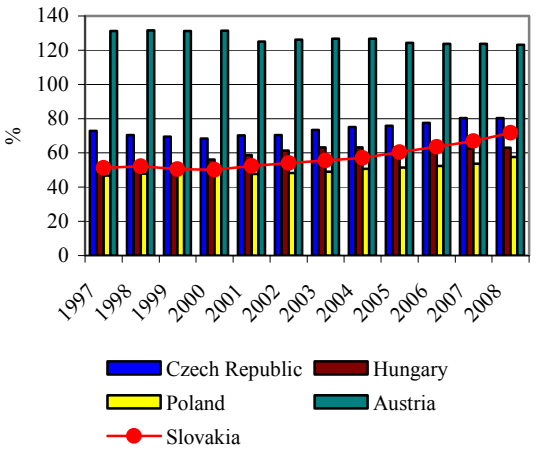
STATE OF THE ENVIRONMENT - CAUSES AND CONSEQUENCES

• ECONOMIC SECTORS AND THEIR IMPACT ON ENVIRONMENT

Economy trend in the Slovak Republic

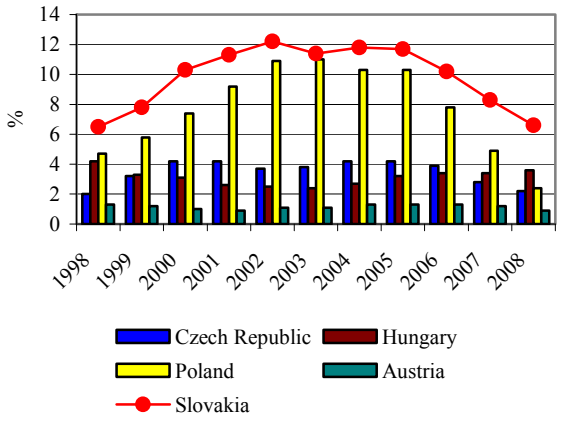
The deepening financial crisis, onset of economic crisis, and preparations for entering into the European Monetary Union were in 2008 the main impetuses that impacted the development of the Slovak economy within the mentioned time period. Slovak economy in the mentioned year generated **the Gross Domestic Product** (GDP) in current prices at 2 0284.2 bill. SKK and in reality increased by 6.4 %, compared to the previous year. Slovak Republic within the group of 27 EU countries had been the second fastest growing economy. Industry with its 33.8 % showed the highest share on the GDP.

Trend in GDP per capita in PPS (EU-27 = 100)



Source: Eurostat

Long-term unemployment (more than 12



*Share to total number of employed Source: Eurostat

In 2008, the selective survey of work force showed 257.5 thous. **unemployed** people, with the unemployment rate dropping down to 9.6 %.

Export of motor vehicles that are important for Slovakia dropped by 4.4 % in 2008, compared to 2007. Most vehicles in 2008 were exported to EU countries (74 %), especially to Germany, France, Italy, and Finland. As for the other countries, most vehicles were exported to Russia and USA.

In 2008, **foreign direct investments (FDI)** to the SR economy were 28.672 bill. SKK, and total balance of direct foreign investments in Slovakia reached the sum of 804.470 bill. SKK.

Industry

- **Share of manufacturing in GDP generation**

Pursuant to the Branch classification of economic activities, there are three basic groups involved in industry: **C** - Mining and quarrying, **D** – Manufacturing and **E –** Electricity, gas and water production and distribution.

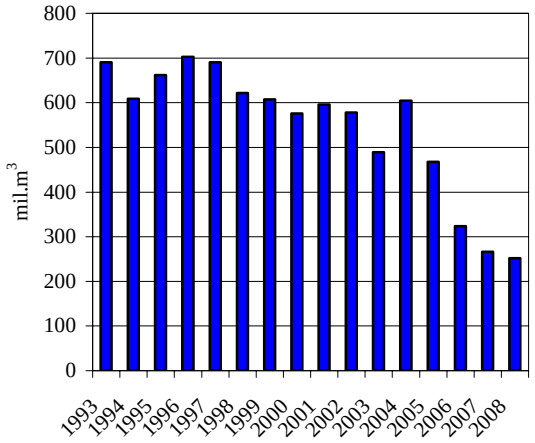
Industry has weakened its position in the Slovak economy, reducing its **share on GDP generation** in 2008 to 33.8 %. (reduction by 3.5 % in comparison to 2007). Within the area of industry, there was an increase in industrial production (6 %) and in the area of electricity, gas, and cold air supply (2.6 %).

- **Demand of industrial production on the exploitation of resources**

Compared to other EU countries, energy demand of the Slovak industry is very high. In 2007, share of industry on total energy consumption in Slovakia reached 41.8 % (in the EU-27 countries it was 27.9 %).

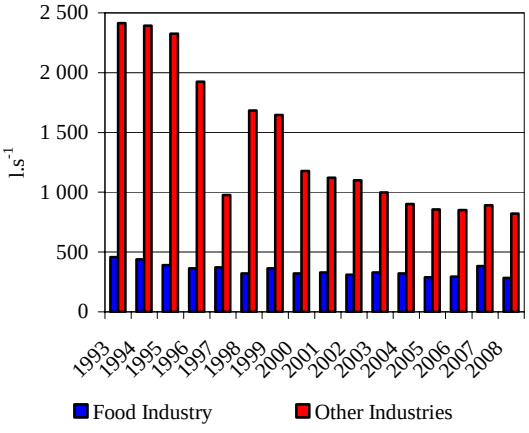
Since 1993, **surface water abstraction** by industry shows a falling tendency. In 2008, surface water abstraction by industry dropped by 29.7 %, compared to 1993. During the year 2008, as much as 37.9 % of total abstractions were industrial. Trends in **underground water abstraction** by industry show analogical tendency.

Development in consumption of surface water in industry



Source: SHMI

Advancement in underground water consumption in industry

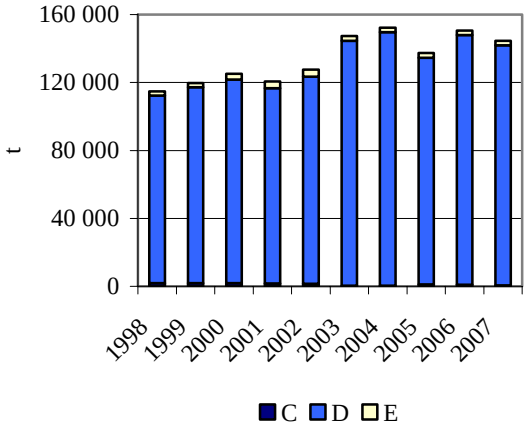


Source: SHMI

- **Impact of industrial production on environment**

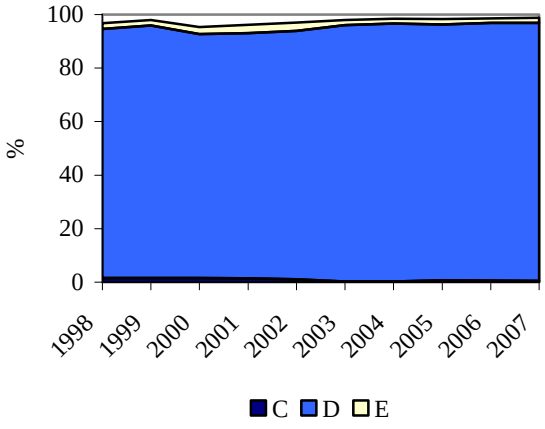
CO emissions from industry in 2007 made up as much as 98.8 % of large-size and middle-size stationary sources and emissions **increased** by 25.9 %, compared to 1998. **SO_2 emissions** from industry in 2007 made up as much as 99.3 % of large-size and middle-size stationary sources and emissions **decreased** by 56.6 %, compared to 1998.

CO emissions trend from stationary industrial sources



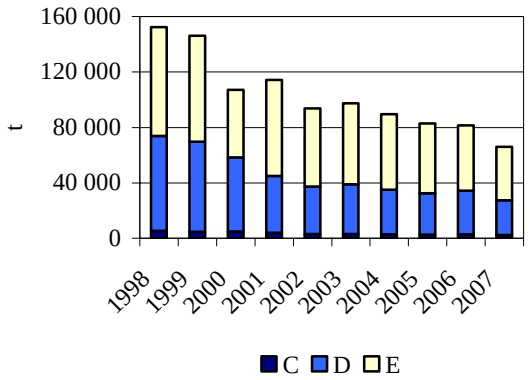
Source: SHMI

Share of CO emissions from stationary industrial sources on the overall CO emissions



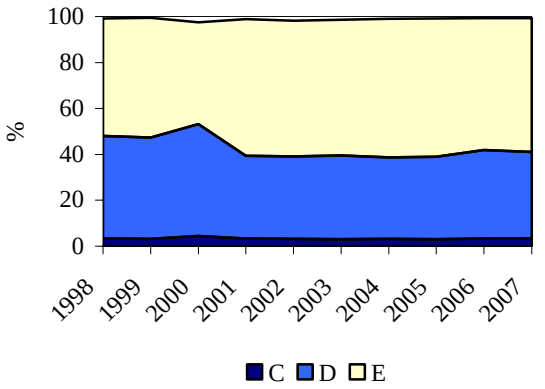
Source: SHMI

SO_2 emissions trend from stationary industrial sources



Source: SHMI

Share of the SO_2 emissions from stationary industrial sources on the overall SO_2 emissions

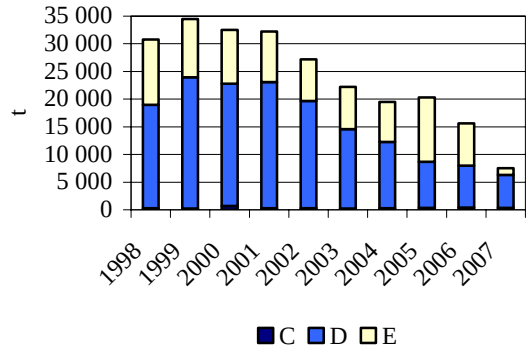


Source: SHMI

NO_x emissions from industry in 2007 made up as much as 90 % of large-size and middle-size stationary sources and emissions **decreased** by 48.5 %, compared to 1998. **PM emissions** from industry in 2007 made up as much as 93.7 % of large-size and middle-size stationary sources, and emissions **decreased** by 75.6 %, compared to 1998.

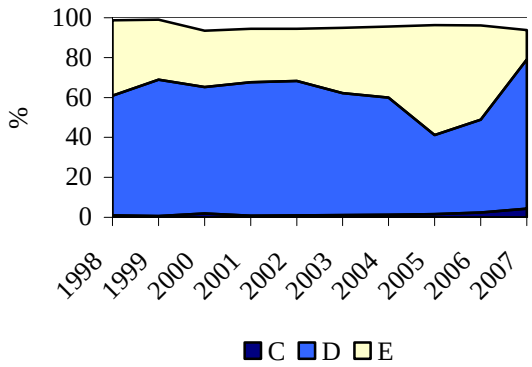
Heavy metal emissions by industry have had a decreasing tendency since 1990. In 2007, compared to 1990, only Cd emissions in industrial technologies increased.

PM emission trend from stationary industrial sources



Source: SHMI

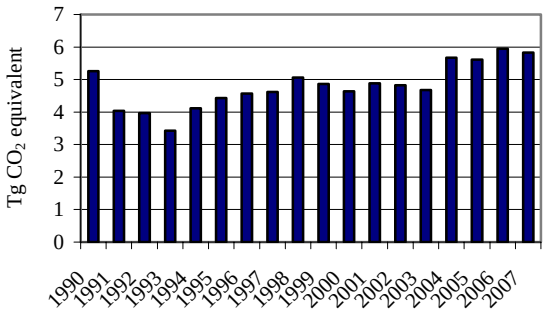
Share of the PM emissions from station industrial sources on the overall SPM emissions



Source: SHMI

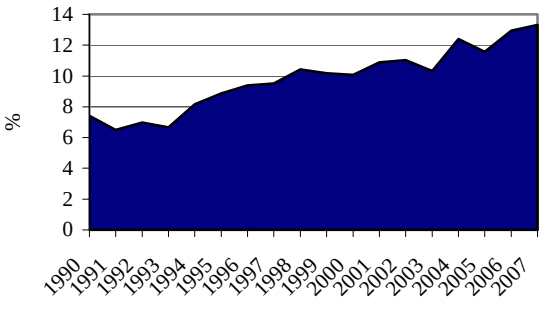
Aggregated greenhouse gases emissions from industrial processes in 1990-2007 had a slightly rising trend. Compared to 1990, in 2007, these emissions from industrial processes increased by 10.7 %.

Trend of aggregated emissions of the greenhouse gases from industry (Gg CO_2 equivalent)



Source: SHMI

Share of the emissions of greenhouse gases from industry on the greenhouse gases overall emissions



Source: SHMI

In 2008, **industry alone generated 6 565 028 tons of waste** (67.7 % share in total waste generation), including **382 286 tons of hazardous waste** and **6 182 742 tons of other waste**.

Extraction of minerals

Changes that occurred in 2008 lead to the increasing in the exploitation of the majority of minerals.

Trend in extraction of minerals in 2001-2008

Extracted mineral	Measure unit	2001	2002	2003	2004	2005	2006	2007	2008
Brown coal and lignite	kt	3 761.9	3 661.2	3 508.8	3 101.7	2 513.0	2 208.6	1 851. 56	2 242.82
Crude oil. including gasoline	kt	54.085	51.770	47.943	42.082	33.15	30.5	24. 49	20.8
Natural gas	thous. m^3	195 938	200 812	186 797	178 088	150 851	136 881	500 550	111 823
Ores	kt	1 047.5	719.2	706.5	977.8	651.89	741.9	666.57	479.14
Magnesite	kt	1 573.0	1 464.5	1 640.9	1 668.9	1 555.0	1 467.8	1503.60	1 438.50
Salt	kt	104.0	102.7	104.8	104.3	105.1	122.5	116.76	99.31
Building stone	thous. m^3	3 881.6	4 478.3	4 503.3	4 527.5	6 016.2	6 309.2	6 528.40	7 789.10
Gravel sands and sands	thous. m^3	2 689.4	2 933.1	3 872.7	3 951.7	4 870.1	5 502.9	5 113.50	6 979.40
Brick clay	thous. m^3	442.1	433.4	507.4	591.7	466.8	508.0	1 011.70	512.74
Limestone and cement raw materials	thous. m^3	302.3	332.7	384.9	569.5	690.6	673.5	627.10	757.40
	kt	1 614.6	1 547.4	1 649.4	3 479.8	3 743.3	4 131.2	4 107.80	1 831.50
Limestone for special purposes	thous. m^3	292.3	833.0	941.4	14.9	28.50	67.0	90.30	136.10
	kt	325.0	0.0	0.0	1 057.5	834.80	1 243.6	1 175.70	862.50
High-content limestone	kt	4 211.1	4 356.8	4 093.0	3 767.3	4 053.5	4 393.0	4 362.00	4 035.00
Other raw materials	thous. m^3 surface	1 026.9	1 216.8	1337.2	567.8	509.1	531.6	476.50	490.71
	kt under-ground	142.3	86.4	86.2	91.6	106.5	115.3	139.40	140.60
	kt surface	32.30	31.1	11.8	1 143.9	1 024.0	1 279.3	1 457.45	931.80

Source: MMO SR

Brown coal and lignite extraction in 2008 grow up. Individual mines showed about 391.26 kt of extracted volumes more than in 2007.

