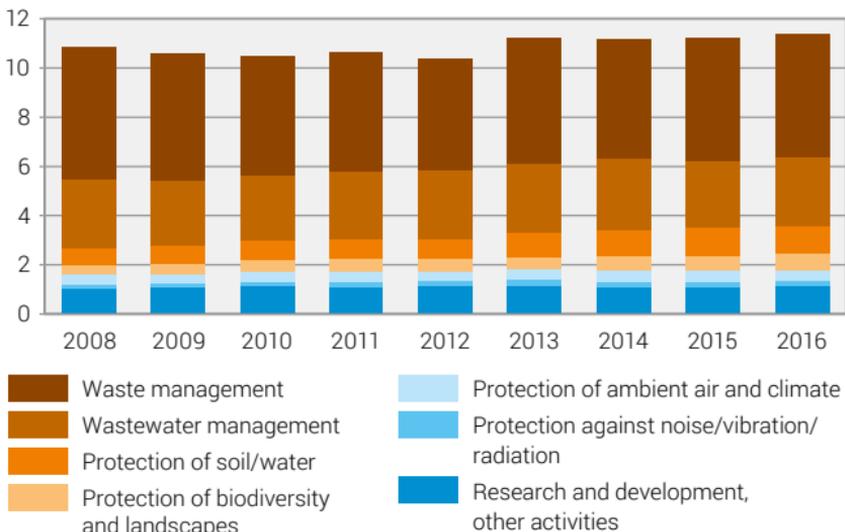
Source: FSO – Environmental accounting

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Taxes are considered as environmental if the taxed object demonstrably has negative effects on the environment, such as motor fuels, for example. The purpose for the introduction of the tax is irrelevant. In 2016, revenue from environmental taxes amounted to CHF 11.3 billion, corresponding to 1.7% of the gross domestic product (GDP) and 6.2% of the total revenue from taxes and social contributions.

## National expenditure on environmental protection

CHF billion, at current prices



2016: provisional

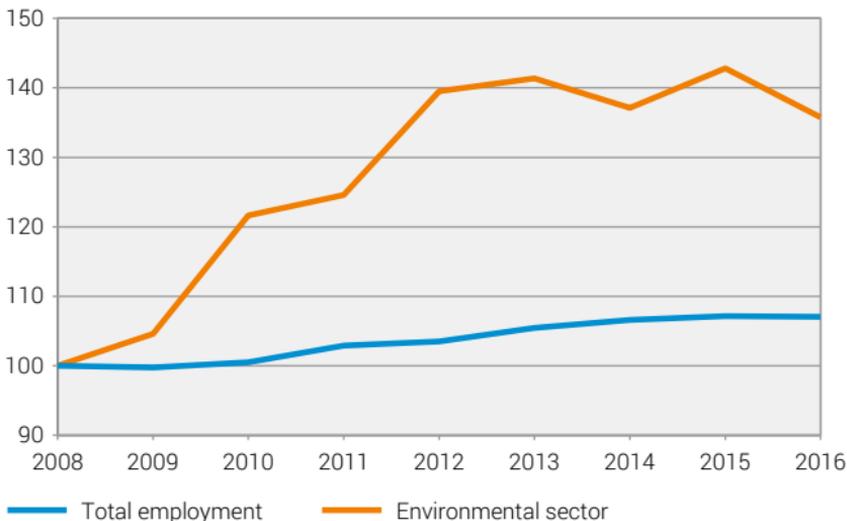
Source: FSO – Environmental accounting

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In 2016, environmental protection expenditure amounted to CHF 11.4 billion, corresponding to an increase of 5% since 2008 (at current prices). Between 2008 and 2016, its share of the GDP fell from 1.8% to 1.7%. Environmental protection expenditure corresponds to the financial outlay of households, businesses and public administrations for the prevention, reduction and elimination of pollution or other damage to the environment, with the majority of this being used for wastewater and waste management.

