THE ENVIRONMENT IN YOUR POCKET 1 - 2009

CROATIAN ENVIRONMENT AGENCY

THE ENVIRONMENT IN YOUR POCKET

THE ENVIRONMENT IN YOUR POCKET I – 2009

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THE ENVIRONMENT IN YOUR POCKET

Introduction

Dear Readers,

It is our pleasure to present you the fifth edition of The Environment in Your Pocket, a publication that has enabled us to maintain the continuity of simple and brief presentation of the state of and changes in the environment in the Republic of Croatia.

Since its first publication, this booklet has gained numerous readers from different segments of society: students and teachers, environmental specialists and decision-makers, and numerous fans from the general public, which is becoming increasingly sensitive to environmental protection and preservation issues. The progress made in the environmental data collection, processing and analysis is illustrated by 26 indicators presented in this edition of the report, highlighting, in particular, the issues of health and safety, which are being included for the first time. Aware of the fact that physical health and the quality of life depend, among other things, on the state of the environment, its cleanliness or pollution, we believe that the data presented will be both useful and interesting to you.

Your interest in the status, trends and changes in the environment is a mandate to continue to provide reliable, comprehensive data and information about the environment by means of selected indicators, and thus continue to raise awareness of the need for the environment's protection and preservation.

Croatian Environment Agency

THE ENVIRONMENT IN YOUR POCKET

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THE ENVIRONMENT IN YOUR POCKET

Croatia - Basic Data

Mainland surface area	56 594 km^2
Terittorial sea surface area	31 067 km^2
Coastiline length	5 835,3 km
Islands, rocks, reefs	1 185
Highest mountain summit	Mt. Dinara, 1 831 m
Counties	21
Cities and municipalities	550 (124 and 426)
Population	4 437 460
Population density per km^2	78,5
Inhabited islands	47
Language	Croatian
Alphabet	Latin
Political system	Parlamentary democracy
GDP per capita	10 675 EUR

AIR

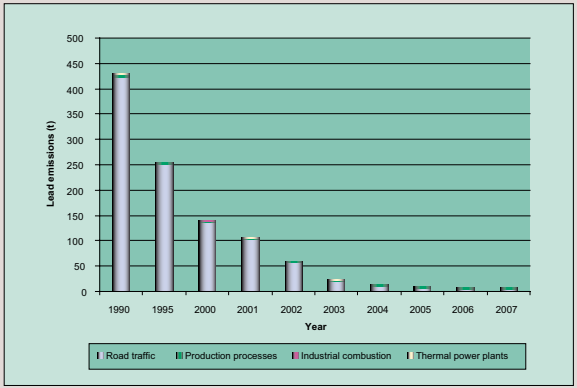
Air Emissions of Lead

Lead (Pb) is a heavy metal used in the manufacture of car batteries, paints, corrosion prevention agents, gasoline, etc. Lead is a stable and highly toxic element that accumulates in an organism over time, which makes it dangerous for humans, animals and plants. Lead poisoning is caused by the long-term intake of small quantities into an organism, resulting in serious health problems (e.g. cardio-pulmonary diseases). Airborne lead particles can be transported over large areas.

Trend and current state

Road traffic has long been the primary source of atmospheric lead emissions. The road traffic share in total atmospheric emissions of lead was 98% (422 t) in 1990 and 53% (6 t) in 2005. The reasons for the reduction in lead emissions, despite the increase in traffic volume, are the better technical condition of vehicles and the introduction of unleaded petrol. Since 2006, trading in leaded petrol has been banned by the *Ordinance on Liquid Petroleum Fuels Quality* (OG 83/02), which resulted in a reduction in lead emissions from the road traffic to about 3.5 t in 2006 and 2007.
Of eleven sectors, the highest contributors to air emissions of lead are production processes, stationary energy sources (thermal power plants), and industrial combustion processes. In 2007, total lead emissions were reduced to approximately 8.7 t, which is 30% less compared to 2005, and 80% less than in 2004. Air emissions of lead recorded in 2007 were as much as 48 times lower compared to 1990.

Air Emissions of Lead, 1990–2007



Source: CEA

AIR

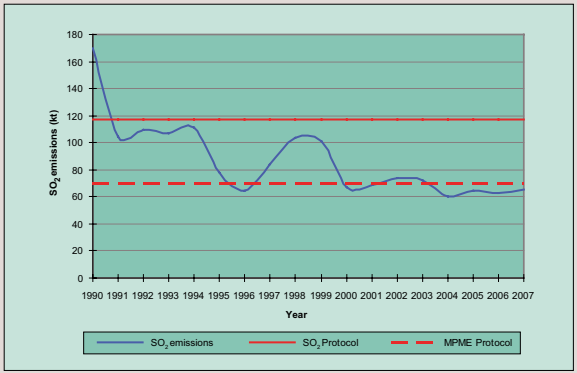
Sulphur Dioxide Emissions

Sulphur dioxide (SO_2) is primarily a product of burning fossil fuels containing sulphur (e.g. coal and fuel oils). It chemically bonds in the atmosphere with water and returns on earth as acid rain, which has a harmful effect on animals and plants. Its precipitation on soil in the form of sulphur dioxide or sulphate (acid rain) causes soil acidification. Sulphur dioxide also adversely affects materials, buildings and cultural monuments. It is directly toxic to humans and animals and could cause respiratory problems. Sulphur dioxide is one of the elements of smog, which can be particularly harmful during the winter.

Trend and current state

In 2007, SO_2 emissions were 62.9 kt, which is 62.8% lower than in the baseline year 1990. In 2007, SO_2 emissions were less than 70 kt, which was a commitment under the *Protocol to Abate Acidification, Eutrophication and Ground-level Ozone (MPME Protocol)* that has still not been ratified by Croatia. The very high SO_2 emissions level recorded in 1990 was due to the use of high-sulphur fuel, particularly fuel burned in non-industrial furnaces and in industrial combustion processes. In 1991, SO_2 emissions from these two sectors were reduced by 50% compared to the previous year, mostly because of the Homeland War. Reduction in SO_2 emissions during the period under consideration results from burning fuel with lower sulphur content, lower industrial production, the introduction of a market economy, and implementation of air protection measures (*Ordinance on Liquid Petroleum Fuels Quality,* OG 83/02, 53/06). Under the *Protocol on Further Reduction of SO_2 Emissions,* SO_2 emissions are to be maintained at a level of 117 kt.

Air emissions of sulphur dioxide, 1990- 2007



Source: CEA

CLIMATE CHANGE

Greenhouse Gas Emissions

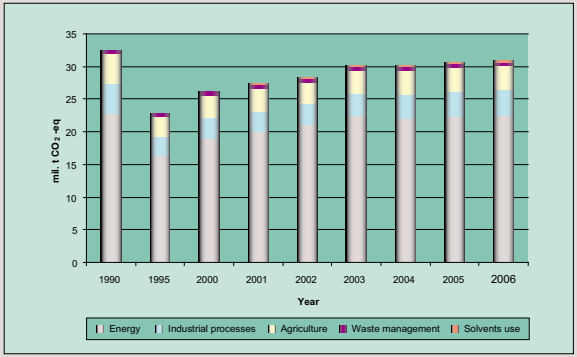
In 1996, the Republic of Croatia became a party to the *United Nations Framework Convention on Climate Change* (UNFCCC). Under the *Kyoto Protocol* of 1997, the parties to the *Convention* undertook a commitment to reduce their greenhouse gas (GHG) emissions against the baseline 1990 levels. Pursuant to the *Protocol*, Croatia undertook to reduce its GHG emissions by 5% compared to 1990 during the first mandatory period (2008-2012). The government has to prepare an annual GHG inventory, the *NIR – National Inventory Report on GHG,* and submit it to the *Convention* Secretariat.

Trend and current state

A decrease in production activities and energy demand between 1991 and 1994, which was the period of war operations in Croatia, resulted in a decrease in total GHG emissions. Since 1995, total emissions have shown an annual increase of 2.8%. Total GHG emissions in 2006, excluding removals by sink, amounted to 30.83 mil. t CO_2-eq, which represents a 5.2% reduction in GHG emissions compared to 1990 levels *(NIR 2008)*. The Energy sector made the largest contribution to total emissions in 2006 (73.1%). It is followed by Industrial processes (13.0%), Agriculture (11.4%), Waste management (1.9%) and Solvents use (0.6%). With minor variations, such emission percentages were maintained during the entire period under consideration (1990 - 2006).