Crude oil, gasoline, and natural gas extraction were decreased, compared to the previous year. Total extracted volumes included 18 150 t of semi-paraffin crude oil, and 2 652 t of gasoline. Natural gas stores were decreased by 111 823 thous. m^3.

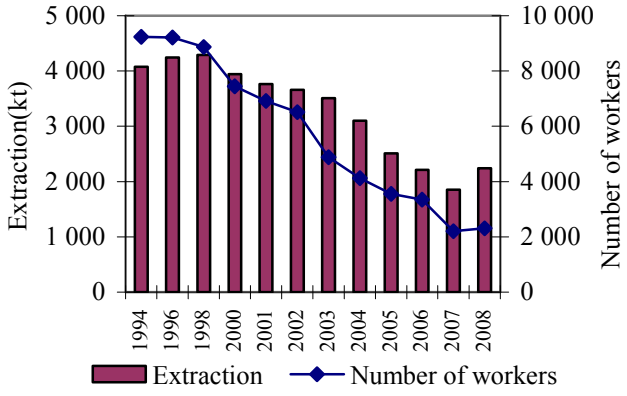
Exploitation of **ore minerals** decreased. The Siderit, Ltd. company in Nižná Slaná has the biggest share on all ore volumes, (443.8 kt). The Slovenská banská Ltd. company in Hodruša Hámre was contributed by 14.74 kt.

In 2008, there was a slight increase in exploitation of **non-ore raw material.** However, 1 438.5 kt of **magnesite** was extracted at three significant magnesite deposits (Jelšava, Lubeník, Hnúšťa), which is a decreasing by 65.1 kt, compared to the previous year.

In 2008, exploitation of **rock salt** (Solivary, Prešov) was at the level of 99.31 kt of salt in salt water. The amount of salt decreased by 17.45 kt compared to 2008.

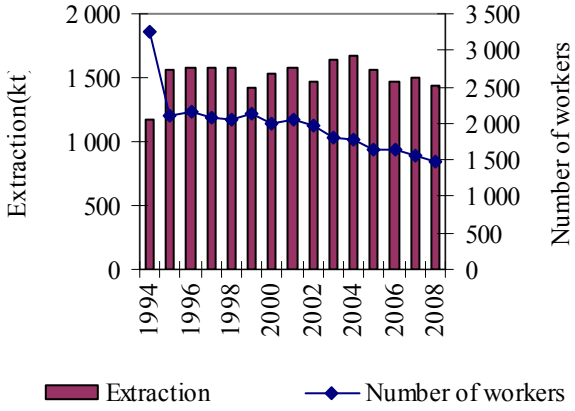
Basic indicators of mineral extraction trend in SR between the years 1991-2008

Trend in brown coal and lignite extraction



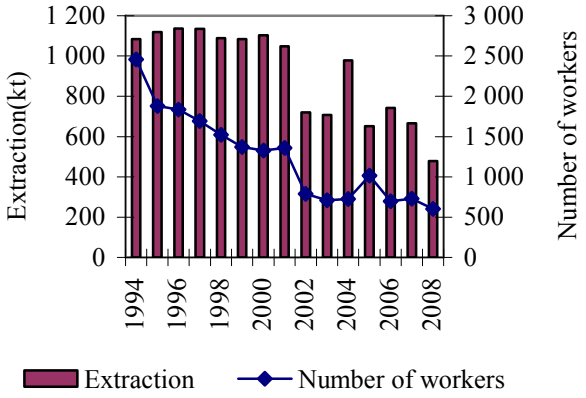
Source: MMO SR

Trend in magnesite extraction



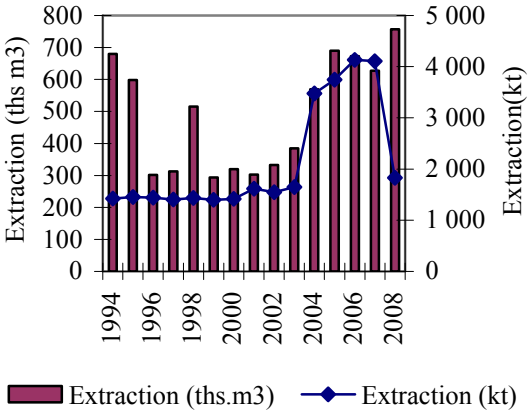
Source: MMO SR

Trend in ores extraction



Source: MMO SR

Trend in limestone and cement materials extraction



Source: MMO SR

♦ **Environmental impact of mineral exploitation**

The Central mining office keeps records of current mining works including **dumps** and **tailings dumps.** As of December 31, 2008, there were 139 dumps, 97 in extraction site (70 active and 27 inactive) and 26 inactive outside extraction site (40 active and 2 inactive). The territory with located dumps is 286.98 ha.

As of December 31, 2008, there were 40 tailing dumps, 22 in extraction site (15 active and 7 inactive) and 19 outside in extraction sites (13 active and 6 inactive) **tailings dumps**. The territory with located tailing dumps is 18.70 ha.

Energy management, Heat production and Gas management

- **Energy sources balance**

SR ensures almost 90 % of the primary energy sources (PES) through purchase outside the internal EU market. The only significant domestic energy source is brown coal. Domestic exploitation of natural gas and crude oil is not significant.

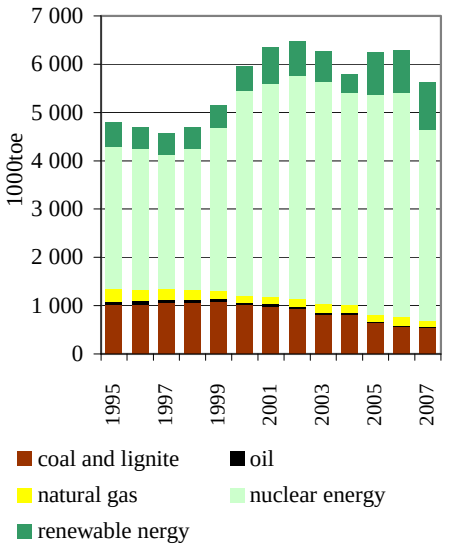
Export dependency of Slovakia on energy sources (TJ)

	1999	2000	2001*	2002	2003	2004	2005	2006	2007
Electricity									
Import	5 342	3 424	21 834	24 156	31 043	31 432	28 818	30 924	48 888
Export	3 334	13 129	35 075	39 121	31 161	38 135	40 572	39 316	42 678
Gas fuels									
Import	222 744	242 613	241 080	245 807	230 751	237 753	253 147	238 111	214 804
Export	397	23	0	0	137	35	15 394	20 694	6 270
Liquid fuels									
Import	245 480	231 362	247 399	321 919	272 192	295 922	284 844	297 852	308 357
Export	117 116	119 599	126 743	131 557	141 429	163 185	149 581	154 202	164 013
Solid fuels									
Import	142 530	145 321	151 236	141 409	154 594	158 435	161 394	155 564	165 025
Export	723	1 709	6 886	4 553	2 959	1 524	6 288	6 205	6 343

* since 2001, data under the revised methodology of the Slovak Statistical Institute 2002 Source: SU SR

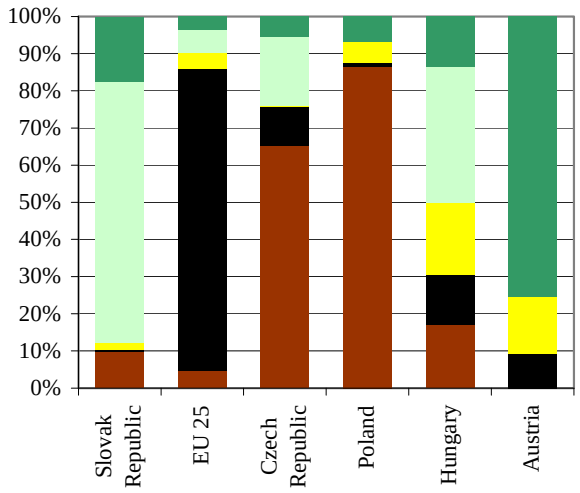
Utilization of nuclear fuels in recent years plays an exceptionally significant role in the PES structure of the SR.

Trend in used primary energy sources in the SR



Source: EUROSTAT

Structure of primary energy sources in 2007 – international comparison

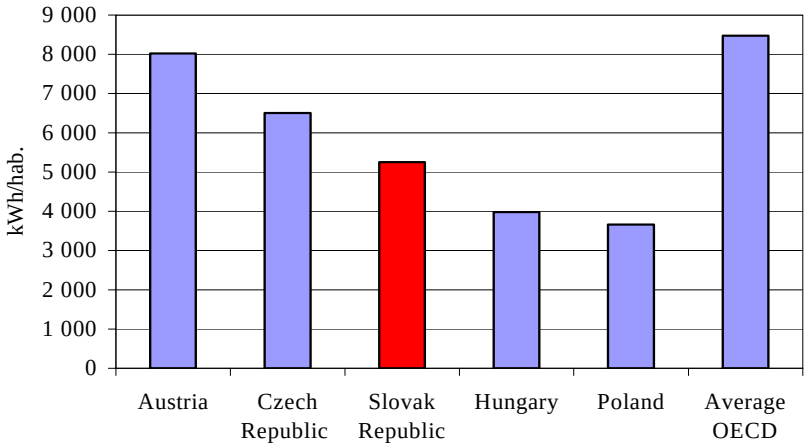


Source: EUROSTAT

Consumption of primary energy sources per capita in the SR is still lower than in the EU 25 countries, which is about 800 PJ per capita. Although it showed some increase in the last year, it currently does not reach more than 90 % of the EU average.

In comparison with developed countries of the OECD and EU, Slovakia shows also lower electricity consumption per capita. This is caused especially by low electricity consumption in households and in the sector of services. Further trend in electricity consumption represents a major factor for strategic planning at all levels. We anticipate a year-to-year increase in total electricity consumption by 1.2 %.

Total electricity consumption per capita in 2007 - international comparison



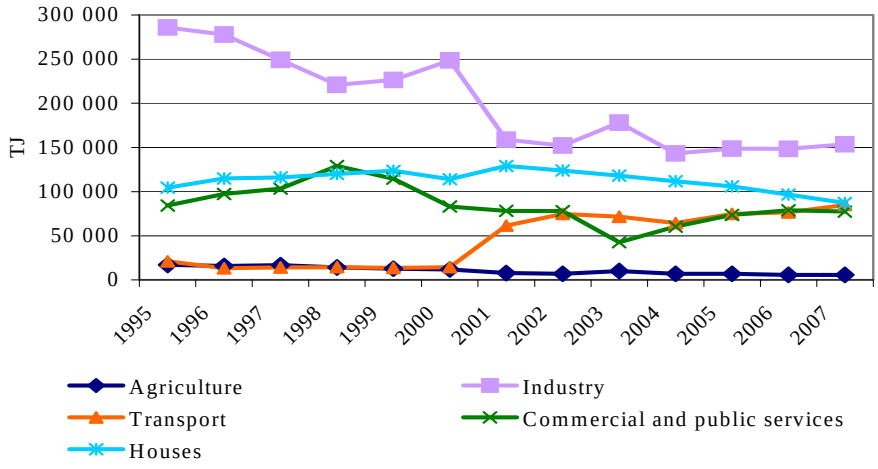
Source: IEA

The period of 2006-2010 introduced a number of changes into the structure of Slovak electric and power industries. Due to Slovakia having complied with obligations assumed as the result of accession talks with the EU and also due to obsolete technology and non-compliance with the ecological requirements, this time period has been marked by a gradual accumulation of large electricity capacities shut-downs.

Data on the final energy consumption trend suggest a decreasing tendency every year, with the exception of transport, commerce, and services. The industry has the major final fuels consumption of all sectors of economy.

Compared to other EU countries, there is a relatively low consumption by inhabitants.

Trend in final consumption of energy, fuels, electricity, and heat in the sectors of economy



Source: SO SR

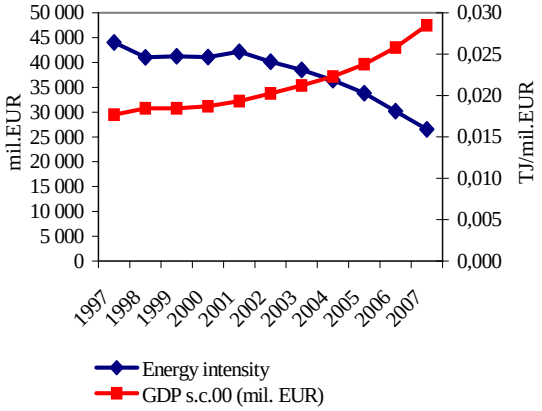
♦ Energy intensity

Energy intensity (EI) is an important economic indicator also used to make international comparisons. It is defined as the share of the gross inland energy consumption (GIC) on the generated GDP (GIC/GDP=ED). Over the recent years, the GDP growth was accompanied by a balanced consumption of energy sources and a drop in the final energy consumption. Since 1993, energy intensity has been decreasing every year by 4 %, caused mainly by more development in the value added production, as well as by introduction of rationalization measures in production and consumption alike.

Estimate of the GDC by 2030 is based on its mild growth. The estimate builds on the premise that by 2015 GDP will grow faster than the rate of reduction in ED, and that after this year there is expected a faster reduction in ED than the GDP growth.

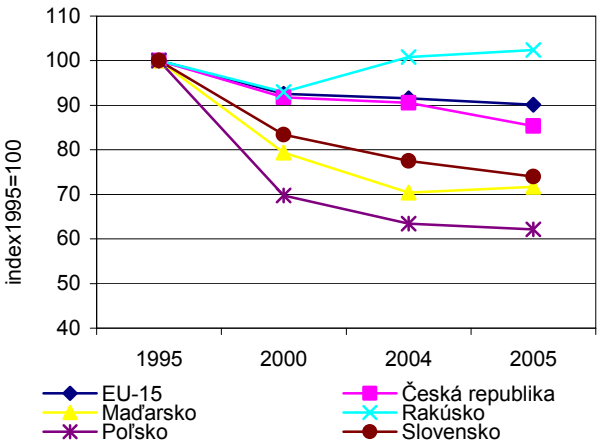
Notwithstanding this positive trend, the EI in Slovakia is still about 1.5-times higher than the average consumption of the OECD countries.