## Employees of the environmental sector compared to total employment

Index 2008=100



2016: provisional

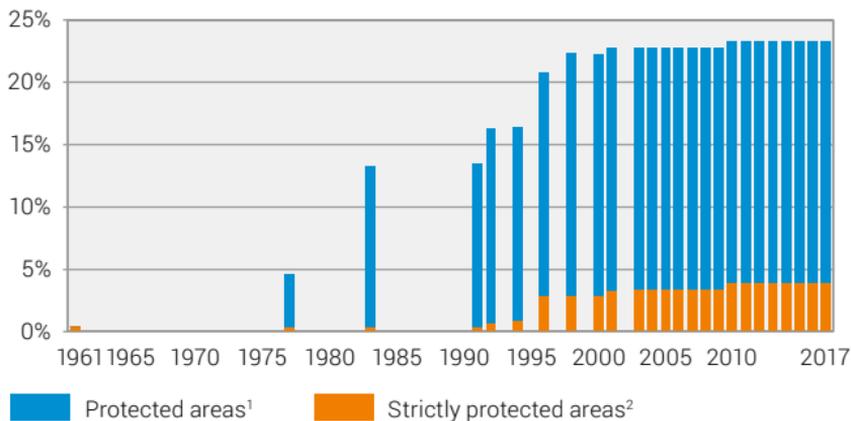
Source: FSO – Environmental accounting, STATENT

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Between 2008 and 2016, employment in the environment sector increased by 36%, with the number of full-time equivalents rising from 110 700 to 150 200. This development was due in particular to activities linked with energy-saving measures in the construction of buildings and the production of renewable energy. Overall employment saw growth of 7% over the same period. Accordingly, the share of the environment sector in total employment increased from 3% to 3.8% accordingly.

## Protected areas of national importance

Share of national territory (areas with multiple protection counted only once)



<sup>1</sup> Water and migratory bird sanctuaries, federal game reserves, landscapes and natural monuments of national importance

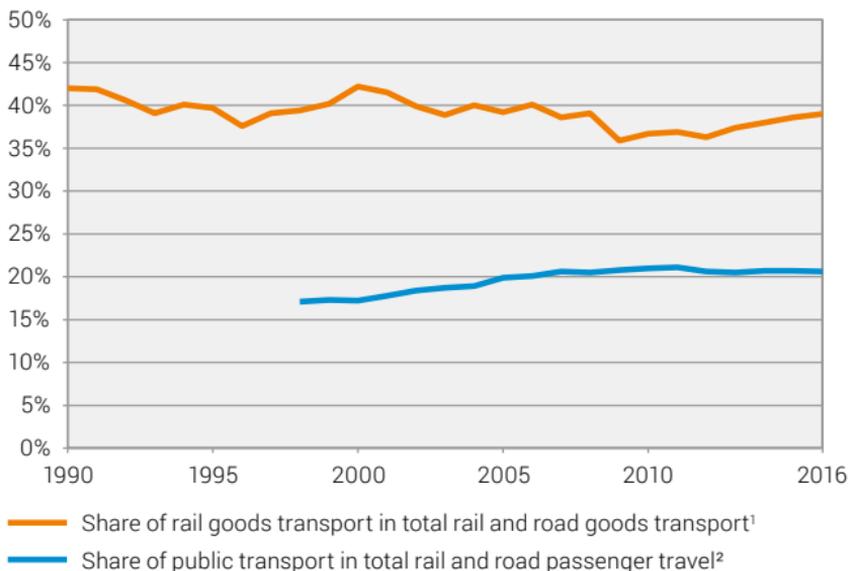
<sup>2</sup> National park, raised bogs and fenlands, alluvial zones, amphibian breeding areas, moorland, dry meadows and pastures

Source: FOEN

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Areas of national importance for the protection of biodiversity and the landscape together cover roughly 23% of Switzerland's surface area. 4% of the surface area is strictly protected, i.e. its undiminished preserved state is enshrined in law.

## Modal split in passenger and goods transport



<sup>1</sup> As percentage of tonne-kilometres

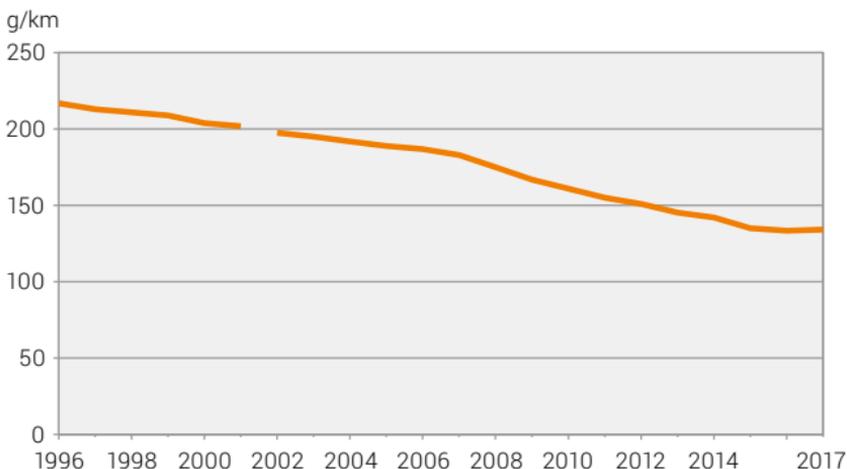
<sup>2</sup> As percentage of person-kilometres

Source: FSO

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The transport performance of both goods transport and passenger transport have increased in recent years. However, the share of goods transport by rail has decreased. In 2016 it was 39%. In contrast, in the case of passenger transport the share of public transport increased between 1998 and 2007 and has since levelled off to 20.5%.