Carbon dioxide (CO_2) accounts for the highest share in total emissions. Compared to 1990, CO_2 emissions in 2006 were reduced by approximately 2%, methane (CH_4) emissions by about 8%, and nitrogen dioxide emissions (N_2O) were reduced by about 12%. In 2006 Conference of the parties to the *Convention*, Croatia was permitted a correction in the baseline year emission by 3.5 mil. t CO_2-eq. Therefore, Croatia is expected to meet the limit values under the *Kyoto Protocol* set for the period 2008-2012.

Greenhouse gas emissions by sectors, 1990-2006



Source: CEA

INLAND WATERS

Use of Freshwater Resources

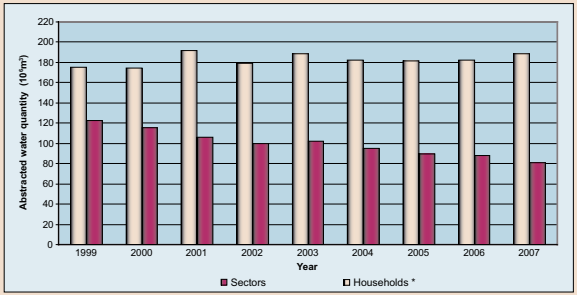
Croatia is rich in water, but uneven spatial and temporal water availability could cause problems in water supply, especially in coastal areas and the islands during the dry season.

Trend and current state

The average amount of Croatia's own water and water inflow from other countries is about 25 160 m^3/year per capita, of which the Croatia's waters account only for 5 880 m^3/year per capita. According to the data available from the Hrvatske vode (legal entity for water management), total annual water abstraction for public and industrial use* (without the hydropower sector) is about 1.04 billion m^3. Between 1999 and 2007, the quantity of water supplied to households ranged between 175 and 190 million m^3. According to a Hrvatske vode estimate, the population not connected to the public water supply systems abstracts 60 to 70 million m^3 from private sources (water wells, etc.). The quantity of water used annually from the public supply system for individual sectors* (without the hydropower sector) is between 80 and 125 million m^3. A decreasing trend was registered between 1999 and 2007, which is probably the result of the decrease in industrial production. Certain quantities of fresh water are used for irrigation. According to data from the Central Bureau of Statistics for the period 2001-2006, annual water consumption for irrigation amounted to 6 to 7 million m^3, while the data published in the *Water Management Strategy* (OG 91/08) indicate that total water consumption for irrigation is estimated to be 15 to 20 million m^3.

* Users are grouped into the following sectors: mining, processing industry and energy and gas supply. All companies are included.

Use of water from the public supply system for public and sectoral use* (without the hydropower sector), 1999-2007



Year	1999	2000	2001	2002	2003	2004	2005	2006	2007
Households	175.314	174.632	191.697	178.853	188.379	182.664	181.353	182.275	188.393
Sectors *	122.514	115.357	106.149	99.649	101.87	95.042	89.472	87.951	81.192

Source: CBS

INLAND WATERS

Drinking Water Quality

Monitoring of drinking water quality is carried out to protect consumer health. The evaluation is based on microbiological, chemical and radiological parameters of drinking water quality, in line with the provisions of the Ordinance[1]. Drinking water quality meets the sanitary standards when these values of the parameters do not exceed the legally stipulated maximum allowable concentration (MAC).

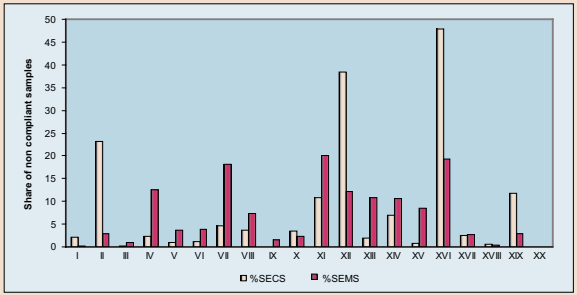
Trend and current state

An average coverage from public water supply network is 80% of the population (2006). The data for 2007 indicates that less than 10% of samples do not meet drinking water quality standards, with a significant difference between the counties. The highest percentage of samples exceeding chemical standards (SECS) were registered in Krapinsko-Zagorska and Dubrovačko-Neretvanska Counties and in the eastern areas of the country, i.e. Vukovarsko-Srijemska, Brodsko-Posavska and Požeško-Slavonska Counties, which is a long-term trend. The lowest number of SECSs was registered in Ličko-Senjska, Međimurska and Sisačko-Moslavačka Counties. The highest percentage of water samples exceeding microbiological standards (SEMS) was registered in Vukovarsko-Srijemska and Požeško-Slavonska Counties, and the lowest in Međimurska and Zagrebačka Counties/The City of Zagreb. The above data are from water sample analysis carried out in the laboratories of the county public health institutes. The number of chemically and microbiologically analyzed samples differs from one county to another. Implementation of the new *Ordinance*[1], which corresponds with the *EU Drinking Water Directive*[2], will result in uniform sampling, sample analysis and water quality data accessibility, which is imperative for the implementation of a sustainable water resources management policy in Croatia.

** List of counties and the City of Zagreb (I-XXI) is included in the Glossary below. The data for the Zagreb County and the City of Zagreb are combined under number I.*

[1] *Ordinance on the quality of water intended for human consumption*
[2] *Directive 98/83/EZ on the quality of water intended for human consumption*

Drinking water quality by counties, 2007



Source: CPHI

Counties	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII.	XIII.	XIV.	XV.	XVI.	XVII.	XVIII.	XIX.	XX.
SECS (%)	2.05	23.26	0.16	2.25	0.94	1.09	4.61	3.58	0	3.42	10.85	38.47	1.88	6.96	0.68	47.78	2.44	0.66	11.75	0
SEMS (%)	0.14	2.87	0.91	12.63	3.76	3.84	18.2	7.26	1.64	2.25	20.1	12.07	10.87	10.57	8.41	19.32	2.68	0.46	2.91	0

SEA

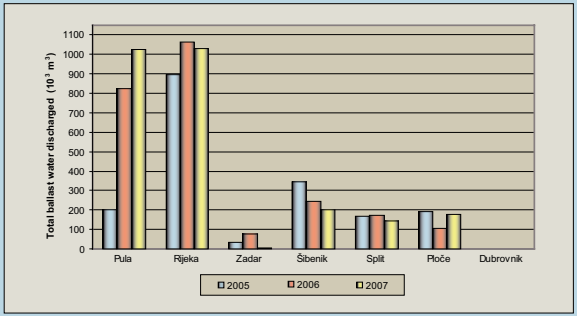
Ballast Water

Ballast water is water uptaken by vessels that contains dissolved matter and randomly uptaken organisms. It is used to achieve navigational stability. Marine organisms uptaken together with the ballast water are frequently transferred to remote locations. Organisms discharged with ballast water from such vessels could disrupt natural biodiversity.

Trend and current state

Data collection on the quantity of discharged ballast water and locations submitted by ships on a voluntary basis began in 2005. *The Ordinance on Ballast Water Management and Control* (OG 55/07) came into force in 2007. It created a legal framework for ballast water recordkeeping and reporting. Between 2005 and 2007, the Rijeka Port Authority has recorded the largest quantity of discharged ballast water. A considerable increase was registered in the same period by the Pula Port Authority, while the Šibenik Port Authority registered a decrease in the area under its authority. The Dubrovnik Port Authority, however, received no reports on ballast water discharge, and data for the Senj Port Authority is not available. Ballast water analysis of different parameters, including the presence of microorganisms, salinity and nutrients that could reveal the origin of the water was carried out once in 2006 and several times in 2008.

Total discharge reported ballast water by port authorities, 2005 - 2007



Source: MSTI

Year	Pula	Rijeka	Zadar	Šibenik	Split	Ploče	Dubrovnik
2005	200.908	896.440	31.845	346.428	169.113	189.290	0
2006	823.534	1 063.003	74.482	246.224	173.029	107.373	0
2007	1 024.911	1 032.292	4.951	201.465	142.710	177.740	0

SEA

Sea Bathing Water Quality

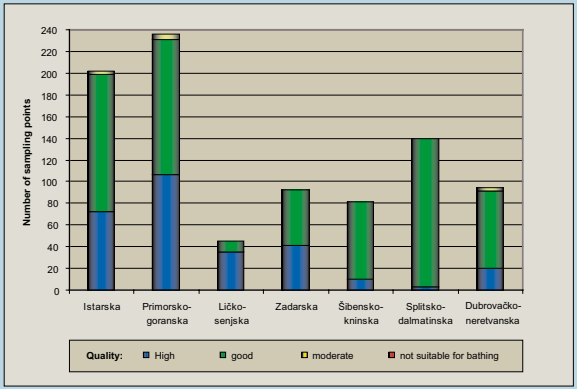
Monitoring of the sea bathing water quality is being carried out to protect public health during the swimming season, from 15 May to 30 September. An annual quality assessment is made based on the results of all analyses carried out under the *Regulation*[1]. Based on the internal criteria sea bathing water is classified into four types marked by four colors: high quality sea (blue), good bathing quality sea (green), moderate bathing quality sea (yellow) and sea not suitable for bathing (red).