Trend in energy intensity and GDP in SR



Source: SO SR

Trend in energy intensity – international comparison, Index 1995=100



Source: EEA

♦ Electricity power management

Total consumption of the Slovak electricity network in 2008 was 29 830 GWh, and in comparison to 2007 it grew by 198 GWh. The maximum annual load reached 4,342 MW. Installed output of Slovakia in 2008 was 7 453 MW. Output structure of the production base was evenly distributed among the nuclear, thermal, and hydroelectric power plants. Also, the 2nd JE EBO V1 block with the output of 440 MW was shut down as of December 31, 2008.

Total electricity production in Slovakia reached 29 309 GWh, with nuclear power plants showing a 57 % share on production, thermal power plants showed 28.4 %, and 15.6 % was produced by hydroelectric power plants. Compared to 2008, electricity production grew by 1 402 GWh, which represents a 5 % growth in production. This was caused by a significant increase in production by nuclear power, compared to 2007.

- **Gas management**

Slovak Gas Management Industries in Bratislava is the dominant company on the Slovak gas market, with the greatest market share. In 2007, the company provided services to approximately 1.474 mil. of clients in various segments (bulk clients, small clients, and households).

In 2008, most of domestic gas consumption is imported from the Russian Federation (5.7 bill. m^3). Gas in the volume of 0.07 bill.m^3 originated from household sources from the NAFTA a.s. company.

Volumes of sold natural gas in the designated Slovak territory in 2008 (5 883 mil.m^3) grew, compared to 2007 (5 668 mil.m^3), this being both due to a colder weather in the beginning of 2008, as well as due to a stabilisation in adopting economical measures in the area of energies. Compared to 2007, households consumed by 6.5 % more gas, while natural gas consumption by small-size consumers fell by 2.4 % and in large-size consumers it grew by 3.6 %.

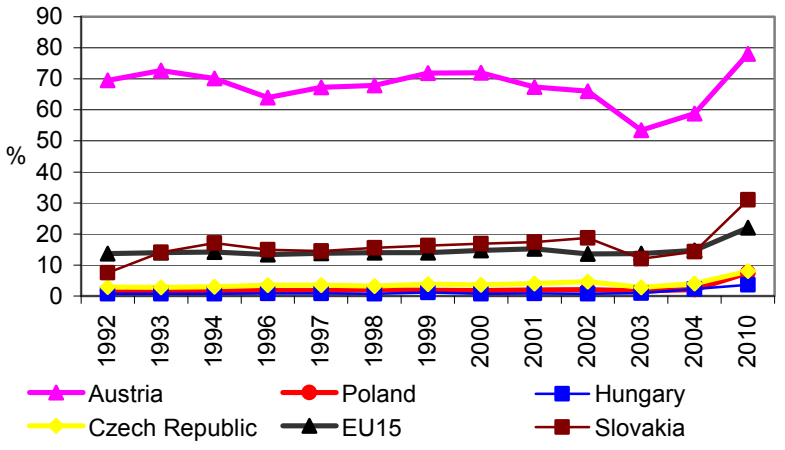
The Slovak gas distribution system is interconnected with the neighboring countries' networks, specifically with Ukraine, Czech Republic and Austria. Capacity of the transport network is more than 90 bill. m^3 annually.

- **Renewable energy sources (RES)**

In January 2008, the European Commission introduced a so-called **climate - energy package,** which is an ambitious approach and will substantially direct the economic trend of the EU member countries in the years to come. It represents a basic tool for reducing the greenhouse gases emissions and increasing the share of renewable sources within the EU energy pool.

Increase in renewable energy sources extraction represents a significant element in the system of measures introduced to meet the Kyoto Protocol's objectives. In 2008, share of electricity produced from the renewable energy sources (RES) on total electricity consumption in Slovakia was 16.6 %, while the greatest share on electricity production from among all RES is shown by large-size hydroelectric power plants (more than 90 %). For this reason, volumes of electricity produced within the Slovak RES network fully depend on favorable hydro-energy conditions. Biomass is the dominant RES used to produce heat.

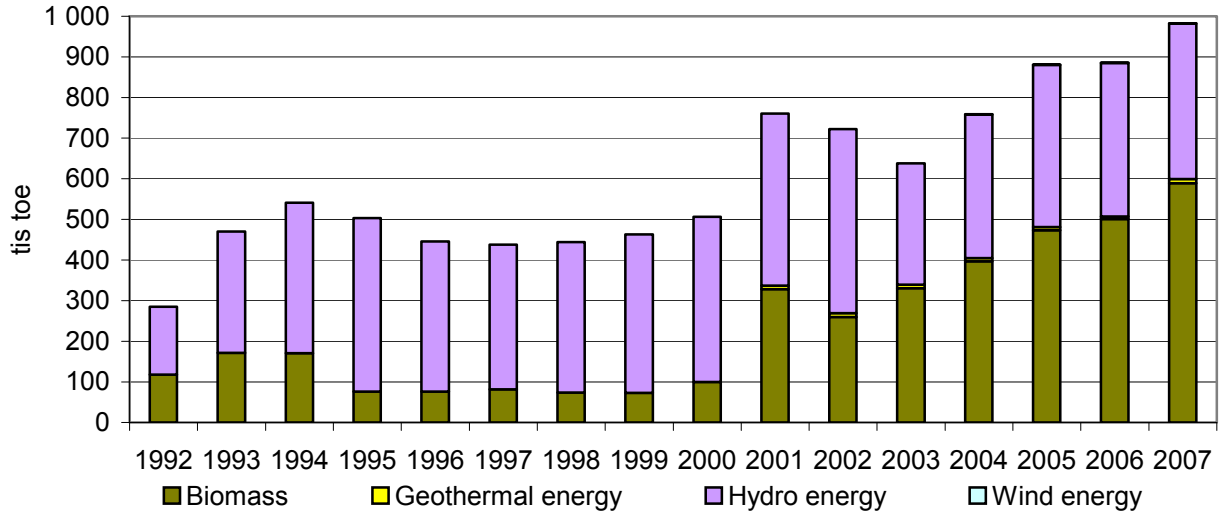
Share of electricity from renewable energy to gross electricity consumption – international comparison



Source: Eurostat

Renewable energy sources in Slovakia show a gradually increasing share on energy production. Based on the figures by Eurostat in 2007, the share of RES on gross domestic energy consumption was 5.5 %. Greatest share in this pool is shown by hydro energy; however, the ratio between its exploitation and the energy consumption of the biomass is gradually equalizing.

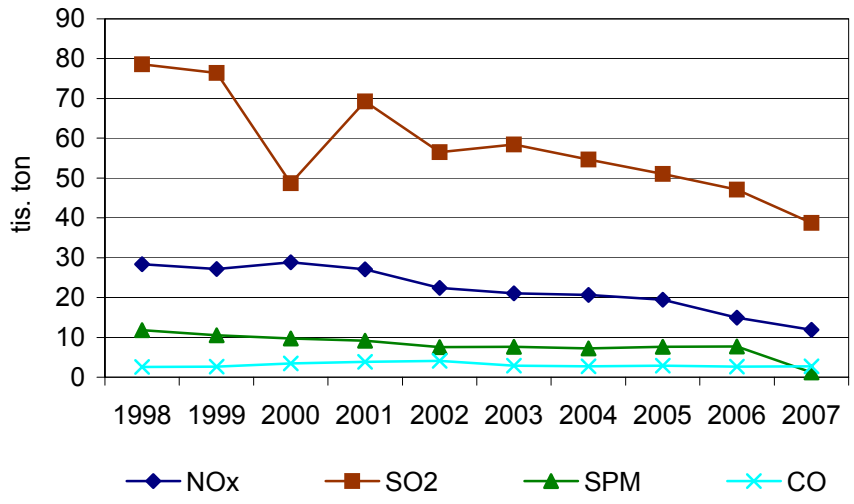
Trend in the share of individual RES types on total RES consumption



- **Air pollution caused by energy production**

Over the recent years, sulfur oxides (SO_2), nitrogen (NO_x), and particulate matter (PM) emissions were reduced significantly. This situation was caused by decreased production and consumption of energy and a shift in the fuel base toward more purified fuels, as well as by using fuels with better quality characteristics.

Trend of basic polluting substances emissions from energy stationary sources in the SR (thousand tons)



Source: SHMI

Power management sector has the most dominant share on the greenhouse gases emissions. In 2007, the share was almost 81.2 % of total greenhouse gases emissions in the SR. Over the monitored period, greenhouse gases air emissions showed a light reduction in the power management (energy) sector. This was caused by a higher proportion of services on the GDP production, higher share of natural gas within the fuel base, structural changes, and decreased energy consumption in energy-demanding sectors. Compared to 1990, total greenhouse gases emissions in the SR in 2007 dropped by 41 %.

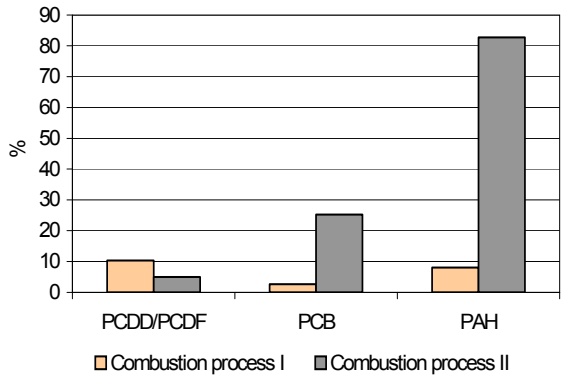
Trend of greenhouse gasses emissions from energy production in the SR (Tg CO_2 equivalent)

	1990	1992	1993	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Energy sector*	58.59	47.23	44.37	42.60	43.19	43.39	41.66	40.56	37.82	40.64	38.55	39.03	37.81	37.40	37.19	35.53

*transport included Source: SHMI

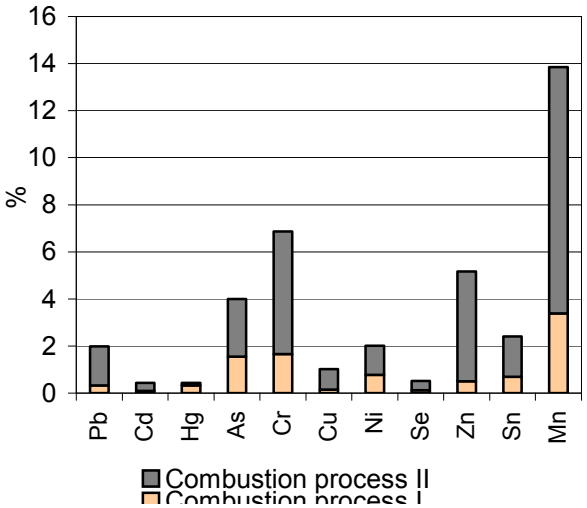
The POP emissions have a falling tendency since 1990. This is caused by a drop in the production and changes to fuels used for household heating. Fluctuations in the PCB emissions (their increase) in 2003 and 2004 relates to the increased consumption of firewood for household heating.

Share of POPs emission from sector of energy to overall POPs emission in the SR



Source: EUROSTAT

Share of heavy metal emission from sector of energy to overall heavy metal emissions



Source: EUROSTAT

Positive trend in the power management sector is recorded mainly by a dramatic reduction to **heavy metals emissions** (Pb, As, Cu, Ni, Zn).

- **Waste water from electricity production and gas management**

Of all areas within the energy sector, electricity power management contributed the most to total volumes of discharged wastewater. Wastewater produced by electric power plants mainly includes water from technological and cooling processes, and also some runoff water. Wastewater from

technologies is chemically contaminated. In case of nuclear power plants, water from the primary cycle also shows a degree of radio-chemical contamination. Water used as a coolant shows mostly thermal contamination. Greatest load exists in the chemical oxygen demand for the COD_{Cr} (dichromate) indicator, and insoluble substances (IS).

Waste water discharged by energy production in 2008 (electricity production and distribution)

Waste water from electricity production	Volume (thousand $m^3.y^{-1}$)	IS ($t.y^{-1}$)	BOD_5 ($t.y^{-1}$)	COD_{Cr} ($t.y^{-1}$)	ENP_{uv} ($t.y^{-1}$)
Treated	14 459.964	179.520	23.577	183.542	0.795
Untreated	9 908.049	75.624	3.338	18.851	0.331
Subtotal	24 368.013	255.144	26.915	202.393	1.126
Waste water from heat production					
Treated	1 090.033	16.453	1.804	23.242	0.175
Untreated	1 098.305	2.339	0.000	1.770	0.011
Subtotal	2 188.338	18.792	1.804	25.012	0.186

Source: SHMI

- **Waste from electricity production and gas management**

In 2008, the SE company, Inc. produced total volumes of 983 491 tons of waste of all categories, including 99.9 % from the „other waste“ category. Considering the fuel base, dominant are thermal power plants burning fossil fuels. Besides these key technology waste types, there are generated also other industrial waste types in a lesser degree, including especially those from auxiliary operations, maintenance and repair facilities, and municipal waste processing facilities.

The SPP Inc. company produced 4 131 tons of waste in 2008, including 968 tons of other waste, and 3 163 tons of hazardous waste.

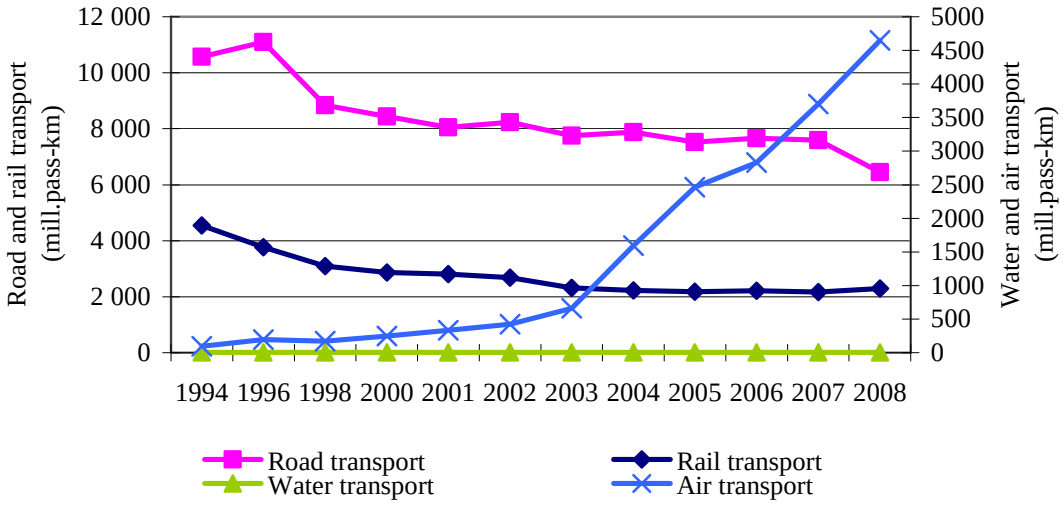
Transport

- **Passenger and freight transport**

In the area of road and railway passenger transport, the trend of long-term drops in transported passengers and total transport performances continued. Compared to previous year, reduction in modal split in road passenger transport was more than 15 %, in case of the railway transport the increasing was even by more than 6 %. Modal split in water passenger transport dropped by more than 25 %. Increasing trend in the number of transported persons as well as modal split, continued in air passenger transport (for the number of transported persons the increase is by 36 %, and in modal split it is by 25 %, compared to 2007).