## Average CO<sub>2</sub> emissions from new passenger cars



Values before 2002 were calculated using another method.

In line with the CO<sub>2</sub> Act, average emissions should have been reduced to 130 g/km by 2015, which has not happened. The new aim from 2020 is 95 g/km.

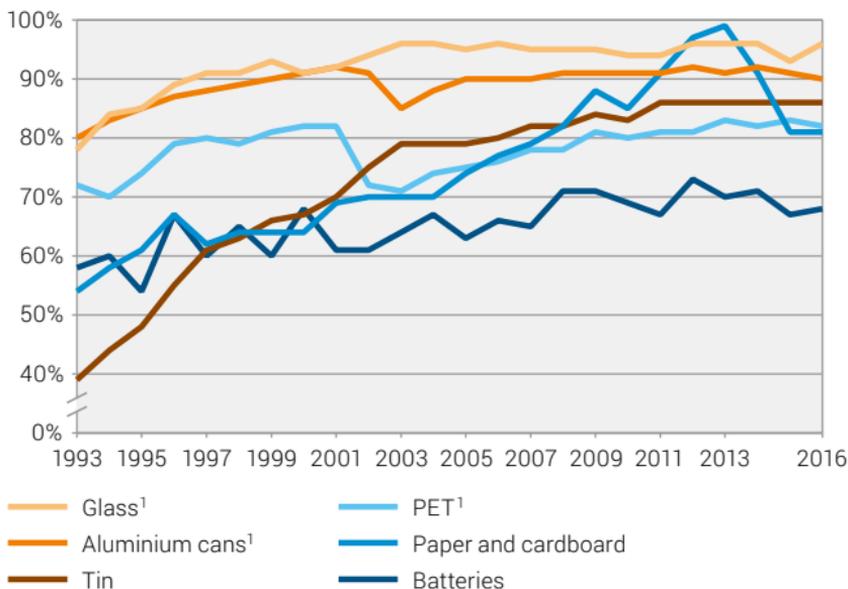
Source: SFOE

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According to test-bench measurements, average CO<sub>2</sub> emissions from new passenger cars fell between 1996 and 2017 by 38% and in 2017 were 134 g per kilometre. However, the CO<sub>2</sub> emissions from all passenger cars dropped by only 6.6% between 1996 and 2016. This difference is due to the inclusion of older passenger cars, the increase in traffic volume as well as the growing gap between test-bench measured CO<sub>2</sub> emissions and those actually arising in road traffic. On average this gap was 13% in 2005. By 2015 it had risen to 41%.

## Separately collected municipal waste (recycling)

Collection rate



<sup>1</sup> A deposit can be introduced if the recycling rate of 75% stipulated in the Beverage Container Ordinance (BCO) is not achieved.

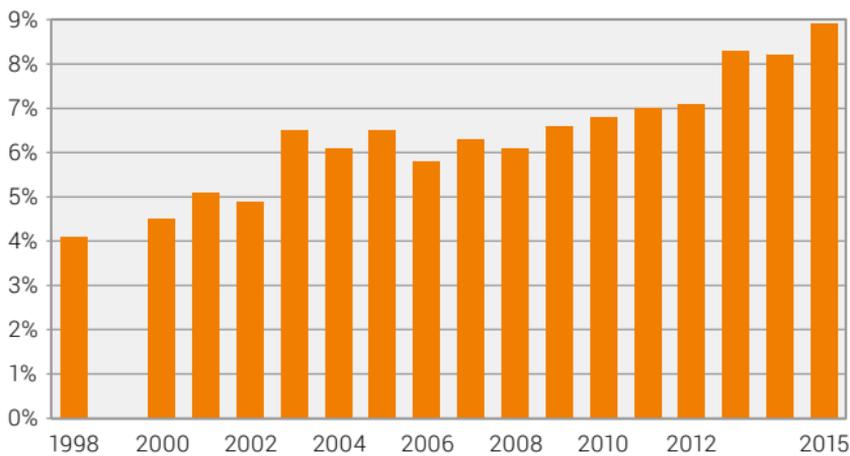
Source: FOEN

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In 2016, 376 kg of waste from households and industry per person was collected separately and entered the recycling chain. This corresponds to approximately 52% of the total municipal waste. Scrap paper, green waste and glass make up the largest quantities here.