Trend and current state

In 2008, sea bathing water quality was monitored at 890 points in Republic of Croatia, which was an increase over previous year. The sea bathing water quality was excellent at 287 points (32.25%); at 592 (66.52%) good; and at 11 points (1.24%) sufficient. There were no sampling points at which the sea bathing water quality was assessed as sea not suitable for bathing. Between 2004 and 2008, the share of beaches corresponding to the strict national standards of the *Regulation*[1] was between 99.7 and 100%, which is an indication of high sea water quality in Croatia.
The provisions of Bathing Water Directive (2006/07/EC) that refer to sea bathing water quality have been transposed to the new Regulation[2] that came into force on 1 January 2009. The national sea bathing water quality assessment standards are stricter than the ones from the *Directive*. The national regulations on freshwater bathing water quality are currently being legislated.

[1] *Regulation on Sea Water Quality Standards at Beaches (OG 33/96)*
[2] *Regulation on Sea Bathing Water Quality (OG 73/08)*

Sea bathing water quality assessment for the Croatian part of the Adriatic, 2008



Source: MEPPPC

SOIL

Potentially Contaminated Sites

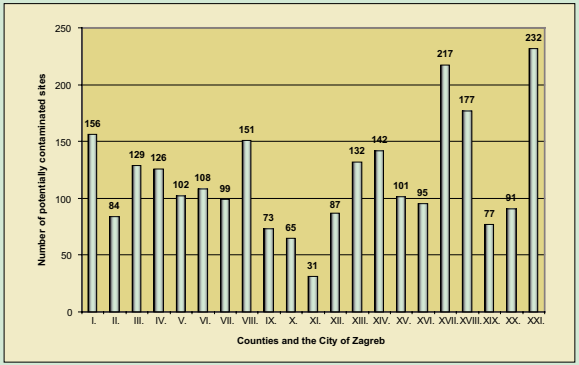
Potentially contaminated sites are locations at which the contaminating activity (industrial production, process and municipal waste disposal, oil industry, power plants, spillages from transport, mining, etc.), that might discharge contaminants into the soil, is taking place. Uncontrolled discharge of soil contaminants causes soil damage or the loss of function and might trigger the process of soil degradation. The resulting changes might adversely impact the quality of water and air, biodiversity and public health.

Trend and current state

According to the GEOL database (CEA, 2007), which contains data on potentially contaminated sites collected according to IPPC guidelines, Seveso II and the EPRTR *Directive*, most of the potentially contaminated sites are located in the City of Zagreb (232), and in Splitsko-Dalmatinska (217), Istarska (177), Zagrebačka (156), Primorsko-Goranska (151) and Osječko-Baranjska (142) Counties. The fewest number of potentially contaminated sites was registered in Požeško-Slavonska County (31).

Change in soil conditions and the occurrence of soil degradation caused by the discharge of contaminants can be determined by permanent soil monitoring. The Croatian Environment Agency developed the Permanent Soil Monitoring Program for Croatia which defines soil monitoring at the potentially contaminated sites within the LIFE05 TCY/CRO/000105 “Development of the Croatian Soil Monitoring Programme with a Pilot Project”.

Number of potentially contaminated sites in counties and the City of Zagreb*, 2007



Source: CEA

** List of counties and the City of Zagreb (I-XXI) is included in the Glossary below.*

AGRICULTURE

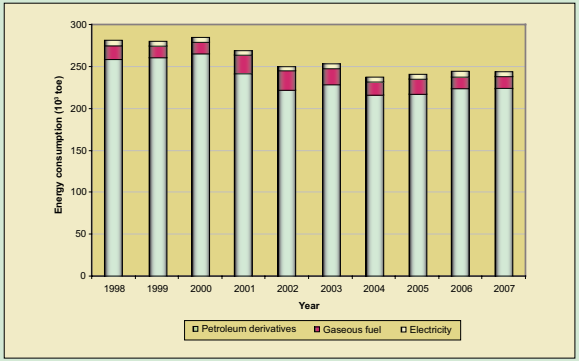
Energy Consumption in Agriculture

Direct energy consumption in agriculture includes energy consumption in crop production (cereal grains, oil crops, fruit, and vegetables), animal and poultry breeding and the production of animal and other produce (milk, eggs, honey, mushrooms, etc.). Fossil fuels, primarily oil, which directly cause carbon dioxide (CO_2) emissions into the atmosphere, account for the major share of energy consumption. To reduce CO_2 emissions from agricultural production, it is necessary to focus on rationalization of energy consumption and an increase in energy efficiency and the use of renewable energy sources.

Trend and current state

Agriculture is one of the sectors with the highest impact on the environment in Croatia. Direct annual energy consumption in agriculture is monitored by energy source (petroleum derivatives, gaseous fuels and electricity), indirect consumption (e.g. energy consumption in production of fertilizers) is not included. Compared to the period between 1998 and 2000, total annual energy consumption in agriculture has decreased slightly in the last several years. The lowest consumption rate of 237.8 x 10^3 toe was recorded in 2004. In 2007, consumption of petroleum derivatives accounted for the highest share in total energy consumption in agriculture (91.7%). It was followed by gaseous fuels (5.9%), while electricity accounted for the smallest share in agriculture (2.4%).

Energy consumption in agriculture



Source: HPEI

Energy consumption in agriculture by energy sources (10^3 toe), 1998-2007 (10^3 toe)										
Year	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
Petroleum derivatives	258.3	261.8	265.7	241.1	221.5	228.4	216.4	217.5	224.0	224.9
Gaseous fuels	18.6	12.7	14.5	23.6	24.3	19.9	15.8	18.8	15.3	14.5
Electricity	5.6	5.7	5.8	5.8	5.7	5.4	5.6	5.7	5.9	5.8
Total	**282.5**	**280.2**	**286**	**270.5**	**251.5**	**253.7**	**237.8**	**242.1**	**245.2**	**245.3**

AGRICULTURE

Area under Organic Farming

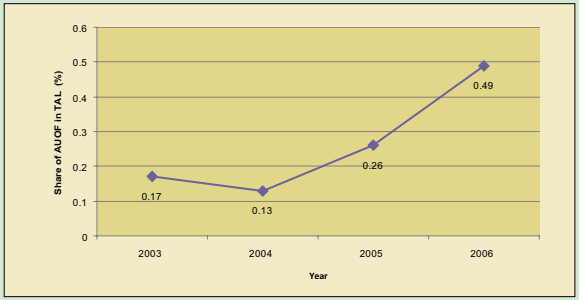
Organic farming defined as special system of sustainable management in agriculture that efficiently uses fertile soil and available water and the natural characteristics of plants, animals and the terrain. This enables an increase in crop yield and plant resistance with the goal of reducing nitrate, phosphate and pesticide pollution and the conservation of biodiversity and the ecosystem.

Trend and current state

The *Register of Organic Farmers and Food Products* clearly indicates that areas under organic farming are continually increasing. In 2003, 130 farmers were entered into the *Register* with 3 506 hectares of land under organic farming (AUOF), which is 0.17% of total agricultural land (TAL). In late 2006, the number of farmers grew to 342, and the area under the organic farming amounted to 6 008.24 hectares, which is 2 502.24 hectares more than in 2003.

According to data from the Central Bureau of Statistics, agricultural land in Croatia in 2006 totalled 1 216 000 ha. A comparison of data for 2005 indicates that the share of the area under organic farming in total agricultural land was only 0.49%. It is unfortunate that the increase in area under organic farming was only 0.32% between 2003 and 2006, regardless of subsidies that were 30% higher than those for conventional agricultural production.

Share of area under organic farming in total agricultural land, 2003- 2006



Sources: MAFRD and CBS

Year	2003	2004	2005	2006
TAL	2 073 000	1 991 000	1 202 000	1 216 000
AUOF	3 506.00	2 602.00	3 121.00	5 949.66

BIODIVERSITY

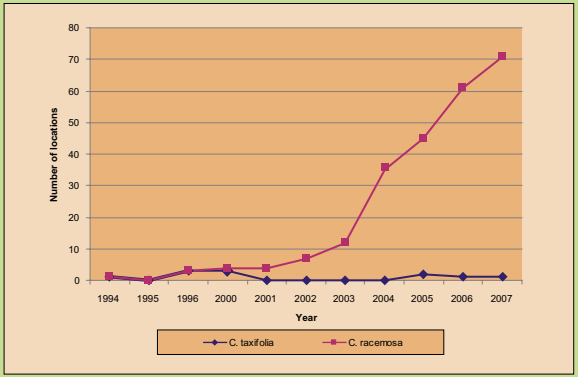
Invasive Foreign Species in the Adriatic Sea

Invasive foreign species are animals, plants or microorganisms that may damage biological, ecological, and landscape diversity by colonization and dispersion. Such species displace the native species or cross-breed with them, which might permanently damage the environment.