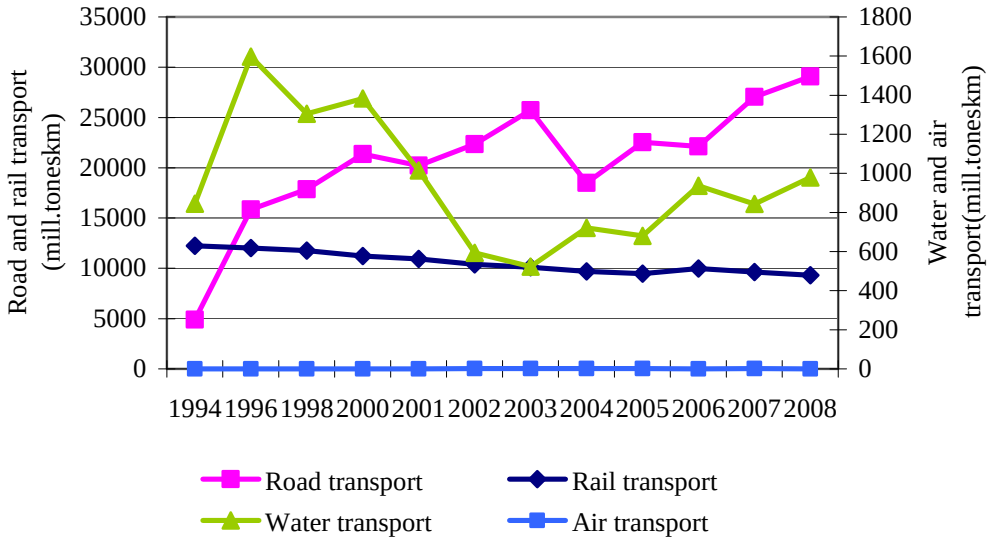
Transport of goods and modal split in road freight transportation grow continually. In 2008, modal split by road freight transport increased by more than 7 % compared to 2007, while modal split by railway cargo transport in 2008 dropped by 8 %, compared to the previous year (compared to 1993, the reduction is by more than 35 %). Compared to the previous year, modal split in aquatic freight transport in 2008 increased by 15 %. Modal split and freight transport in the area of air transport showed a significant reduction compared to 2007 (freight transport dropped from 1 318 t to 7 t, and modal split from 1 219 thous.tkm to 19 thous.tkm).

Passenger transport demand by mode (mill. pass-km)



Source: SO SR

Freight transport demand by mode (mill. tkm)



Source: SO SR

MHD companies of Bratislava, Košice, Prešov, and Žilina operate the municipal mass passenger transport (MHD). In 2008, lingered decreasing in the number of carried passenger. Over the period of 15 years (1993-2008), there was reported a 23.8 % decrease in the number of carried passengers. Buss transportation has over the monitored time period been the major player in passenger transport, followed by tram and trolley buss transportation.

Indicators of city transport

Indicator	1993	1997	1999	2002	2003	2004	2005	2006	2007	2008
Total number of transported passengers (ths.)	525 744	527 662	485 472	370 018	394 465	383 118	395 064	400 673	403 466	399 425
Trams										
Transported passengers (ths.)	188 768	139 668	117 714	96 553	104 560	104 391	109 101	109 836	109 705	107 080
Seat kilometres (mill. km)	2 734	1 301	1 888	1 780	1 764	1 818	1 822	1 797	1 792	1 788
Trolleybuses										
Transported passengers (ths.)	43 346	74 020	71 934	54 707	59 034	57 688	58 032	59 071	60 655	62 038
Seat (mill. km)	717	796	1 039	1 048	1 110	1 103	1 075	1 085	1 104	1 099
Buses										
Transported passengers (ths.)	293 629	313 974	295 824	218 758	230 871	221 039	227 931	231 766	233 106	230 307
Seat (mill. km)	4 998	3 146	4 638	3 990	3 899	3 881	3 846	3 823	3 839	3 826

Source: SO SR

- **Number of vehicles**

In 2008, total number of motor vehicles grew by 168 357 pcs compared to 2007. This means an increase by 32 % over the monitored time period. Total number of motor vehicles in 2007 over the period on 1993 - 2007 grew by 27 %. Major increase in the number of motor vehicles in 2008 was recorded in the categories of heavy trucks and pickup trucks (grew by 123 %, compared to 1993), and passenger cars (grew by 55 %, compared to 1993). Number of transport vehicles in railroad and water

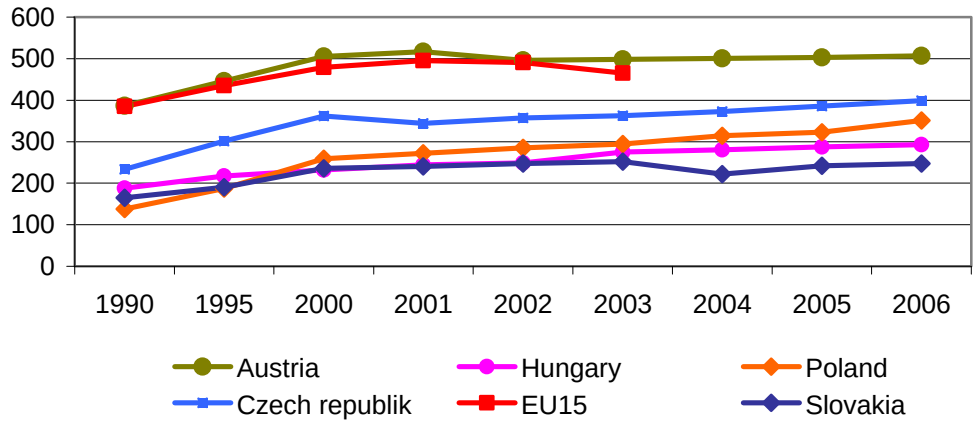
transport types (being the most environmental-friendly transport modes for passengers and goods) dropped by appr. 24 % over the last 12 years.

Number of motor-vehicles by individual types (pcs)

Total number of vehicles	1993	1998	2000	2003	2004	2005	2006	2007	2008
Passenger cars	994 933	1 196 109	1 274 244	1 356 185	1 197 030	1 303 704	1 333 749	1 433 926	1 544 888
Trucks and Pick up vans	101 552	111 081	110 714	142 140	140 395	160 089	172 781	196 141	227 218
Special vehicles	46 121	43 690	39 188	32 033	22 672	22 648	18 708	18 983	19 675
Road tractors	*	1 721	3 281	8 851	11 435	14 141	16 475	19 556	21 444
Buses	12 655	11 293	10 920	10 568	8 921	9 113	8 782	10 480	10 537
Tractors	65 150	63 448	64 351	61 690	44 080	46 544	43 888	44 098	45 387
Motorcycles (excl. small)	81 263	100 891	45 647	48 709	51 977	56 366	58 101	63 897	70 318
Trailers and Semi-trailers (included bus)	167 174	191 241	201 269	218 517	170 491	188 411	188 256	199 329	211 555
Others	-	-	2 226	1 161	-	101	535	3 414	7 159
Total	**1 468 848**	**1 719 474**	**1 751 840**	**1 879 854**	**1 647 001**	**1 801 117**	**1 841 275**	**1 989 824**	**2 158 181**

[1] in 1993-1996 included among special vehicles, since 1997 newly-purchased and monitored independently Source: SO SR

Comparison in the trend of the number of personal motor vehicles per 1 000 inhabitants in selected countries



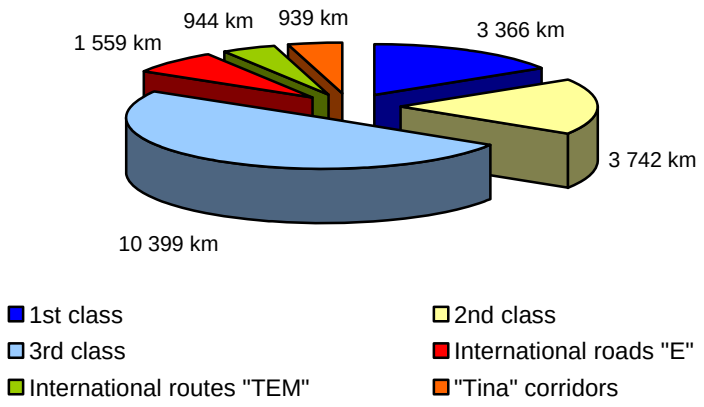
Source: Eurostat

- **Transport infrastructure**

In 2008, the SR transport network included 17 907 km of roads and motorways. Highways represented 384 km of the network and length of local communications was 25 942 km. The length of railways was 3 623 km, with 1 577 km of electrified tracks. The length of navigable watercourses remained unchanged at 172 km, with channel length of 38.45 km.

In Slovakia there are no modern transit points between railway and road freight transportation - intermodal transportation terminals, which, connected to the logistic centres, would allow for transportation of goods from the road freight transportation to railways transportation. Existing container translating sites in Slovakia do not comply with the new technological requirements by international trade.

Share of the length of individual road categories in Slovakia in 2008 (km)



Source: SO SR

- **Demand of transport on the utilisation of resources**

Final energy consumption in the transport sector over the period of 15 years has more than doubled itself. Overall consumption of liquid fuels (97 %) represents the greatest share of energy consumption in the transport sector on the overall energy consumption, while the share of solid fuels, gaseous fuels and electricity overall consumption remains small. Road transport shows the greatest share on the overall energy consumption in the transport sector (95 %). On the contrary, proportion of the end electricity consumption in the sector of transport is by the railway transport (95%), while the end consumption of liquid fuels shows small proportion of the railway transport.

- **Impact of transport on environment**

Over the recent years, important changes in the SR were introduced by a significant increase in the number of motor vehicles. Corresponding changes to the transport situation were dominant mainly in cities and residential zones, where there is an increased load on environment and public health.

Action plan of the European Commission of 2001 plans with a 20 % substitution of petrol and diesel with alternative fuels by 2020. Biofuels and natural gas are also of interest.

- **Emissions from transport**

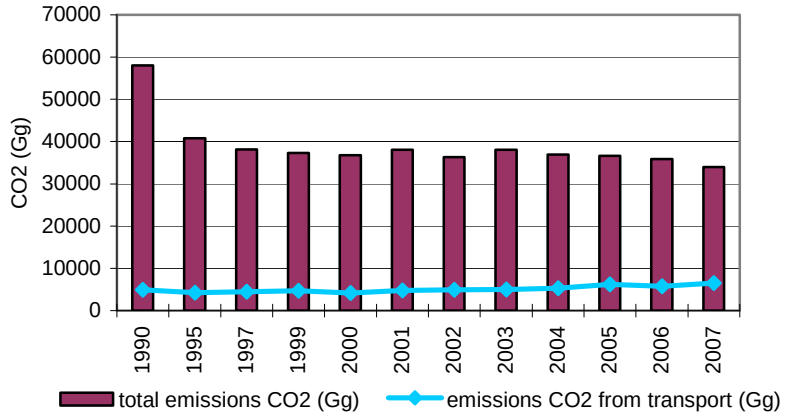
In terms of transport's share on total emissions of the assessed pollutants for 2007, significant is transport's share on CO emissions – 31 %, 43 % in case of NO_x and 21 % in case of NM VOC. Solid pollutants represented 26 % of all emissions in 2007, while the SO_2 emissions showed 0.35 %.

Transport's share on heavy metal emissions is approximately 2.7 %, with copper showing the greatest share on heavy metal emissions by transport (8.21 %) followed by zinc (3.08 %), and lead (3.06 %). Similarly, in case of other heavy metals there was a slight increase in the values of the recorded emissions, compared to the previous year.

Transport's share on total greenhouse gases emissions is approximately 15 %, with the CO_2 share of 19.0 %, and the N_2O share of 9.0 % being among the most dominant.

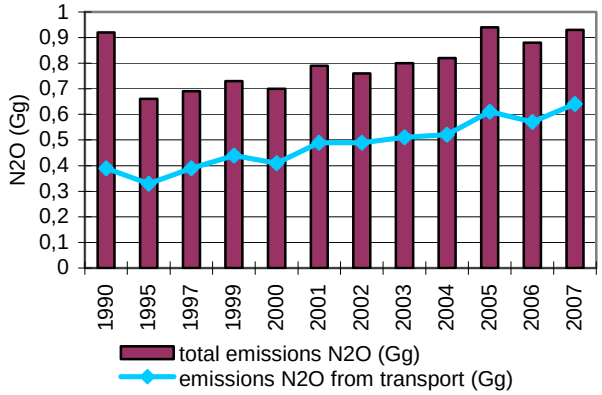
Road transport shows major share on total transport emission production. Share of other types of transport on individual pollutants is very small.

Trend in the greenhouse gas emissions - CO_2 from traffic operations compared to total CO_2 emissions in Slovakia (Gg)



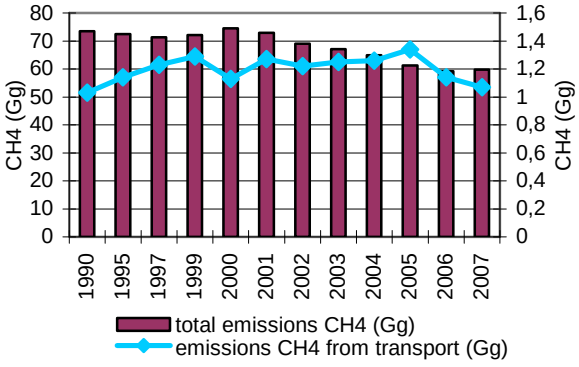
Source: SHMI

Trend in the greenhouse gas emissions - N_2O from traffic operations compared to total N_2O emissions in Slovakia (Gg)



Source: SHMI

Trend in the greenhouse gas emissions – CH_4 from traffic operations compared to total CH_4 emissions in Slovakia (Gg)



Source: SHMI

- **Waste from transport**

In 2008, there was 175 233 tonnes of waste generated in the area of transportation. This included 61 207 tons of hazardous waste, and 114 026 tons of other waste. Increase in 2006 was caused by recording about 2 273 000 tons of excavated soil from ground works when building the Sitina tunnels in Bratislava.

- **Traffic accident rate**

There was a slight reduction in the number of traffic accidents in 2008, compared to the previous year. The same trend exists in traffic accidents analysis, with reduced number of traffic casualties, heavily injured, and injured, compared to 2007.