## Consumption of organic products

Share of private household expenditure on products with an organic label out of the total expenditure for food and drink



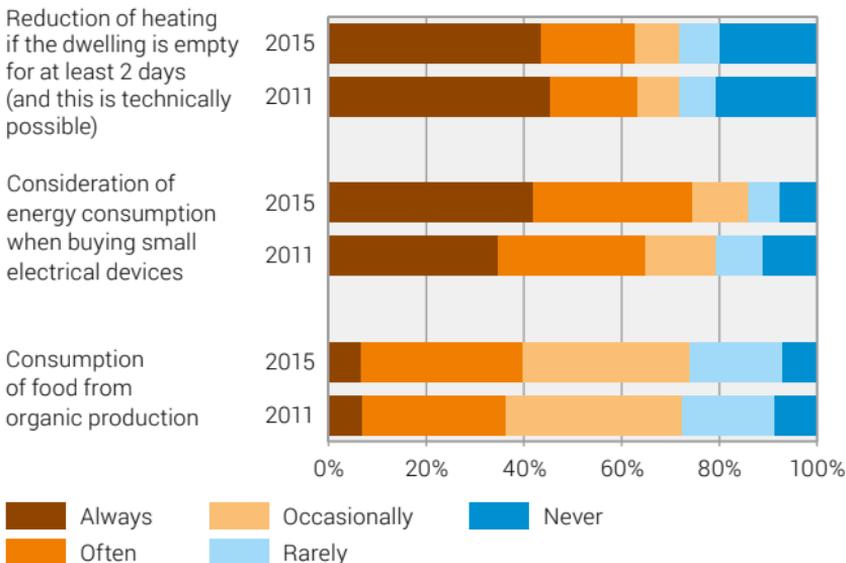
Source: FSO – HBS

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Products that are produced in accordance with the ordinance on organic farming are labelled as organic. Among other things, the principles apply that no chemical-synthetic pesticides and no modified organisms are used and that livestock are kept according to specific regulations. In 2015, around 9% of the total expenditure on food and drink was spent on organic products.

## Environmental behaviour in everyday life

Share of population



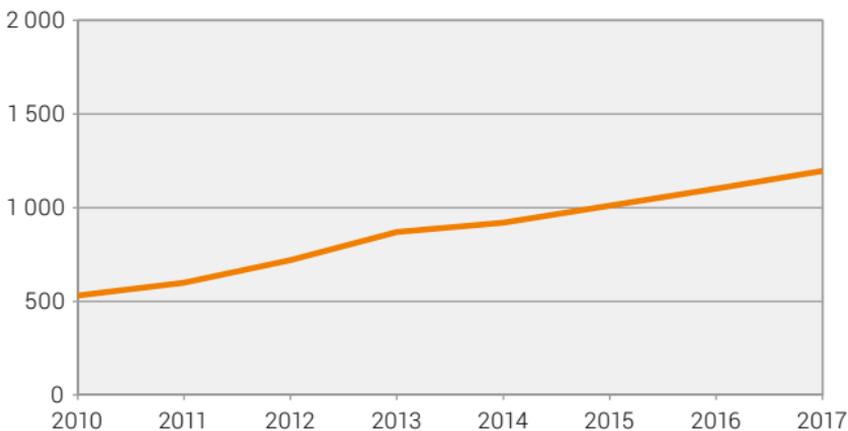
Source: FSO – Omnibus surveys 2011 & 2015

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In 2015 the population was more likely than four years previously to take electricity consumption into account when purchasing small electrical devices or lamps. In 2015, 42% said they always consider this, compared with 35% in 2011. In 2015 when asked if they reduce the heating when their dwelling is empty for at least two days, 44% said they “always” did so and 20% “never”. When asked about their consumption of organically produced food, another environmentally relevant aspect of everyday life, 7% of the population said they bought only organic products and the same percentage never do so.