Trend and current state

Invasive green algae *Caulerpa taxifolia* and *Caulerpa racemosa* cause changes in ecological conditions in ecosystems and the extinction of native species in the Adriatic. *C. taxifolia* was first observed in the Adriatic in Starigradski Zaljev bay and Malinska in 1994, and in the Barbatski Kanal channel in 1996. After its eradication due to the low sea temperatures in the Barbatski Kanal, the algae has not been found since 2002. Since 1997, the removal from the Starigradski Zaljev area has been carried out periodically, so by the end of 2005 it stopped spreading at its normal rate in isolated locations. C. *racemosa* was first encountered in the Pakleni Otoci Islands in 2000. The number of locations grew very quickly, with 70 locations identified by 2007. Unlike C. *taxifolia*, C. *racemosa* is hard to detect and it spreads very quickly with sea currents, which makes its removal very difficult. A Ministry of Culture project, "Monitoring, Supervision of the Dispersion and Eradication of Invasive Algae of *Caulerpa* Genus from the Adriatic", generated many educational, research, mapping, and removal activities in 2005 and 2006. Growth in number of the Red Sea lessepsian fish migrants in the Adriatic has also been noticed. In 2007, their number increased to 11, and their gradual spread into the northern Adriatic was observed. These species should be monitored particularly carefully because of their possible impact on the fish species in the area.

Number of known C. *taxifolia* and C. *racemosa* locations in Croatia



Source: IOF

BIODIVERSITY

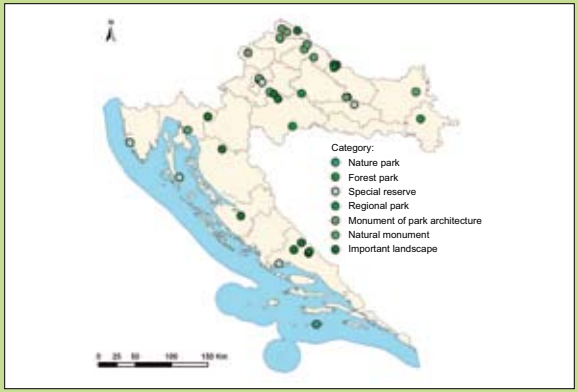
Protected Areas Designated in 2000-2007

Because of their special value, designated areas are the backbone of an overall biological and landscape diversity and key points in the ecological network. The protection, conservation, maintenance and usage of the designated areas is carried out under the provisions of the *Nature Conservation Act* (OG 70/05, 139/08) and bylaws, respecting international standards and protection levels in order to achieve sustainable use of these valuable areas.

Trend and current state

Between 2000 and 2007, Croatia placed 40 new areas under protection (total 118 254.27 ha). A new nature park was designated (the Lastovsko Otočje Archipelago). The majority of newly designated areas are protected under the categories of important landscape (14) and natural monument (10). Six of new areas are under preventive protection: three special reserves (floral reserve Turjak-Mališćak-Pliš-Lapjak in the Papuk Nature Park, Cres-Lošinj sea basin as a sea and ornithological reserve, and the ornithological reserve Savica in Zagreb), the first regional park (Mt. Moslavačka), an important landscape (Karišnica and Bijela), and a monument of park architecture (a plane-tree in Dubrovnik). The *Nature Conservation* Act of 2005 introduced the concept of three-year preventive protection. The preventive protection period is determined according to the *Act* and all areas under preventive protection are entered into the *Register of Protected Natural Assets* kept by the Ministry of Culture. Due to exceptional biological and landscape diversity, some areas are under international legal protection. In 2007, the Papuk Nature Park was entered into the UNESCO Geoparks Network, and the Lonjsko Polje Nature Park applied for the UNESCO World Heritage list in the category of mixed site – an area of both world natural and cultural heritage.

Protected areas designated in 2000-2007



Source: MC, SINP

FORESTRY

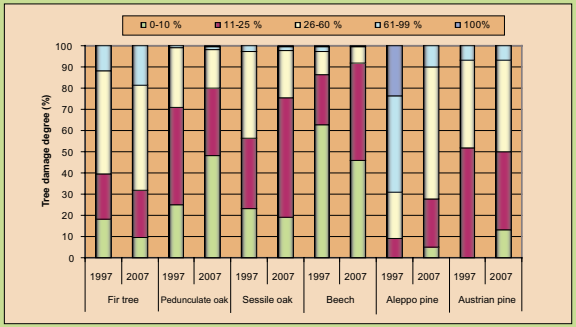
Degree of Damage to Forest Ecosystems

An estimate of the tree vitality is based on the results of monitoring the degree of damage to forest ecosystems and the share of defoliation in comparison to a healthy tree. The degree of damage is determined on the basis of defoliation and discoloration of assimilation organs. The evaluation is carried out in 5% steps. The results are grouped into Category 1- no defoliation (0-10%); Category 2 - low defoliation (10-25%); Category 3 - moderate defoliation (25-60%); Category 4 - high defoliation (60-99%), and Category 5 - dead trees (100%). Damage to the forest canopy are caused by air pollution, harmful precipitation, a change in groundwater tables, climate change, etc.

Trend and current state

Between 1997 and 2007, a significant degree of tree damage to all trees evaluated ranged between 40.53% (1997) and 20.66% (2002). The highest degree was recorded in 1997. The situation improved and stabilized between 1998 and 2002. High values (39.32%) were recorded in 2003, and since 2004 the degree of damage has fallen again to the usual values for all species, with 25-27% of highly damaged trees. Although percentages of damaged trees were very high in 2006 and 2007, the percentage of highly damaged trees was decreasing. The fir tree is the most affected species of forest trees, with a very high percentage of significant damage. Minimum fir tree damage percentages during the period under consideration were recorded in 1997 and the maximum in 2004. The least damaged species is the beech, with significant damage degree ranging between 13.58% in 1997 and 3.77% in 1999. The majority of trees evaluated are in the category of degree defoliation, 0-10%. For Aleppo pine, 1997 was a year with a high percentage of significant damage of 91.11% (also with high share of mortality - 23.70%). This percentage decreased to 31.13% in 1998, and its subsequent gradual raise shows a clear trend of increase in Aleppo pine damage.

Damage of some of the most common tree species, 1997-2007



Source: University of Zagreb Faculty of Forestry

WASTE

Biodegradable Municipal Waste

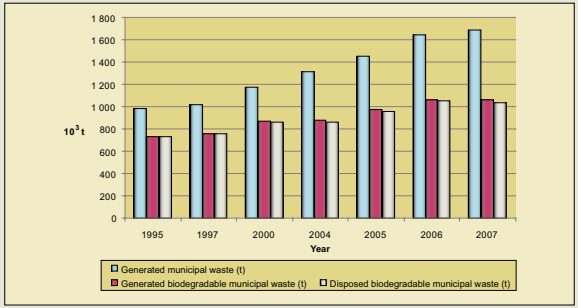
Biodegradable fractions constitute a significant portion, about 70%, of the municipal waste. European[1] and national regulations [2,3] have set up strict goals for a reduction in the quantities of biodegradable waste disposed off in landfills, particularly because the degradation of biodegradable waste significantly contributes to greenhouse gas emissions which, in turn, cause climate change.

Trend and current state

According to municipal waste composition data for the period 1995-2003, biodegradable components accounted for an average of 74% (household and biowaste - 42%, paper and cardboard - 20%, leather and bones - 3%, wood - 1,3%, textile - 8%). Since 2004, biodegradable components accounted for an average of 67%. Per capita generation (collection) of biodegradable municipal waste increased from 156 kg in 1995 to 238 kg in 2007. In 2007, almost the entire quantity of biodegradable municipal waste was disposed of in landfills (1 033 044 t), and only a minor part was recycled or composted. According to available data, Croatia is far from reaching its 2012 goal to reduce the share of biodegradable municipal waste disposed of in landfills to 75% of the amount of biodegradable municipal waste generated in 1997. Municipal waste generation rates are increasing, separate collection of biodegradable components from a municipal waste has not developed sufficiently, and municipal waste management relies mainly on the waste disposal.