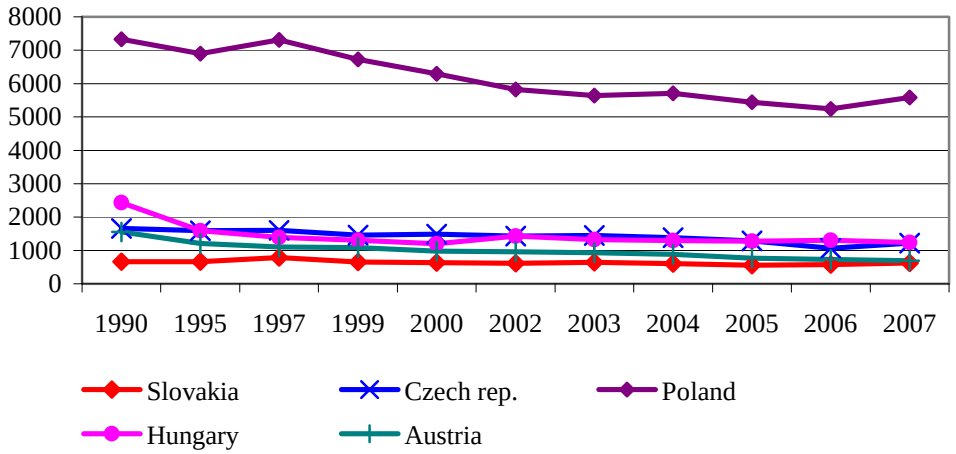
However, over the monitored period of 1993-2008, the number of traffic accidents increased by 15 %.

Trend of traffic accidents in SR

Indicators		1993	1999	2000	2002	2003	2004	2005	2006	2007	2008
Traffic accidents	Number of accidents	50 159	55 683	57 060	60 304	61 233	59 991	62 040	61 071	59 008	50 930
	Killed	584	647	610	645	603	560	579	627	558	626
	Heavily injured	2 736	2 684	2 213	2 163	2 157	1 974	2 032	2 036	1 806	2 205
	Lightly injured	8 682	8 782	8 050	9 158	9 033	8 516	8 660	9 274	9 234	7 891

Source: MoI SR, SO SR

Number of people killed in road accidents – international comparisons



Source: EUROSTAT

Agriculture

♦ Economy of agriculture

In 2008, the gross domestic product from agriculture was 50 165 mil. **€, representing a year-to-year reduction by 2 100 mil. € compared to 2007.**

♦ Structure of agricultural land

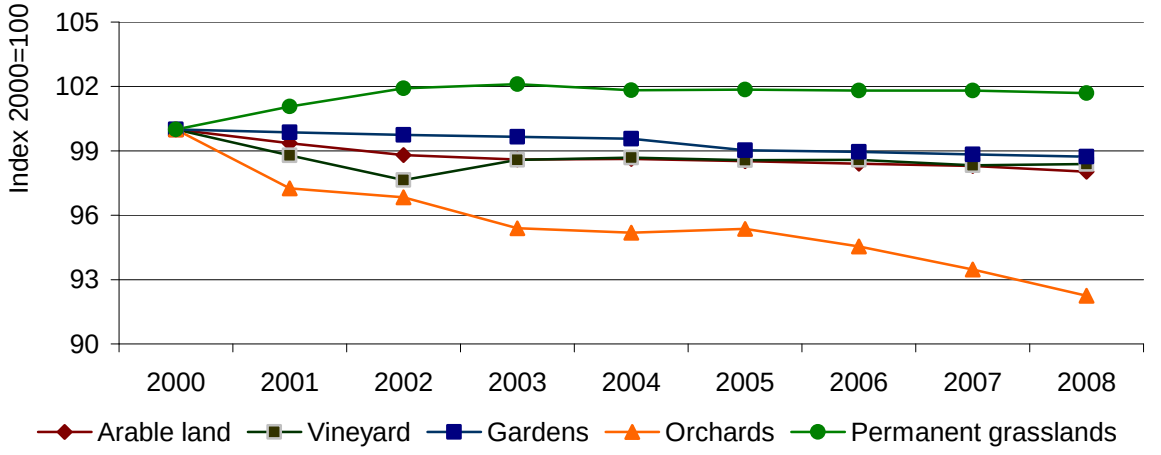
In 2008, **total area of agricultural land** in the SR was 2 423 478 ha. **Loss** of agricultural land including the arable land transfer to forestland, non-agricultural and non-forested land in 2008 was **5 524 ha.** Size of arable land per one inhabitant in 2008 was **0.2627 ha.**

Structure of the agricultural land (state to the date 31st December 2008)

Type of land	Area(ha)	Share of agricultural land (%)
Agricultural land total	2 423 478	100.00
Arable land	1 421 852	58.67
Hop-fields	520	0.02
Vineyards	27 258	1.12
Gardens	76 636	3.16
Orchards	17 360	0.72
Permanent grassland	879 853	36.31
Total area of SR	**4 903 704**	**-**

Source: GCCA SR

Agricultural land fund structure after the year 2000

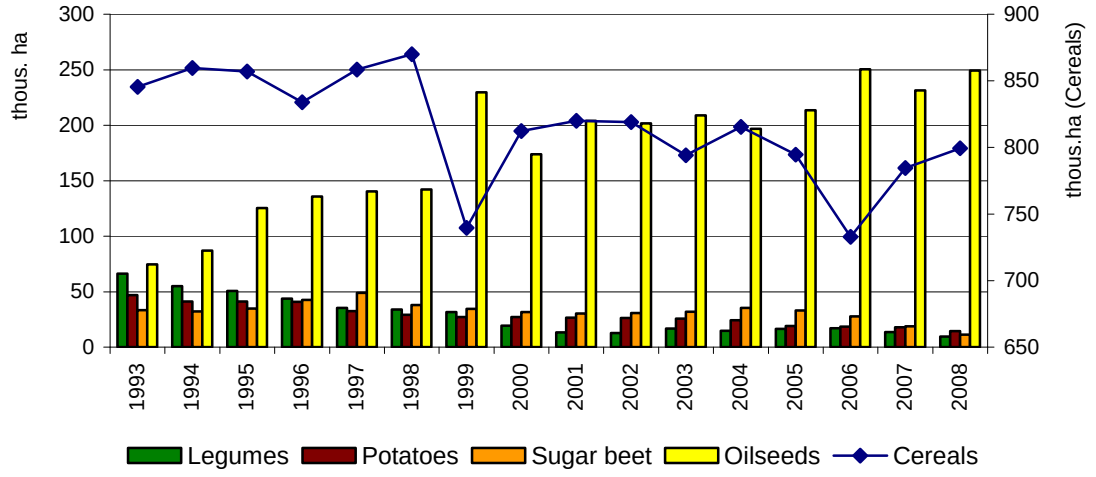


Source: GCCA SR

♦ Plant production

In 2008, harvest areas in most agricultural crops **decreased from the previous year,** especially in sugar beet, legumes, and potatoes. The year-to-year increase was in harvest areas of cereals and oilseeds.

Harvested areas of agricultural crops



Source: SO SR

Compared to 2007, **genetic diversity** (representated varieties of agricultural crop cultivated in the SR) in 2008 shows **an increase** in all mentioned crop categories, with the exception of fodder beet.

Number of agriculture plant's varieties in the SR

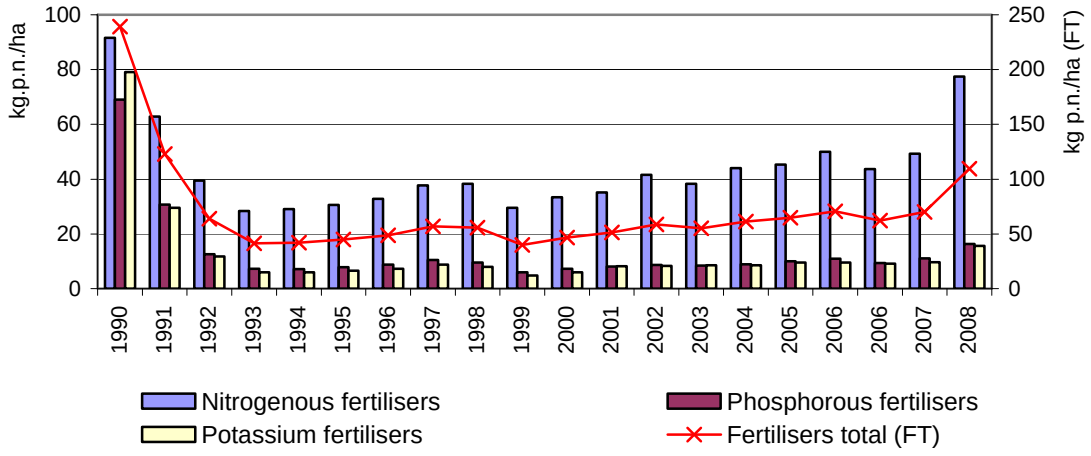
Agricultural plant	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Winter wheat	22	23	24	25	28	28	34	37	41	45	57	75	83	84
Winter barley	11	8	9	10	11	11	13	14	11	14	14	20	21	24
Spring barley	26	27	24	22	23	24	21	24	28	29	30	36	41	47
Potatoes	60	72	70	67	69	75	78	81	90	103	101	109	112	114
Rapeseed	14	12	12	9	14	16	19	22	25	32	29	35	41	52
Sugar beet	40	52	58	61	63	52	53	42	42	38	41	47	56	68
Fodder beet	16	13	12	6	8	8	8	8	7	6	6	6	6	6

Source: RIPP

Fertiliser consumption

In 2008, consumption of **fertilisers** was 109.4 kg of pure nutrients per hectare of agricultural land.

Fertilisers consumption in Slovakia (kg pure nutrient/ha)

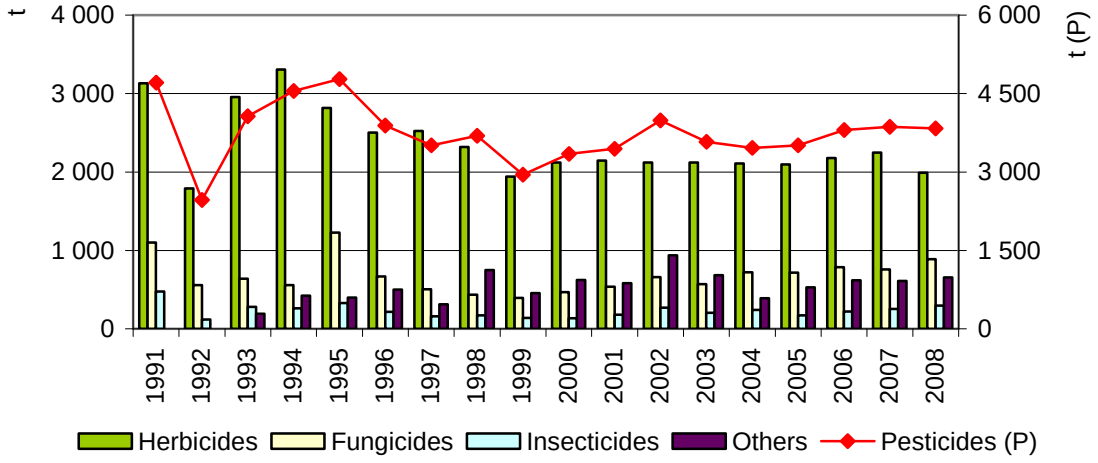


Source: CCTIA

Pesticides consumption

Compared to 2007, total consumption of pesticides in 2008 decreased by 31 t. Altogether, 3 834 t of pesticides were applied, including 1 991 t of herbicides, 887 t of fungicides, 298 t of insecticides, and 658 t of other pesticides.

Pesticides consumption in Slovakia (t)

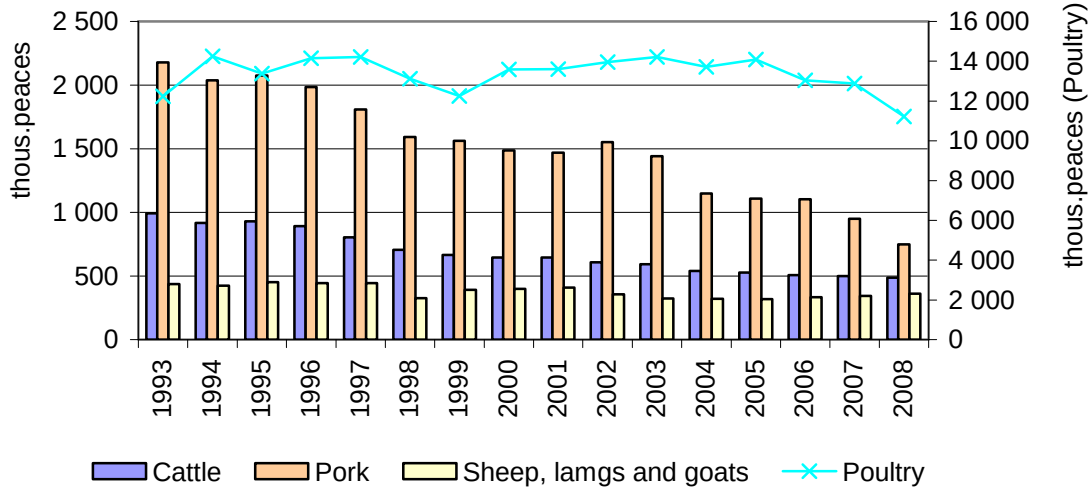


Source: CCTIA

♦ **Animal production**

In 2008, numbers of major livestock categories again dropped, i.e. cattle, pork, poultry, with the exception of the sheep, lambs and goats, which showed a positive growth in numbers.

Number of livestock in Slovakia (thousand peaces)



Source: SO SR, MoA SR

Genetic diversity expressed by number of livestock in the SR decreased from the previous year in cases of pork and goats.