## Remediation of contaminated sites

Number of remediated sites



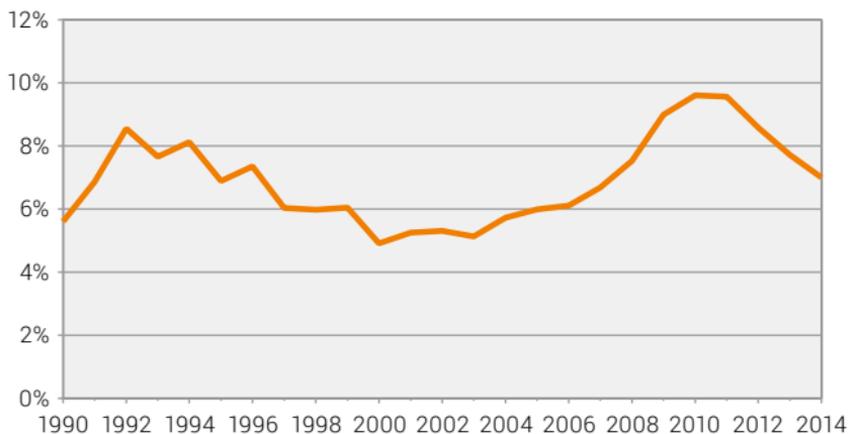
Source: FOEN

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Contaminated sites are polluted sites (factories, shooting grounds, landfills, accidents) that have been proven to cause a harmful impact on the environment (groundwater and surface waters, soil, air) and thus pose a risk to human health, animals and plants. There are around 4000 contaminated sites in Switzerland, with around 30% of these sites having been cleaned up by the end of 2017.

## Environment-related patents

Share of environment-related patents of the total number of patents filed by Swiss inventors



Source: OECD

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In 2014, 216 environment-related patents were filed by Swiss inventors. As a percentage of all filed patents, this corresponds to a share of approximately 7%. Environment-related patents include innovations in the sectors of renewable energy production, energy efficiency, environmental management and emission-reducing technologies.

## Comparison of some European countries

	AUT	BEL	CH	DEU	DNK	ESP
Share of forest areas, 2014	46.9%	22.6%	31.6%	32.7%	14.4%	36.8%
Share of organic farming area in total utilised agricultural area, 2016	21.3%	5.8%	13.5%	6.8%	7.7%	8.5%
Gross energy consumption, 2016 (t oil equivalent/person)	3.9	5.1	3.1	3.8	3.0	2.6
Share of renewable energies in gross energy consumption, 2016	29.7%	6.8%	20.7%	12.3%	28.7%	14.3%
Emissions of greenhouse gases, 2016 (t/person)	9.4	10.8	6.4	11.4	9.3	7.3
Emissions of nitrogen oxide, 2015 (kg/person)	17.1	17.4	7.7	14.5	20.1	19.5
Domestic material consumption (DMC), 2016 (t/person)	20.4	12.6	11.4	15.6	22.9	8.7
Household waste, 2016 (kg/person)	564	420	720	627	777	443
Share of separately collected municipal waste (recycling and compost), 2016	57.6%	53.5%	52.5%	66.1%	47.7%	29.7%
Average CO <sub>2</sub> emissions from new passenger cars, 2016 (g/km)	120	116	134	127	106	114
Share of environmental taxes in total tax and social contribution revenue, 2016	5.6%	5.0%	6.2%	4.8%	8.6%	5.5%
Threatened bird species as percentage of all known bird species <sup>1</sup>	27%	28%	35%	36%	16%	21%

<sup>1</sup> Latest data available    <sup>2</sup> Status 2014

Sources: FSO; Eurostat; OECD

FIN	FRA	GBR	GRC	IRL	ITA	LUX	NLD	PRT	SWE	EU-28
73.1%	30.8%	12.9%	31.2%	10.9%	31.4%	33.5%	11.1%	34.9%	68.9%	...
10.5%	5.3%	2.8%	6.5%	1.7%	14.0%	3.3%	2.9%	6.8%	18.3%	6.7%
6.3	3.7	2.9	2.2	3.1	2.6	7.1	4.6	2.3	4.9	3.2
30.7%	9.9%	8.1%	10.9%	7.5%	16.8%	5.3%	4.7%	24.2%	37.1%	13.2%
11.1	7.1	7.9	8.8	13.5	7.2	19.8	12.2	6.9	5.6	8.7
25.5	12.5	14.0	22.3	16.8	12.6	37.6	13.4	17.4	13.2	15.2
31.5	10.9	8.6	11.6	22.2	8.5	25.8	9.7	14.8	22.7	13.3
504	511	483	498	562 <sup>2</sup>	497	614	520	461	443	482
42.0%	41.7%	44.3%	17.2%	39.8% <sup>2</sup>	45.1%	48.3%	53.1%	31.0%	48.9%	45.8%
120	110	120	106	112	113	126	106	105	123	118
7.1%	4.9%	7.2%	9.8%	7.9%	8.2%	4.6%	8.7%	7.5%	5.1%	6.3%
35%	27%	41%	14%	27%	28%	19%	24%	28%	20%	...