[1] *Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste*
[2] *Waste Management Plan of the Republic of Croatia, 2007-2015 (OG 85/07)*
[3] *Ordinance on the Methods and Conditions for the Landfilling of Waste, Categories and Operational Requirements for Waste Landfills (OG 117/07)*

Biodegradable municipal waste generation and disposal, 1995-2007



Source: CEA

Year	1995	1997	2000	2004	2005	2006	2007
Generated municipal waste (t)	978 542	1 015 000	1 172 534	1 310 643	1 449 381	1 641 243	1 683 132
Generated biodegradable municipal waste (t)	729 014	756 175	873 538	878 131	971 085	1 061 840	1 058 284
Disposed biodegradable municipal waste (t)	729 014	756 175	863 538	863 131	952 969	1 050 509	1 033 044

WASTE

Electrical and Electronic Waste

Electrical and electronic waste (EE waste) is generally classified as hazardous waste because of its components. According to data from the *Strategy*[1] this waste has the highest rates of increase – between 30 000 and 45 000 t/year, which is an annual increase of 10%. The *Ordinance*[2] target collection was 4 kg of waste per year per capita by 31 December 2008, and a corresponding increase in the years to come.

Trend and current state

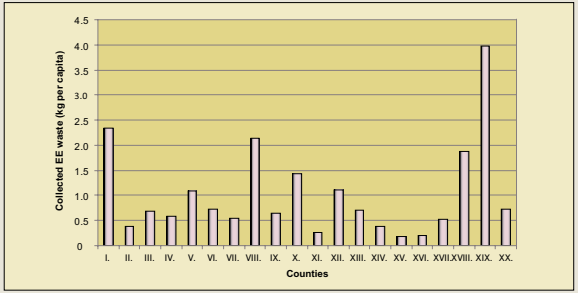
In 2008, 71 225.9 t of EE equipment was placed on the market (production and import). During the year, 5 718.6 t of EE waste was collected and 5 420.7 t treated. Pursuant to the provisions of the Ordinance[2], a concession for the collection of EE waste was granted to three companies. One of them has been granted a concession for the collection of all types of EE waste throughout Croatia, and it collected 66.1% of the total quantity of EE waste. The company that collects large household appliances for the City of Zagreb and Zagrebačka and Krapinsko-Zagorska Counties collected 21.4%, and the company licensed for collecting the same type of waste in Primorsko-Goranska, Istarska and Ličko-Senjska Counties collected 12.5% of the total quantity of EE waste. Large household appliances accounted for almost 50% of the total quantity of EE waste collected, while IT and telecommunication equipment accounted for 30%. The largest quantity of EE waste was collected in the City of Zagreb and Zagrebačka County (44.5% of the total amount), then in Primorsko-Goranska (11.4%) and Dubrovačko-Neretvanska (8.6%) Counties. In 2008, 1.29 kg of EE waste per capita was collected. Two companies were granted concessions for EE waste treatment – the one licensed for large household appliances treated 50.4% of the total EE waste, and the other licensed for another nine types of EE waste treated 49.6% of the total quantity of EE waste treated.

** List of counties and the City of Zagreb (I-XXI) is included in the Glossary below. The data for the Zagreb County and the City of Zagreb are combined under number I.*

[1] *Waste Management Strategy of the Republic of Croatia (OG 130/05)*

[2] *Ordinance on Management of Waste Electrical and Electronic Appliances and Equipment (OG 74/07)*

EE waste collected in counties and the City of Zagreb, 2008



Source: EPEEF

Counties and the City of Zagreb	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII.	XIII.	XIV.	XV.	XVI.	XVII.	XVIII.	XIX.	XX.
kg per capita	2.34	0.39	0.68	0.58	1.09	0.73	0.55	2.14	0.65	1.44	0.27	1.10	0.71	0.39	0.18	0.20	0.52	1.87	3.98	0.72

ENERGY

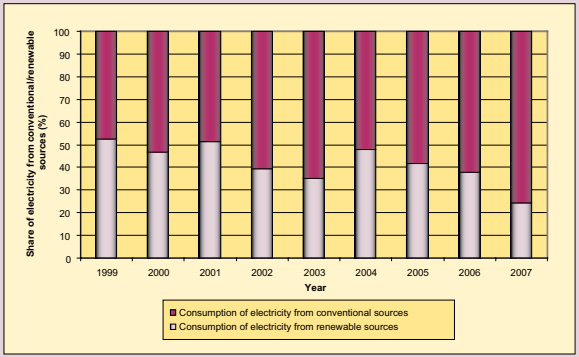
Share of Renewable Energy Sources in Total Energy Consumption

Increase in power generation from the renewable energy sources increases energy system sustainability. This results in a decrease in energy generation from energy sources with finite reserves (oil, coal, gas) and reduces the environmental load resulting directly from the exploitation and use of non-renewable energy sources. According to the *Strategy*[1] a considerable increase is expected in the share of energy from renewable sources in primary energy generation, and a gradual decrease in the share of fossil fuels.

Trend and current state

Between 1999 and 2007, the share of the consumption of electricity from renewable sources in total electricity demand ranged between 24.32% and 52.57%, with variations. Hydropower is the most important renewable electricity source in Croatia. Since it depends to a considerable extent on hydrological conditions, the demand and supply of electricity from this source understandably decreases during dry years (2003 and 2007). Besides hydropower (large hydroelectric power plants), other renewable sources of electricity include solar, wind and biomass energy, and small hydro plants (capacity less than 10 MW, not within the Croatian Power Board). In 2007, their share in electricity generated from renewable sources was 0.7%, mostly small hydro and wind parks. Although wind generator output in 2007 was 183.68% higher compared to the previous year, it is still not enough for realization of the environmental scenario (S3) from the *Strategy*[1] which anticipates much higher share of wind energy (73 MW) in electricity generation by 2010.

Share of renewable energy sources in total energy consumption, 1999-2007



Source: MELE, HPEI

[1] *Energy Strategy of the Republic of Croatia (OG 38/02)*

TOURISM

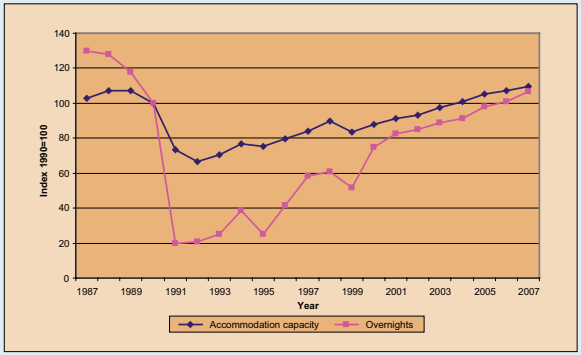
Accommodation Capacities and Overnight Stays

Croatia is strongly tourism oriented country. Data collection on accommodation capacities, specifically the number of beds and occupancy levels on an annual basis is of particular importance for the development of this sector. However, the growth of the tourism means increased pressure on the environment due to considerable increase in drinking water demand, wastewater and solid waste, air pollutant emissions, and other effects of traffic. Construction of tourist facilities also exerts considerable pressure on the surrounding areas.

Trend and current state

In 1987, the number of overnight stays in Croatia was 68 160 000 (occupancy 76.95 days). The beginning of the Homeland War led to a dramatic decrease. Since 1992, the tourist business has shown a trend of recovery, with the exception of the years when the military operation Storm (1995) and the Kosova crisis (1999) occurred. However, tourism has not still reached pre-war levels. In 2007, the total number of overnights stays was 56 005 492 (occupancy 59.32 days). The majority of overnight stays were recorded in the coastal counties (96%). By counties, the highest occupancy level was recorded in Istarska County (31.4%) and Primorsko-Goranska County (19.8%). Between 1990 and 2007, a slight increase in accommodation capacity was recorded. In 2007, Croatia had 944 076 registered beds, reaching pre-war levels. Most of the accommodation capacity is available in the coastal counties (97%), which results in a high environmental load from tourism in the coastal regions of Croatia. This impact is transferred from beaches and accommodation facilities to an entire tourist destination, and most tourists arrive by highways. The highest share of accommodation capacity is available in Istarska County (27.9%), Primorsko-Goranska County (20.6%) and Splitsko-Dalmatinska County (16.5%).