Number of livestock breed in the SR

Breed	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Cattle	5	5	5	5	6	6	11	11	11	11	11	11	12	11	11	12
Pork	15	15	15	15	15	15	16	15	13	11	11	11	11	8	8	7
Sheep	8	9	10	9	9	12	12	13	12	12	13	13	13	13	13	15
Goats	2	2	2	2	2	2	2	2	2	2	2	2	3	2	2	3

Source: RIAP

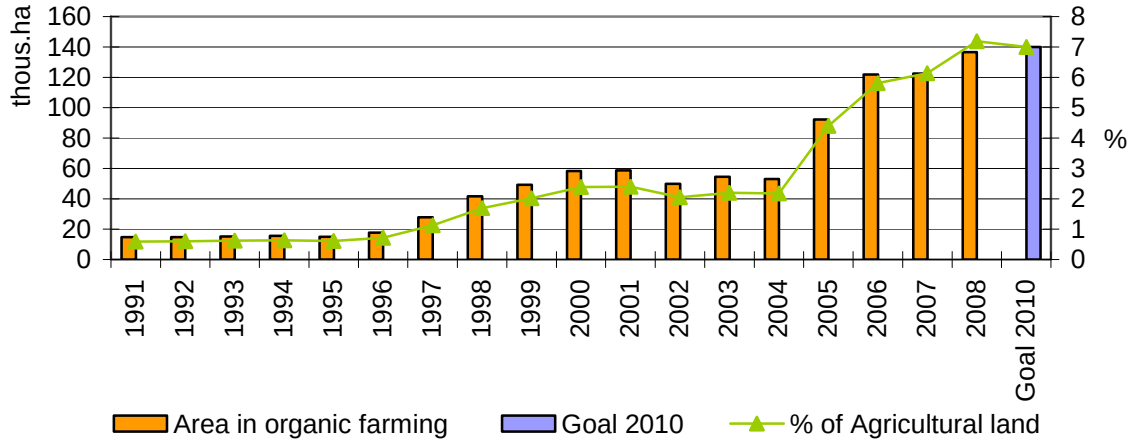
♦ **Melioration**

After 2000, there was a falling trend in the size of irrigated territories, analogous as utilisation of water for irrigation purposes with certain fluctuations. In 2008, there was 15 908 ha of irrigated agricultural land.

♦ **Organic farming**

In 2008, the system of organic farming in the SR included 349 subjects farming on 136 669 ha of agricultural land, which is 7.19 % of total agricultural land. Compared to 2007, the organic farming area increased by 14 080 ha.

Trend in the organic farming area



Source: CCTIA

♦ **Agriculture demands in exploitation of resources**

In 2007, there was a year-to-year reduction in the consumption of liquid and gas fuels, and electricity. On the contrary, increased consumption was recorded on a year-to-year basis in the consumption of solid fuels and heat.

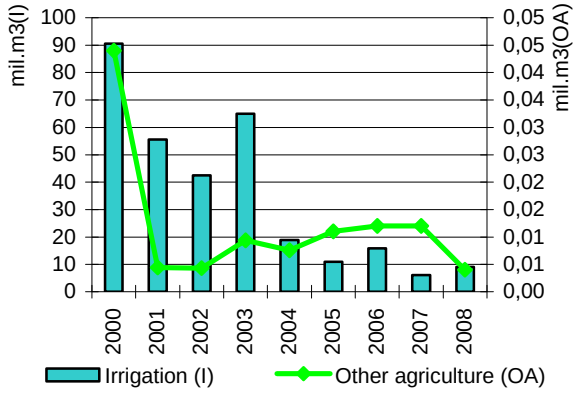
Consumption of selected fuel types, heat, and electricity in agriculture (TJ)

Kind of fuel	2002	2003	2004	2005	2006	2007
Solid fuel	133	131	82	65	55	58
Liquid fuel	2 665	2 987	3 250	3 417	3 000	2 874
Gas fuel	1 869	3 261	1 781	1 670	1 263	1 137
Heat	270	300	181	179	168	209
Electricity	1 850	3 294	1 530	1 411	1 325	1 278

Source: SO SR

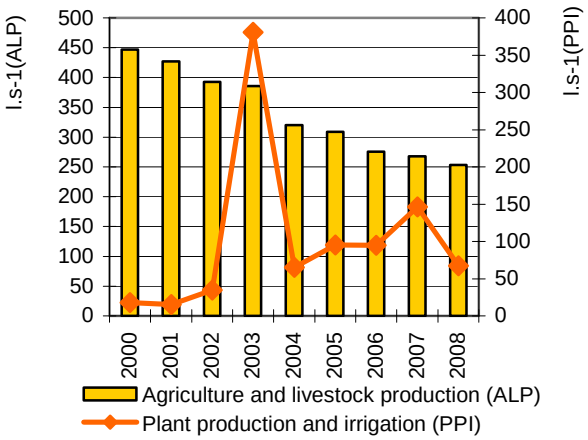
In 2008, compared to the previous year, there was a slight **increase in ground water volumes** used in agriculture for irrigation purposes. Other agriculture sectors used greater volumes of surface water. **Volumes of ground water in agriculture dropped** in 2008, compared to 2007.

Trend in surface water use in agriculture



Source: SHMI

Trend in groundwater use in agriculture



Source: SHMI

♦ **Production of renewable energy from agriculture**

Despite its relatively high potential in Slovakia, use of the biomass for energy purposes is not satisfactory from the perspective of including energy-yielding produce into sowing technologies, as well as production of energy from biogas. Technological equipment is lacking in the area of implementation. In 2008, there were 4 biogas production facilities in operation in Slovakia. Biogas was produced from cattle manure at the volume of the 576 thous.m^3.

Total annual production of agricultural biomass suitable for heat production in Slovakia

Crop type	Area (ha)		Yield of biomass (t/ha)		Production of biomass (t/year)	
	2007	2008	2007	2008	2007	2008
Thick-sown cereals - total	612 136.70	629 689.28	3.13	4.27	766 395.20	1 075 509.30
Maize	157 255.60	154 237.60	5.56	11.44	874 341.14	1 764 478.10
Sunflower	64 746.20	74 933.60	4.44	5.58	287 473.13	418 129.50
Rapeseed	153 830.50	162 870.50	4.18	5.22	643 011.50	850 184.00
Orchards	7 329.70	9 389.20	3.50	3.50	25 654.00	32 862.20
Vineyards	15 902.00	15 722.00	1.50	1.50	23 853.00	23 583.00
Flight from permanent grasslands	74 476.60	79 958.30	2.00	2.00	148 953.20	159 916
Total	**1 085 677.30**	**1 126 800.48**	-	-	**2 769 681.17**	**4 324 662.70**

Source: RIPP

Note: In calculating biomass for densely-sown grains we considered average yealds of cereals in the corresponding year in Slovakia and ratio of grain and straw to total biological yeald (ratio of grain and straw was 1:0.9).
To produce heat, it is possible to use approximately 40 % of straw from densely-sown cereals. About 60 % of produced straw is added to forage rations for livestock, part of it is used for bedding, and another part is used to balance C in soil. For this reason the table shows only the value of usable straw production potential to produce heat. For maize, the calculated grain – to – corncomb ratio is 1:1.4, for sunflower it is 1:2.2, for rape seed it is 1:2.

♦ **Impact of agriculture on environment**

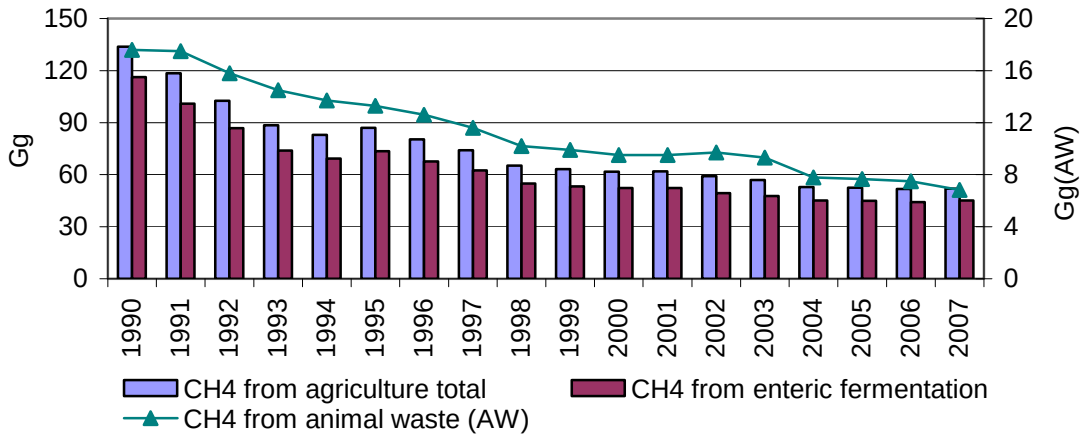
Agriculture is one the important environmental polluters. It mostly contributes to green house gases emissions, production of waste, discharge of waste water, and other.

Impact of agriculture on air and global climate

Share of agriculture on total methane production is systematically falling, due to decreased number of livestock. In 2006, agriculture produced 51.7 thous. tons of methane. 51.92 thousand tons of methane produced by agriculture in 2007 represented an increase by 0.23 tons, compared to 2006.

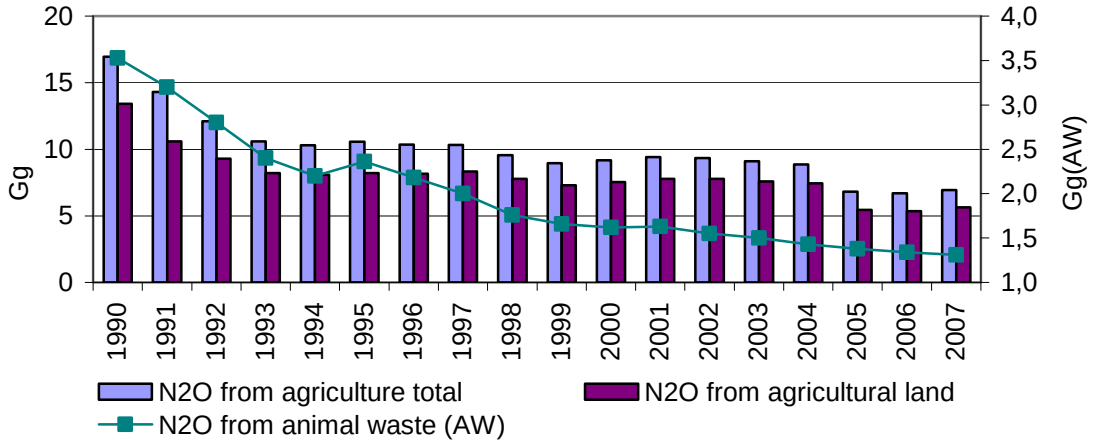
Production of nitrous oxide by agriculture was in most aspects decreasing after 1990. Only after 6.95 thousand tons of nitrous oxide produced by agriculture in 2007, the figures increased by 0.26 tons, compared to 2006.

Trend in methane emissions from agriculture according to type of activity



Source SHMI

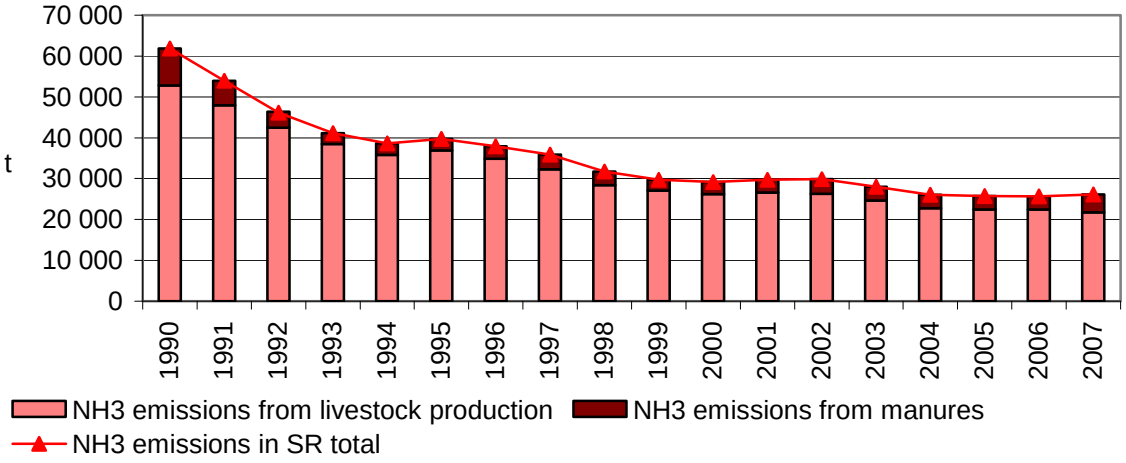
Trend in nitrogen monoxide emissions from agriculture according to type of activity



Source SHMI

Agriculture is the biggest producer of ammonia (NH_3). Only after 26,089 tons of ammonia were produced by agriculture in 2007, the figures increased by 444 tons, compared to 2006.

Trend in ammonia emissions from agriculture



Source: SHMI

Impact of agriculture on water quality and quantity

In 2008, there was 478 535 m^3 of discharged wastewater related with agricultural activities.

Discharged amount of waste water in SR related to agriculture in 2008

Waste water from agriculture	Volume ($m^3.yr^{-1}$)	Insoluble compounds ($t.year^{-1}$)	BOD_5 ($t.year^{-1}$)	COD_{Cr} ($t.year^{-1}$)	ENP ($t.year^{-1}$)
Treated	171.405	5.305	5.759	12.734	0.000
Untreated	307.130	0.000	0.000	0.000	0.000
Total	478.535	5.305	5.759	12.734	0.000

Source: SHMI

Production of waste in agriculture

In 2008, there were 742 270.46 tons of total waste produced in agriculture, which is 92 773.01 tons more than in 2007. Of total produced waste other waste was 700 205.66 tons, which is 63 343.86 tons more than in 2007. Produced hazardous waste in 2008 was 42 064.80 tons of total waste volumes, which is 29 429.15 tons more than in 2007.

Forestry

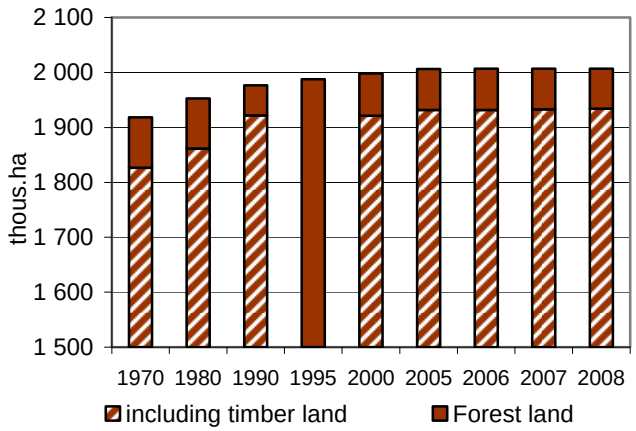
♦ **Share of forestry on GDP production**

The GDP value for the sector of forestry in 2008 grew since the previous year by 0.1 bill. SKK, (8.6 bill. SKK in total); however, its share on the overall GDP fell by 0.04 percentage point. The share would be higher (as much as approximately 3 %) if the public benefits of forests and the wood-processing industry (which are presently not considered) were accounted for.