## Glossary

**Biodiversity** Biodiversity spans the various species of animals, plants, fungi and bacteria, genetic diversity within the species and the different habitats in which the species live.

**CO<sub>2</sub>-equivalents** Emissions of greenhouse gas emissions other than CO<sub>2</sub> (CH<sub>4</sub>, N<sub>2</sub>O, HFKW, PFKW and SF<sub>6</sub> and NF<sub>3</sub>) are converted into CO<sub>2</sub>-equivalents according to their global warming potential (GWP) to ensure better comparability. 1 kg CH<sub>4</sub> corresponds to 25 kg CO<sub>2</sub>, 1 kg N<sub>2</sub>O corresponds to 298 kg CO<sub>2</sub>.

**Eco-efficiency** Measure for the economic performance (e. g. GDP) in relation to the environmental impacts (e. g. the resources used or the emissions released).

**Emissions** The release of pollutants, noise or radiation from natural sources or by humans into the environment.

**Energy carriers** Any substance which can be used to generate energy, whether directly or after transformation. Fossil energy carriers are all primary energy carriers which have come from organic substances in the soil (petroleum, natural gas, various hydrocarbons, coal etc.)

**Energy use** Corresponds to the gross energy consumption minus the electricity import/export balance.

**External costs** Costs incurred during production or consumption that are not borne by those responsible but a third party.

**GDP (Gross Domestic Product)** GDP is used for measuring a country's economic performance over a period of one year.

**Greenhouse effect** The greenhouse effect is a natural phenomenon. It originates from various gases in the atmosphere (water vapour, carbon dioxide, methane, nitrous oxide etc.) which reflect part of the heat radiation leaving the earth. An increase in the concentration of such greenhouse gases leads to the heating of the atmosphere.

**Greenhouse gases** Natural or man-made gaseous substances in the air which contribute to the greenhouse effect. The Kyoto Protocol considers the following greenhouse gases or groups of gases: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF<sub>6</sub>) and nitrogen trifluoride (NF<sub>3</sub>).

**Gross energy consumption** The gross energy consumption consists of the domestically produced primary energy, the foreign trade totals of various energy carriers as well as changes in stocks.

**Immissions** Levels of air pollutants, noise, vibration or radiation at their point of impact.

**Limit values** Limit values are used to evaluate harmful or noxious impacts. They consider the effects of emissions on the environment and more sensitive groups of people such as children, the sick, the elderly and pregnant women. Thresholds are defined in terms of air pollution, noise pollution, vibration and radiation.

**NMVO** (**N**on **M**ethane **V**olatile **O**rganic **C**ompounds) Volatile organic compounds that exclude methane and FCKW. They are precursors for the formation of ozone, summer smog and PM10.

**PM10** (**P**articulate **M**atter <10  $\mu\text{m}$ ) Dust particles with a diameter of less than 10 microns. These particles are caused by combustion processes, mechanically due to abrasion and resuspension or are formed from precursors. The main sources of PM10 are motorised transport, agriculture and forestry, industry and commerce (including construction sites).

**Renewable energy** Energy sources that are available for an unlimited period in principle. This includes the use of hydropower, solar energy, ambient heat, biomass, and wind energy, renewable energy from waste as well as energy from waste water treatment plants.

## Further information

**Federal Statistical Office (FSO) website:**

[www.statistics.admin.ch](http://www.statistics.admin.ch) → Look for statistics → Territory and environment

**Data relating to the graphs shown:**

[www.statistik.ch](http://www.statistik.ch) → Statistiken finden → Raum, Umwelt → Umwelt und Ressourcen

**NewsMail subscription:**

[www.statistik.ch](http://www.statistik.ch) → Dienstleistungen → NewsMail-Abonnement

**Federal Office for the Environment (FOEN):** [www.foen.admin.ch](http://www.foen.admin.ch)

**Swiss Federal Office of Energy (SFOE):** [www.sfoe.admin.ch](http://www.sfoe.admin.ch)

**MeteoSwiss:** [www.meteoswiss.ch](http://www.meteoswiss.ch)

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