Accommodation capacity and overnights, 1987-2007



Source: CBS

TOURISM

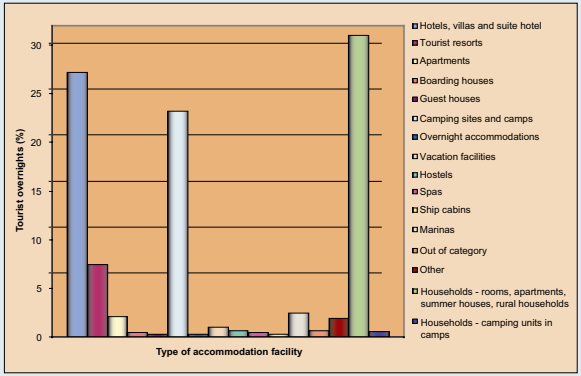
Tourist Overnights by Accommodation Facility Type

Data collection and analysis of tourist overnight stays by accommodation facilities is particularly important for the development of the commercial accommodation offer and also for the systematic and sustainable planning of Croatian resources. During the tourist season, catering, sports and recreation facilities are used so it is necessary to identify, survey and plan economically and environmentally sustainable space usage.

Trend and current state

The present structure of accommodations offered in Croatia is based mostly on an inherited situation, i.e. types, categories and spatial distribution of accommodation facilities built up to the beginning of the 1980s, when this capacity was built for mass tourism based on bathing and leisure. Between 2003 and 2007, the highest overnight stay increase was recorded in tourist apartments (54.5%) and households, including accommodation in rooms, apartments, summer houses and rural households (35.6%). This period also recorded a 27% increase in overnight stays in marinas. Increase in these types of accommodation capacities indicate that there is an increase in number of tourist apartments, summer houses, and marinas (moorings), which results in an increase in the environmental load caused by tourism development. In 2007, households (rooms, apartments, summer houses, rural households) had 17.38 million overnight stays; hotels, villas and suite hotels 15.22 million overnight stays, and camping sites and camps 13.02 million overnight stays. The lowest number of overnight stays was recorded in boarding houses (237 000), ship cabins (157 000), guest houses (143 000) and overnight accommodations (141 000), while number of overnight stays in sleeping cars, inns and motels was negligible.

Tourist overnight stays by accommodation facility type, 2007



Source: CBS

FISHERIES AND AQUACULTURE

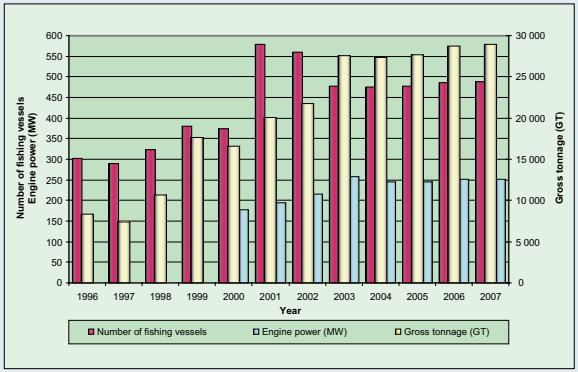
Fishing fleet capacity

Fishing vessels over 12 m in length and 15 GT in tonnage form the fishing fleet. The fishing fleet capacity exerts pressure on the marine ecosystem in the form of fishing effort (the product of fleet capacity and fishing days).

Trend and current state

Croatia has 55 349 km^2 of sea available for fishing – 12 498 km^2 of internal seas, 18 981 km^2 of territorial seas, and 23 870 km^2 of Ecological and Fisheries Protection Zone (EFPZ) designated by the *Ordinance on the Protection of the Marine Environment in the Ecological and Fisheries Protection Zone (EFPZ)* (OG 47/08). However, although Croatia has a large fishing potential, the total participation of fisheries in GDP is less than 1%. The number of fishing vessels increased between 1996 and 2001, and then declined between 2001 and 2003. During the period 2003-2007, a slight increase was registered (11 vessels in four years). An increase in the fishing fleet capacity is generally a consequence of building and procurement of larger ships rather than an increase in number of vessels. The Croatian fishing fleet capacity is low compared to the available sea area, and in comparison to other Adriatic countries. According to EEA data, in 2006 Italy had 14 128 vessels, Slovenia 172 vessels, and Croatia 485 vessels. Fisheries policy is moving the fishing effort from coastal waters into the deep-sea, and a number of measures and regulations have been introduced in order to protect marine organisms and habitats, including protection of the marine organisms stock in the Adriatic.

Fishing fleet, 1996-2007



Source: MAFRD, CBS

FISHERIES AND AQUACULTURE

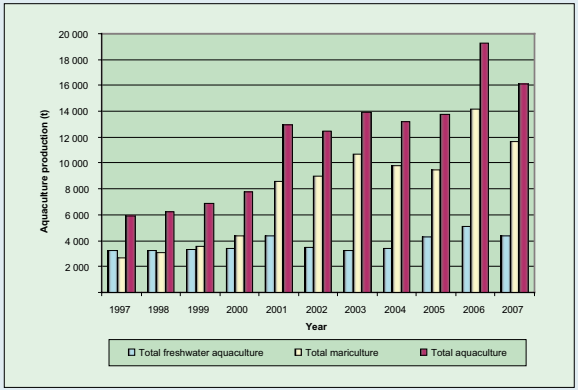
Aquaculture Production

The discharge of nutrients from aquaculture production into the water might cause an increase of the eutrophication level and might have a negative impact both on the quality of aquatic ecosystems and the cultivated organisms.

Trend and current state

Aquaculture production is cultivation of aquatic organisms in marine and freshwater. A general trend of increasing aquaculture production, with some fluctuation, is the result of an increase in production in mariculture, particularly due to an increase in the number of tuna fish farms. The highest level of production in mariculture was registered in 2006 (14 200 t). A decrease in annual Atlantic tuna catch quotas for 2007, along with other protective measures under the *Ordinance on Tuna (Thunnus thynnus) Catch, Farming and Trading* (OG 123/07), led to a fall in mariculture production to 11 680 t. According to EEA data on marine aquaculture production relative to coastline length, in 2005 Croatian production was 1.67 t/km, which is low compared to other Adriatic countries (Italy - 15.97 t/km, Slovenia - 5.56 t/km). Freshwater aquaculture production is low, between 3 205 t in 1998 and 5 067 t in 2006. During the assessment period, production decreased in cyprinid fish ponds and increased in salmonid fish farming. Salmonid fish farming requires top water quality. To implement and maintain water protection measures, the salmonid fish farming locations need to be carefully planned in order to avoid pressure on the cleanest waters.

Aquaculture production, 1997-2007



Source: CBS, MAFRD- Department of Fisheries

TRANSPORT

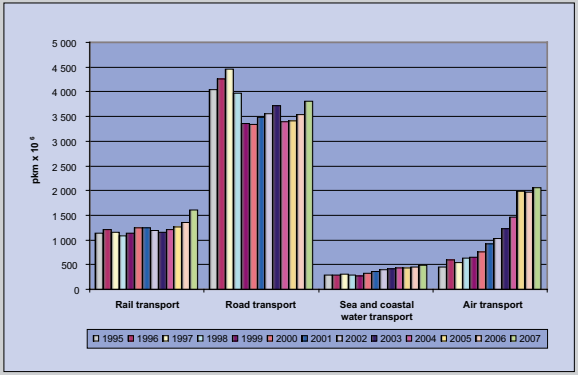
Passenger Transport

The volume and structure of passenger transport is an important indicator of the transport system operation since it shows how much and by which means the population of a country, region or a city travels. The selection of a means of transportation is important since they differ in their environmental, economic and social efficiency. The collection and analysis of data on the number of passengers-kilometres (pkm) in rail, road (cars and buses in particular), sea/coastal water, and air transport are very important for analyzing the impact of transport on the environment.

Trend and current state

Between 1995 and 2007, total number of passenger-kilometres increased by 32.6%. It can be concluded from the data on road transportation (based on the number of registrations, the average annual distances travelled and an average car occupancy) that the passenger-kilometre (pkm) structure in road transportation is still dominated by personal vehicles (47.79% in 2007). One of the reasons for this situation is interrupted construction of new railroad infrastructure and the poor condition of rolling stock due to a decrease in the number of locomotives and carriages.
However, analysis of the passenger-kilometre structure for the entire period under consideration reveals that the share of road transportation of passengers decreased by 6%, with an increase in passenger transportation by air (363%), sea and coastal water transport (75%) and rail transport (41.4%).