♦ **Structure of forest land**

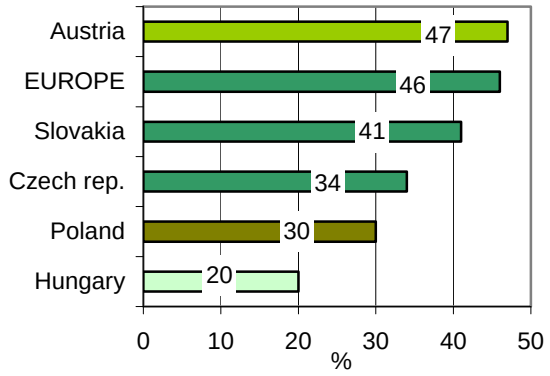
Slovak Republic belongs among those European countries that have the greatest share of forestation. In general, we can see a long-term rising trend in the share of forest land. **Forest land** size in 2008 grew by 1 115 ha, as compared to 2007, which resulted in the growth of forestation in Slovakia by **41 %** (142 ha in 2007). Timber land in 2008 represented app. 96.3 % (1 933 591 ha) of total size of forest land and similarly, there has been a gradual increase in its size. Calculated to the number of inhabitants, this represents **3.71 km^2 per 1 000 inhabitants.**

Trend in forest land and timber land



Source: NFC

Comparison of forestation in selected countries



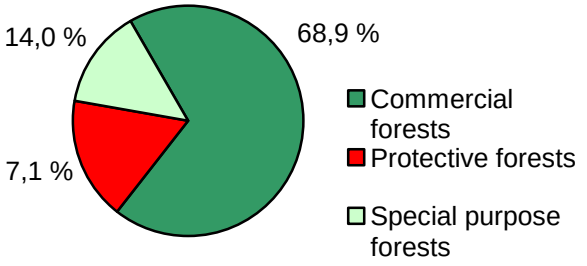
Source: NFC, FAO 2009

State organisations of forest management **administer 55.1 % of forests,** which is 14.9 % more than in the state ownership. Compared to 2003, proportion of forests utilized by **private** entities grew from 5.9 % to 7.2 %. **In 2008**, there was **13 830 ha** of forest land returned to the original owners. Forest land with no fully identified or documented ownership claims, or with no claims yet received from the entitled persons, take up **8.2 %** of total SR forest land.

Due to the increased demand for public benefit functions of forests, there was a gradual increase in the size of protection forests (from 7.9 % in 1960 to the present level of 17.1 %, the size is stabilized since recent years) and also forests for unique purposes (forests affected with pollution were removed from this category, which caused reduced size of these forests). Majority of production forests belong to

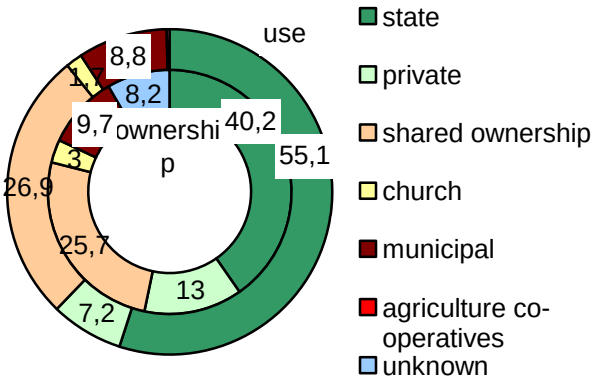
poly-functional forests that also have other associated ecological and social functions, while only 9.5 % of forests are located in purely production type.

Spatial representation of forest categories in 2008



Source: NFC

Structure of forest ownership and use



Source: NFC

♦ **Forest composition by species and age groups**

In terms of **forest composition by species**, there is a positive share of broad-leaved trees (59.7 %) compared to coniferous trees (40.3 %). Our forests contain also **introduced tree species.** In total, these represent 25 species and their size has grown by 51.4 ha (however, due to increased size of all tree species their proportion dropped by 0.23 %, down to 2.85 %) *Robinia pseudoacacia* is the most invasive tree type. Other tree types of concern include *Negundo aceroides* and *Alianthus altissima.*

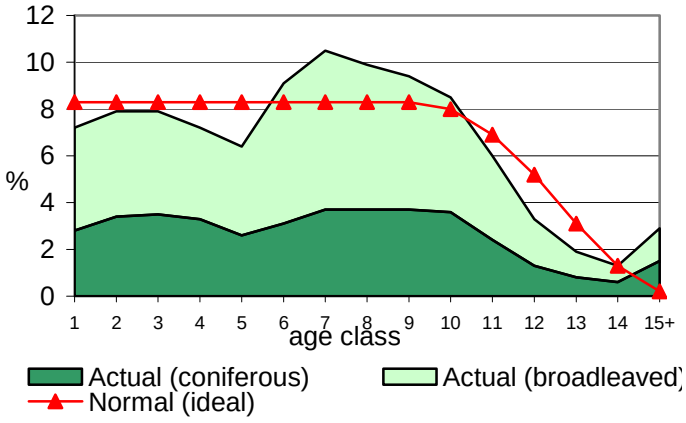
Real **forest age composition** of SR partially differs from the normal (theoretical) one. There are 582 529 ha of forests located in the 1-4 age category, 876 739 ha are located in the 5-9 age category, and 463 398 ha are located in the 10 and more age category, with clearings taking up the area of 10 923 ha.

Comparison of present tree species composition in the forest of the SR with original and target-perspective one

Tree species	Tree species composition (%)		
	Original	Target - perspective	Actual
Spurce / Fir	4.9 / 14.1	18.2 / 6.7	25.7/4.0
Pine / Larch	0.7 / 0.1	4.2 / 6.7	7.1/2.4
Other coniferous	0.9	1.2	1.1
Coniferous together	**20.7**	**37.0**	**40.3**
Oak	19.9	17.7	13.3
Beech / Hornbeam	48.0 / 2.6	35.9 / 0.9	31.4/5.8
Maple /Ash	3.2 / 0.4	3.0 / 0.5	2.1/1.5
Robinia / Birch	- / 0.1	0.1 / 0.2	1.7/1.4
Elm / Alder	0.9 / 0.3	1.2 / 0.3	-/0.8
Poplar / Willow	0.1 / 0.1	0.2 / 0.1	0.9/-
Other broadleaved	3.7	2.9	5.8
Broadleaved together	**79.3**	**63.0**	**59.7**

Source: NFC

Age composition of the forest



Source: NFC

♦ **Forest transport network**

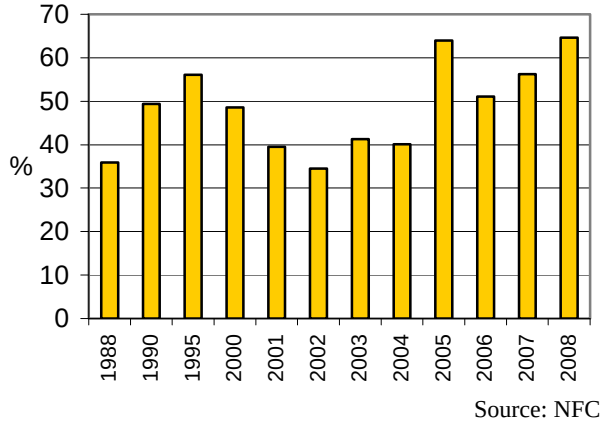
Average density of forest road network in Slovakia is 18.6 m.ha^{-1}. Length of outgoing forest roads in 2008 was **37 165 km**.

♦ **Forestation and standing volume**

Compared to 2007, total scope of forest renewal grew by 1 704 ha, to the **present size of 15 402 ha,** of which natural renewal grew by 747 ha (to reach 5 418 ha) with its share representing 35.2 %. Growth of clearing areas by 2 846 ha in 2008 is a negative trend.

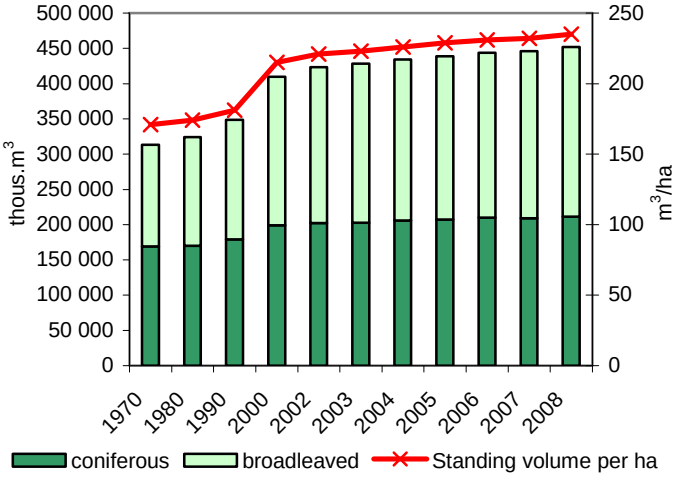
Standing volume in 2008 reached **452.1 mil. m^3** of barkless wood matter, with average stock per hectare reaching 235 m^3. Still increasing volume of wood stock is mainly influenced by the existing age composition of the Slovak forests, with abnormally high share of most-incremental medium age levels. **Total current increment** decreased since 1990 (through changes to the age composition) and is 11 786 thous. m^3. This trend may be considered linear since 2000.

Trend in share of incidental felling on total volume of timber felling in SR



Source: NFC

Trends in total standing volume



Source: NFC

♦ **Timber felling**

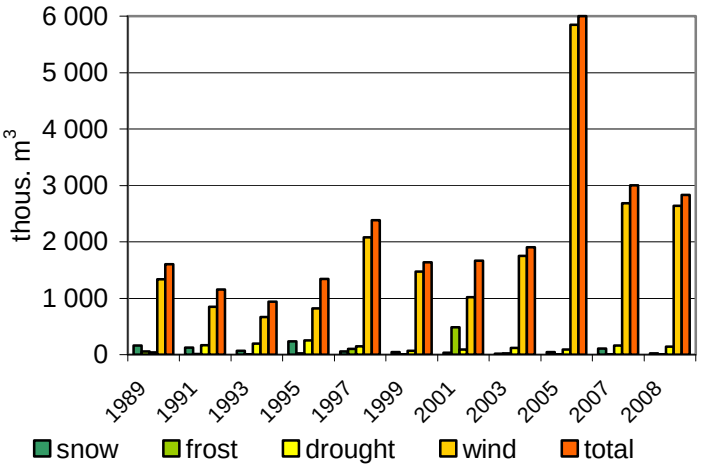
Timber felling in the Slovak forests shows an increasing tendency over a long range. In 2008, it was **9 467.1 thous. m^3**, which is by 1 100 thous.m^3 more than in 2007. **Incidental felling** included **64.6 %** of total anticipated harvested timber (including 87.5 % of harvested coniferous trees). Especially, due to high volumes of accidental felling, volumes of total timber felling under forest management plan in 2008 were exceeded by 26 %.

Natural conditions in the SR forests allow implementing the shelter wood system on about 60 % of timber land, selection harvest on about 10 %, and clear cutting on the remaining 30 % of timber land. **Intensity of forest resources utilisation** for this year is as much as 80.3 % (share of felling volumes and increment). At present, no more than 60 % of total current increment volume should be harvested.

♦ **Injurious agents and forests condition**

As a consequence of negative impacts of wind, snow, frost, drought, and unknown **abiotic factors,** there was **2 831.2 thous. m^3** of wood matter **processed** this year, with more than 93 % caused by the wind. Processed was 89 % of the wood matter, with 333 thous.m^3 remaining unprocessed.

Trend in damages caused by abiotic agents



Source: NFC

Forest damage caused by anthropogenic agents (m^3)

Agents	Affected	Processed
Immisions	200 021	169 547
Fires	7 654	3 250
Wood stealing	8 032	8 032
Other anthropogenic agents	3 478	3 478
Total	**215 707**	**180 829**

Source: NFC

Size of individual zones with pollution risk is **6 265 ha** of forests. In 2008, Slovakia registered **182 forest fires** on the size of **118 ha,** causing **27 mill. SKK** in damages, which, compared to 2007 (460 fires), means a significant reduction. Most frequent causes included setting fires in open nature (44), burning of grass (30) and manipulation with open fire (20).

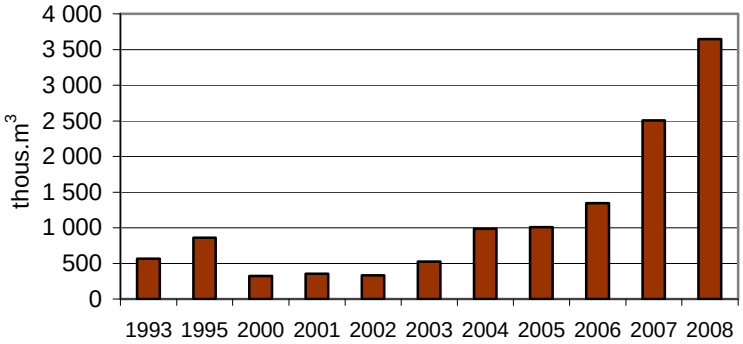
Of the **biotic harmful factors** of forest lands, bark-beetles and woodworms have the most dominant share on random incidental felling. **European spruce bark beetle** was the most significant harmful agent, with more than 86 % contribution to total affected wood matter. Since 1993, most wood matter damaged by bark beetles and woodworms was processed in 2008. Almost twice as much wood matter was not processed as in 2007, which is alarming in terms of woodworms prognosis for 2009. **Leaf-eating insects** in 2008 were in the latency stage, with their gradation expected as late as in 2013. Most significant **phyto-patogenic** harmful agent was *Armillaria,* which impacted 81 % of all wood matter attacked by phyto-patogenic organisms and which contributed to decomposition of spruce trees on acidic substrates in Kysuce, Orava, the sub-Tatras regions, in Spiš and Slovak rudohorie.

Forest damage caused by biotic injurious agents (m^3)

Phyto-pathogenic microorganisms	269.4 thous. m^3
Decays and tracheomycoses	39.3 thous. m^3
Leave-eating and sucking insects	587 ha
Bark beetles and woodworms	3 644.9 thous. m^3
Game	854 ha

Source: NFC

Trend of damages caused by bark beetles and wood borers



Source: SO SR

♦ **Forest condition monitoring and assessments**

National programme of **forest ecosystems health condition monitoring** was implemented also in 2008. The programme operated 112 permanent monitoring areas (PMA) within the 16x16 km network (extensive monitoring), and 7 research PMAs (intensive monitoring). Both monitoring levels are part of the European network of monitoring areas, in which presently participate 39 European countries.

Ratio of trees **in the 2-4 degrees of damage** is the determining factor for assessment of deterioration or improvement to the health condition of forests, with defoliation greater than 25 %.

Most damaged tree types included oak, spruce, larch, and fir. The least damaged were beech and hornbeam. Over the last twelve years, there has been an improvement in health condition, with the average defoliation of all tree types dropping below 25 %. Coniferous tree types have shown balanced values of average defoliation since 1996 (26.2 % - 28.3 %), for broad-leaf tree types, there are more fluctuations between individual years.