Passenger-kilometres (pkm) by means of transportation, 1995-2007



Source: CBS

TRANSPORT

Freight Transport

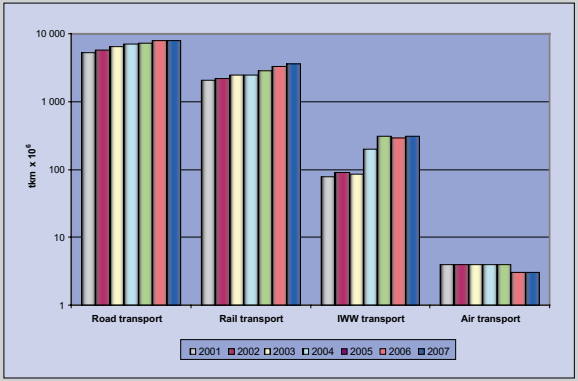
Collecting and analysis of data on volume and method of freight transport enables monitoring of the environmental efficiency of different types of transport with regard to quantity of spent fuel, emissions of greenhouse gases and other pollutants, noise, space occupancy, and road accidents which have direct impact on the environment. Transport policy, i.e. planning the volume of use of particular means of transportation could, depending on their environmental efficiency, mitigate the environmental impact of the transport.

Trend and current state

The tonne-kilometre (tkm) structure indicates that the road transport is dominant in freight transport in Croatia, although the structure of individual modes of transportation is still more favourable in comparison with the European Union. In 2001, the methodology used for road freight transport data collection was changed to include the public transport and private transport. This change caused a considerable increase in road freight transport (60.96%) during the period 2001-2007.

Between 2001 and 2007, the largest increase in the tonne-kilometre structure in freight transport was achieved in inland waterways (IWW) freight transport (292%). An increase was also recorded in rail transport (72.32%) and in road transport (50.17%). In 2007, the freight transport by air decreased by 15% compared to 2001. It should be noted that the analysis does not include sea transport because of large distances that consequently result in high share of tonne-kilometres.

Tonne-kilometres (tkm) by means of transportation, 2001-2007



Source: CBS

HEALTH AND SAFETY

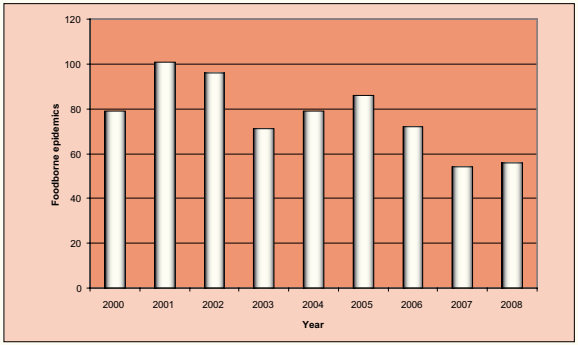
Foodborne Epidemics

Substances of microbiological, physical or chemical origin and radioactive substances present in the environment frequently have negative impact on public health and the quality of life. Alimentary infections and intoxication are caused by the consumption of food that has been exposed to primary or secondary contamination by pathogenic microorganisms and/or their toxins. The regular collection of data on these diseases is carried out under the provisions of the *Act on Public Protection against Infectious Diseases* (OG 79/07) through a system of mandatory reporting to epidemiological services within the public health institutes.

Trend and current state

Public health measures implemented in Croatia to ensure the safety of food include the systematic sanitary evaluation of food, sanitary supervision of food mass production, continuous introduction of HACCP, regular medical examinations and permanent education on food safety and personal hygiene of all persons employed in the production, preparation and distribution of food. The situation is favourable since the measures have been in effect for years. Also, during the period 2000-2008 no foodborne epidemics caused by industrially produced food were recorded. Foodborne epidemics are caused mainly by the consumption of privately prepared food (family), and rarely by food prepared in public catering facilities. About 60 to 70% of epidemics are caused by *Salmonella spp.* Other agents include *Staphylococcus aureus, Clostridium prefringens, Campylobacter,* Noro virus, Rota virus, etc.

Foodborne epidemics, 2000-2008



Source: CPHI

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
Number of foodborne epidemics	79	101	96	71	79	86	72	54	56

HEALTH AND SAFETY

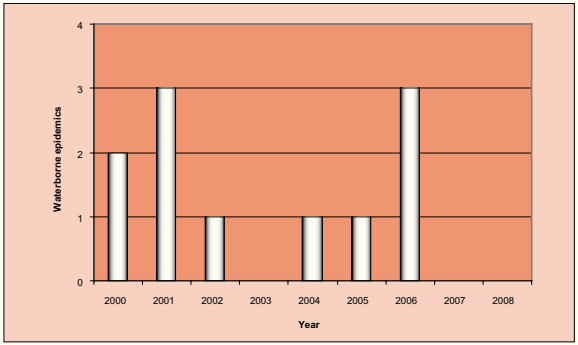
Waterborne Epidemics

Diseases caused by the consumption, use or exposure to contaminated water can be attributed to the inadequate condition of water supply systems, the state of the environment, natural disasters, accidental pollution and epidemics. Waterborne diseases are caused by consumption and exposure to water contaminated by pathogenic viruses, bacteria or protozoa. The intake paths of such contaminated water are most frequently drinking water, food preparation and exposure to water used for recreation. Regular data collection on these diseases is carried out under the provisions of the *Act on Public Protection against Infectious Diseases* (OG 79/07) through a system of mandatory reporting to epidemiological services within the public health institutes.

Trend and current state

Epidemics where the agent is transmitted by drinking water are rare; they occur mainly in smaller water supply systems that are not regularly controlled by the public health institutions. Due to mandatory microbiological and chemical sanitary evaluation of drinking water in the public water supply systems, the situation in regard to diseases and epidemics caused by contaminated water in Croatia is favourable. Between 2000 and 2008, no waterborne epidemics caused by water from the public water supply system were recorded. Several minor epidemics occurred because of drinking unchecked and contaminated water from rivers and forest springs. One epidemic was attributed to ice consumption. In the latter epidemic other diseases caused by drinking of water from the same supply system were absent, which means that the contamination originated from ice preparation in which the basic rules of hygiene were not respected.

Waterborne epidemics, 2000-2008



Source: CPHI

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
Number of waterborne epidemics	2	3	1	0	1	1	3	0	0

HEALTH AND SAFETY

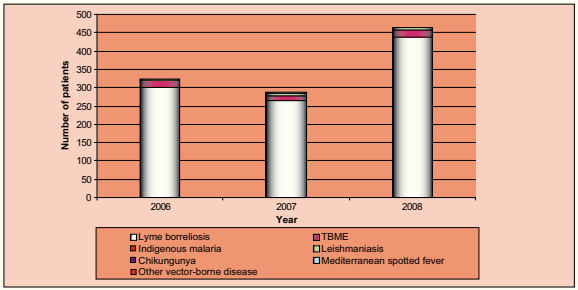
Incidence of Vector-borne Diseases

Vector-borne diseases are diseases in which the agent is transmitted through intermediary organisms (mosquitoes, ticks, flies, lice) – the so-called vectors. Climatic conditions (temperature and humidity) considerably affect vector distribution and density, and therefore their disease transmission potential. Global climate changes might affect changes in the distribution and characteristics of infectious vector-borne diseases and the occurrence of new patterns in infectious diseases.

Trend and current state

Tick-borne meningoencephalitis, Lyme borreliosis, Leishmaniasis cutaneous and visceral and Mediterranean spotted fever are sporadically encountered in Croatia, while the last case of indigenous malaria was recorded in 1954. No patient with Chikungunya fever has been registered to date. The low incidence of diseases transmitted by mosquitoes and insects from the family Phlebotominae is maintained by the systematic implementation of pest control measures. Tick-borne meningoencephalitis is systematically controlled and its incidence maintained at low level by vaccination of the increased-risk population group (e.g. forest workers, farmers, mountaineers). There is no vaccination for Lyme borreliosis, but successful treatment is available that prevents serious generalized forms of this disease. In addition to measures to control the vector population, it is important to implement sanitary measures for the protection and control of persons and goods and means of transportation leaving Croatia or arriving in Croatia from regions where these diseases exist. Since it is neither possible nor necessary to undertake measures for a reduction in the tick population in nature, avoidance and prevention of vector-borne diseases must focus on the continual education of the population.

Vector-borne disease patients, 2006-2008



Source: CPHI

Vector-borne disease	2006	2007	2008
Lyme borreliosis	301	266	438
TBME	20	11	20
Indigenous malaria	0	0	0
Leishmaniasis	2	7	5
Chikungunya	0	0	0
Mediterranean spotted fever	1	4	2
Other vector-borne disease	0	0	0

PUBLIC RELATIONS

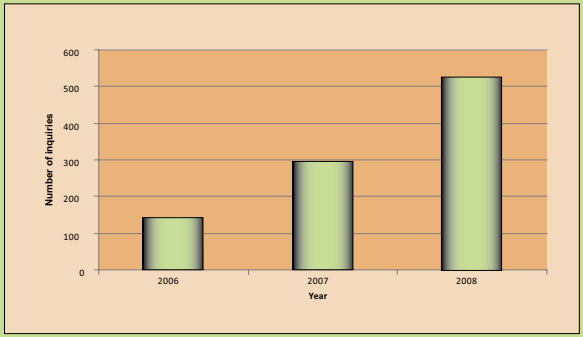
Number and Breakdown of Public Inquiries Addressed to the Croatian Environment Agency in 2008

Open and constant communication with the general public with a purpose of providing them data and information is one of the essential tasks of the Croatian Environment Agency.

Trend and current state

In 2008, the Croatian Environment Agency received 525 requests for 622 items of information, which is a 90% increase compared to the previous year. The most common requests were again for data on waste, which only confirms a constant public interest in this topic. In regard to other themes, air and water/sea topics registered equal interest (5% of all inquiries), the same as in 2008. Public interest in biodiversity showed a slight increase, to 1.4% of all inquiries, while interest in soil and sectoral pressures was the lowest (0.6%). General environmental data and various reports published by the Agency were the subject of 8.4% of requests, which is close to the level of interest in 2007. The largest increase in interest was for the databases kept and maintained by the Agency within the Environmental Information System (EIS). In previous years inquiries to these databases accounted for about 5% of all requests. In 2008, it increased to 22%. Comparison of the applicants has confirmed the previous trend. Most requests (58%) were submitted by private companies involved in waste collection and/or treatment activities. Many of these companies are obliged to submit their data to the Agency. Public awareness of environmental issues is very high and continually increasing. Thus, 15% of all requests were submitted by individuals and 1.5% by NGOs. The interest of state authorities and local self-government units increased to 8% of inquiries, which could be explained by new legal obligations and milestones set up by the *Ordinance on the Environmental Pollution Register* (OG 35/08).

Number of inquiries submitted to the Croatian Environment Agency, 2006-2008



Source: CEA

ENVIRONMENT IN YOUR POCKET

Acronyms and Abbreviations

AUOF – areas under organic farming

CBS – Central Bureau of Statistics

CCS – chemically contaminated samples

CEA – Croatian Environment Agency

CPHI – Croatian Public Health Institute

EEA – *European Environment Agency*

EPEEF – Environmental Protection and Energy Efficiency Fund

EPRTR (EC/166/2006) – Council Regulation concerning the establishment of the European Pollutant Release and Transfer Register

FSC – *Forest Stewardship Council*

GDP – Gross Domestic Product

GEOL – Geo-referenced database on potentially contaminated and contaminated sites

GT – gross tonne (1 GT = 2 832 m^3)

HACCP – *Hazard Analysis and Critical Control Point)*

HPEI – Hrvoje Požar Energy Institute

IOF – Institute of Oceanography and Fisheries, Split

IPPC (EC 61/96) – *Council Directive 96/61/EC concerning integrated pollution prevention and control*

IT – *Information Technology*

IWW – inland waterways

kt – kilo tonne (10^3 t)

MaB – *UNESCO Man and the Biosphere Program*

MAC – maximum allowable concentration

MAFRD – Ministry of Agriculture, Fisheries and Rural Development

MC – Ministry of Culture

MCS – microbiologically contaminated samples

MELE – *Ministry of the Economy, Labour and Entrepreneurship*

MEPPPC – Ministry of Environmental Protection, Physical Planning and Construction

ENVIRONMENT IN YOUR POCKET

Acronyms and Abbreviations

mil. t CO_2 eq – million ton of carbon dioxide equivalent

MMPE Protocol (Multi-pollutant, multi-effect) – UN Protocol to Abate Acidification, Eutrophication and Ground-level Ozone

MSTI – Ministry of Sea, Transport and Infrastructure

MW – megawatt (10^6 W)

NATURA 2000 – EU Environmental Network

pkm – passenger-kilometre

Seveso II (EC 82/96) – Directive 96/82/EEC on Prevention and Control of Major-Accident Hazards Involving Dangerous Substances

SINP – State Institute for Nature Protection

TAL – total agricultural land

TBME – Tick-borne meningoencephalitis

tkm – tonne-kilometre

toe – tonne of oil equivalent

UNESCO – *United Nations Educational, Scientific and Cultural Organization*

UNFCCC – United Nations Framework Convention on Climate Change

Aquaculture – Economic sector involved in natural and controlled breeding of aquatic organisms.

Bacteriological indicators of bathing water quality – Groups of microorganisms (total coliforms, faecal coliforms and faecal streptococci) whose total count is determined in water sample.

Ballast water – In vessels, ballast water with dissolved matter is used to maintain balance, stability and structural integrity.

Coastal water transport (public shipping lines) – Passenger, freight and vehicle transport in the Croatian internal seawaters and territorial sea carried out by designated shipping lines according to published navigation schedule and prices .

Drinking water – All water suitable for drinking, cooking, food preparation, or other purposes in its original state or after treatment regardless of its origin and method of supply (distribution networks, tank trucks or bottles or tanks), and all water usages in production, processing, preservation and sales of products or substances intended for human consumption.

Ecosystem – Basic functional unit in nature consisting of biotic and abiotic factors, which includes organisms and habitats interacting through matter cycling and energy flow.

Eutrophication – A process of pollution caused by enhanced input of nutrients into the aquatic ecosystem. It might be a consequence of anthropogenic input of mineral fertilizers (e.g. nitrates, phosphates), or drain of chemical fertilizers from soil, as well as by natural succession resulting in intensified growth of primary producers of organic matter (algae and other plants).

Foodborne epidemic – A situation in which a minimum of two persons develop similar symptoms of disease simultaneously after having eaten the same kind of food.

Forest ecosystem damage degree – An estimate of tree

vitality based on the results of monitoring the degree of damage to forest ecosystems and the share of defoliation in comparison to a healthy tree.

Forest Stewardship Council (FCS) – An international organization established to promote environmentally responsible, socially useful and economically viable management of world forests.

Fossil fuels – Fuels formed from the organic remains of plants and/or animals (oil, natural gas, coal and peat). At present, it is the basic energy source on the planet.

Gross tonna (GT) – Represents the total internal volume of a vessel (1 GT = 2 832 m^3)

Passenger-kilometre (pkm) – The unit which represents one passenger travelling a distance of one kilometre.

Phlebotominae – Insects from the family Phlebotomineae which transmit parasites from the genus *Leishmania* from dog to man.

Protected natural assets – Natural assets designated as protected and entered into the *Register of Protected Natural Assets* kept by the Ministry of Culture.

Public water supply – Drinking water supply of 50 or more persons or 10 m^3/day from facilities owned by entities and persons registered to work with food and the supply of public institutions such as schools, hospitals, kindergartens, catering facilities, bus and rail stations, etc.

Renewable energy sources – Energy sources not depleted in energy production, including hydropower, solar energy, wind energy, and geothermal energy.

Sink – A process, activity or mechanism by which greenhouse gases, aerosols or greenhouse gas precursors are removed from the atmosphere (e.g. photosynthesis in plants).

Tonne-kilometre (tkm) – The unit which represents the movement of one ton over a distance of one kilometre.

Transit water resources – A part of renewable water resource generated in an upstream catchment entering the

water system of a country.

Waterborne epidemic – A situation in which minimum two persons develop similar symptoms after having drunk or being exposed to water, when there are epidemiological indications that water is the most probable source of infection.

Regional organization of the Republic of Croatia - Counties – *Numerical identification and regional organization stipulated by the Act of Territories of Counties, Cities, Towns and Municipalities in the Republic of Croatia (OG 86/06):*

I. Zagrebačka County based in the City of Zagreb,
II. Krapinsko-Zagorska County based in Krapina
III. Sisačko-Moslavačka County based in Sisak
IV. Karlovačka County based in Karlovac
V. Varaždinska County based in Varaždin
VI. Koprivničko-Križevačka County based in Koprivnica
VII. Bjelovarsko-Bilogorska County based in Bjelovar
VIII. Primorsko-Goranska County based in Rijeka
IX. Ličko-Senjska County based in Gospić
X. Virovitičko-Podravska County based in Virovitica
XI. Požeško-Slavonska County based in Požega
XII. Brodsko-Posavska County based in Slavonski Brod
XIII. Zadarska County based in Zadar
XIV. Osječko-Baranjska County based in Osijek
XV. Šibensko-Kninska County based in Šibenik
XVI. Vukovarsko-Srijemska County based in Vukovar
XVII. Splitsko-Dalmatinska County based in Split
XVIII. Istarska County based in Pazin
XIX. Dubrovačko-Neretvanska County based in Dubrovnik
XX. Međimurska County based in Čakovec
XXI. City of Zagreb: the capital of the Republic of Croatia

is a separate and unique territorial and administrative unit. Its organization is regulated by the City of Zagreb Act. The identification (XXI) number is used to facilitate data presentation.

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