Results of forest condition monitoring in SR in 1987-2008

Year	Tree types	Representation of trees in various damage degrees in %							
		0	1	2	3	4	1-4	2-4	3-4
1987	Coniferous	11	36	41	11	1	89	53	12
	Broadleaves	26	47	22	5	0	74	27	5
	Total	19	42	32	7	0	81	39	7
1997	Coniferous	13	45	38	3	1	87	42	4
	Broadleaves	22	55	21	2	0	78	23	2
	Total	18	51	28	2	1	82	31	3
2000	Coniferous	18	44	35	2	1	82	38	3
	Broadleaves	29	57	13	1	0	71	14	1
	Total	25	52	22	1	0	75	23	1
2002	Coniferous	8	51	38	2	0	92	40	3
	Broadleaves	23	62	14	1	0	79	15	1
	Total	17	58	23	1	0	83	25	2
2004	Coniferous	4	60	35	1	0	96	36	1
	Broadleaves	16	64	19	1	0	84	20	1
	Total	11	62	26	1	0	89	27	1
2006	Coniferous	5	53	41	1	0	95	42	1
	Broadleaves	21	62	16	1	0	79	17	1
	Total	14	58	27	1	0	86	28	1
2007	Coniferous	5	58	36.1	1.1	0.3	95.3	37.5	1.4
	Broadleaves	19	65	14.9	1.7	0.0	81.5	16.6	1.7
	Total	13	61.8	24.0	1.5	0.1	87.4	25.6	1.6

2008	Coniferous	3	55.9	39.7	1.4	0	97	41.1	1.4
	Broadleaves	15	64.2	20.0	0.8	0	85	20.8	0.8
	Total	10	60.7	28.2	1.1	0	90	29.3	1.1

Description of damage degrees of monitored trees: Source: NFC

0 - defoliation of trees between 0 - 10 % no defoliation (healthy trees)
1 - defoliation of trees between 11 - 25 % slight defoliation (slightly injured trees)
2 - defoliation of trees between 26 - 60 % medium defoliation (medium injured trees)
3 - defoliation of trees between 61 - 99 % strong defoliation (strongly injured trees)
4 - defoliation of trees between 100 % dying and dead

Results of tree defoliation in selected European countries

Country	Number of assessed trees	Degree of injury				
		0	1	2	3+4	2+3+4
Czech Republic*	5 489	12.2	30.7	55.4	1.7	57.1
Hungary*	1 872	51.8	27.5	12.5	8.2	20.7
Poland*	9 160	23.8	56.1	19.4	0.8	20.2
Austria**	3 425	57.8	27.2	10.7	4.3	15.0
Slovakia	4 083	10.0	60.7	28.2	1.1	29.3
EÚ*	82 467	27.9	48.2	21.2	2.7	23.9

Source: NFC, FAO, 2008

Notes: * - data to 2007
** - data to 2006

♦ Hunting

There were **1 837 hunting areas** in Slovakia in 2008, including 33 game protection territories and 13 pheasant territories. Total size of the hunting territory is **4 529.5 thous. ha**.

Spring stocks of the cloven-hoofed game as of March 31, 2008 were higher than in the previous year.

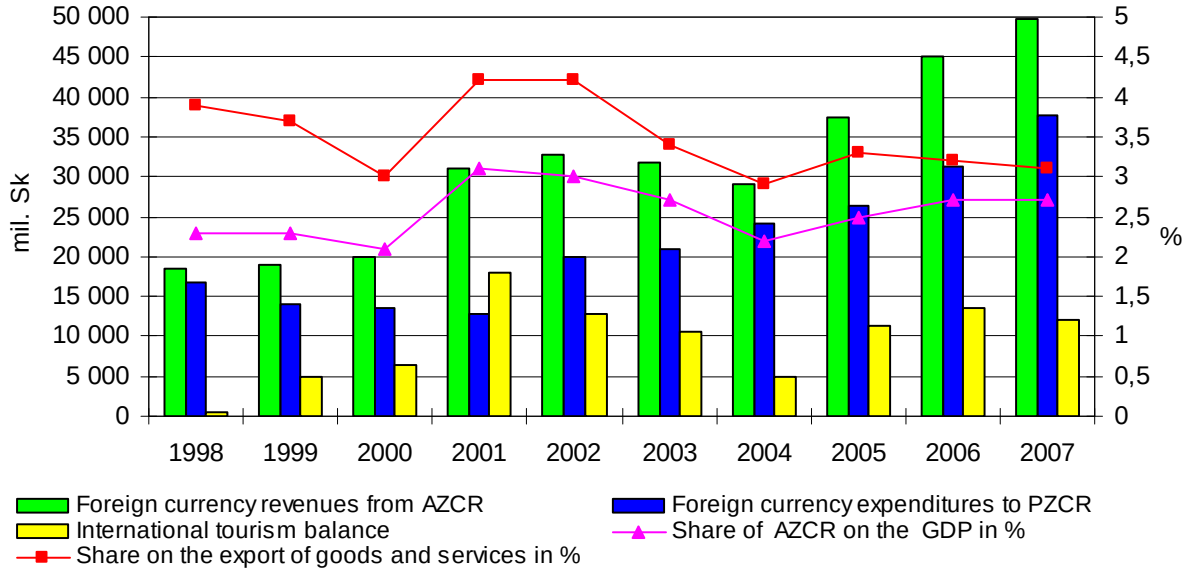
Shooting of clove-hoofed game in 2008 was higher than in the previous year, however, it should even be higher (the shooting plan was not met).

Spring stock of pheasant, rabbit, partridge and turkey increased. Numbers of **large predators** increased statistically. In terms of other **rare species** of animals, compared to the previous year, their numbers increased, excluding marmot. Hunting of rare game species is strictly regulated. Permitted shooting limit of **bear** was 42, while the actual number of shot animals was only 34. 121 wolves, 9 alpine chamois and 1 bison were shot.

Recreation and tourism

Notwithstanding their fluctuating characteristics, **foreign exchange revenues for active tourism balance** (AZCR) **in 1997-2002 were on the rise**; however, **during the period of 2002-2004**, **there was a reduction**, caused by major changes outside the sector (strengthening of the Slovak currency conversion rate, especially relating to the US dollar and Polish zloty, increased original VAT tax rate from 14 to 19 %) **In the period of 2005-2008, there was a recurrence in a very significant rise in revenues and tourism balance figures.**

Tourism and the consolidated balance sheet of the State, share on the GDP and export in 1998-2008



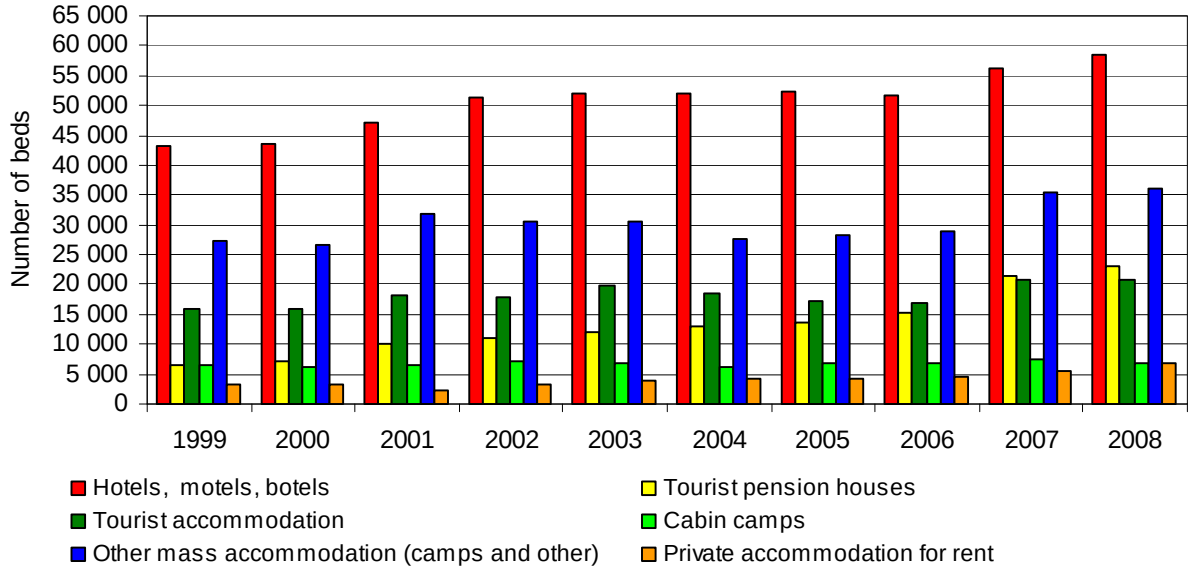
Source: SO SR

* - level of revenues in foreign exchange in 2001 is partially affected by transition to Euro toward the end of the year and the SR citizens placing foreign exchange on their foreign exchange accounts

♦ **Specific analysis of recreation and tourism**

Increase in the bed capacity of accommodation facilities in 1999-2003 can be assessed positively as this increase has been caused especially by increased numbers of more affordable small, environment friendly accommodation facilities – pensions and hostels. **In 2004-2006, there was a stagnation in the number of beds in all other categories of accommodation facilities, with the exception of beds in boarding houses and cabin settlements After 2006; however, there has been again a significant rise in the number of beds in all categories of accommodation facilities, especially in the case of boarding houses and private accommodation houses.**

Number of beds in accommodation facilities in the Slovak Republic in the years 1999-2008



Source: SO SR

Notwithstanding the fluctuating characteristics of statistical data and a slight growth over the period of **1997-2005, number of overnight stays is** still **stagnating.** Most importantly; however, **average number of overnight stays stagnates or decreases continually**. This relates to the attractiveness of the tourist destination and the level of development of its infrastructure. This is what influences the length of actual stays.

Number of overnight stays in accommodation facilities in the Slovak Republic in 1999-2008

Source: SO SR

♦ **Demand of tourism on exploitation of resources**

In terms of national economy, **tourism with its little demand on material resources does not represent a significant demanding sector.** This fact is especially important for a country like Slovakia, which depends much on export.

Demand of tourism on the exploitation of natural resources and land occupation is **important especially on the local** level. This phenomenon is caused by major seasonal differences in the number of tourists to individual tourist destinations. Compared to other economic activities, **it is not possible, for example, to supply data on the energy and material demand of tourism**, because of the lack of good data retrieving and collecting mechanisms to meet specific indicators. **Tourism** being a sector of economic activity **does not have high demands on water or fuel consumption.** These requirements; however, are more typical generally for major fluctuations between the main tourist season, and the low tourist season.

- **Environmental impact of recreation and tourism**

Intensity of visitor stays is not uniformly distributed throughout the territory. The most attractive but also potentially endangered tourist destinations, mainly due to the influence of mountain tourism, include mainly national parks. Sites for mountain tourism activities are concentrated within the Tatranský National Park (Roháčska valley in the Západné Tatry, and Mlynická, Mengusovská, Velická, Malá, Veľká Studená, and Skalnatá valleys in Vysoké Tatry), Nízke Tatry National Park (Demänovská and Jánska valleys, and northern slopes of Chopok, Bystrá valley, and southern slopes of Chopok), and Malá Fatra National Park (Vrátna valley). In terms of density of **marked biking trails and marked hiking trails,** the **most fragmented territories,** in consideration of their size, are areas of the **Pieninský National Park, NP Muránska Plane, and the NP Slovenský raj**.

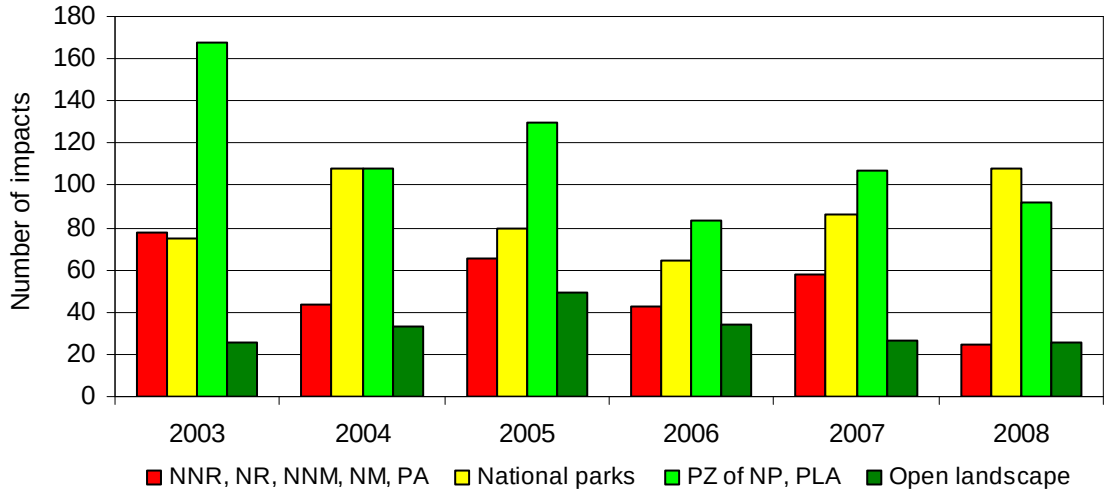
Continuing increase in the length of erosion-impacted hiking marked trails presents a significant environmental issue. These trails are **in the zone above the upper forest border and in precipices** where, due to extreme climate conditions, exist greatly deteriorated local conditions for regeneration of the soil and the flora. **Critical soil erosion** may be seen at marked hiking trails **in the territory of the national parks (NP) of Nízke Tatry,** (substantial erosion increase in 2006-2007), **the NP of Malá Fatra** (substantial erosion increase in 2002-2003), and **the Muránska Plane NP** (substantial erosion increase over the years 2004-2005). **In 2004-2008, significant increase in erosion of marked hiking trails** was recorded also **in the territory of the Tatras NP.**

Highest degree of endangerment of small-size protected areas from tourism-related activities exists in the following territories: Tatras National Park, NP Nízke Tatry, NP Malá Fatra, NP Pieniny, NP Slovenský raj, PLA Dunajské luhy /Danube marshes/, PLA Malé Karpaty /Small Carpathians/, PLA Strážovské hills, PLA Poľana, PLA Cerová hills, and PLA Vihorlat.

Although **all categories of protected territories together take up only about 18 % of the whole Slovakia's territory, they represent in total 60-80 % of the assessed impacts into nature and landscape** that require permission of a pertinent nature protection authority (especially the areas of

TANAP, Nízke Tatry NP, NP Slovenský raj, and NP Malá Fatra) In terms of the categories of protected territories, **most assessed impacts** over the period of 2004-2007 **always relate to protection zones within national parks, as well as protected landscape areas and national parks. Open landscape shows the least number of assessed impacts. Over the years of 2006-2007 the number of these impacts grew slightly, with the exception of open landscape. On the contrary, in 2008 there was a significant rise in the number of assessed impacts only inside the national park territories, while the number of these impacts significantly dropped in the territories of nature protection categories 4 and 5 (NNR, NR, NNM, PP, PA) and protection zones of NP and PLA.**

Number of assessed impacts in nature and landscape, related to activities in tourism in 2004-2008



Source: SNC SR