
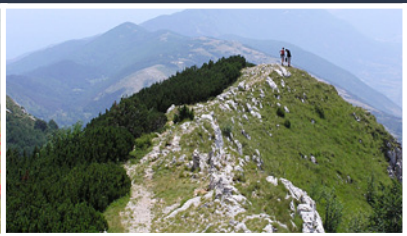
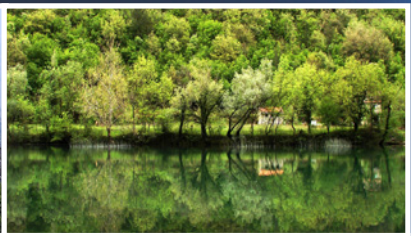


The Environment In Your Pocket

1 - 2012

CROATIAN ENVIRONMENT AGENCY

THE ENVIRONMENT IN YOUR POCKET

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THE ENVIRONMENT IN YOUR POCKET

Introduction

Dear readers,

With the eighth consecutive edition of this brochure the Croatian Environment Agency provides insight into the state of the environment in the Republic of Croatia. All the selected indicators, presented here in a simple manner, were prepared on the basis of data and information from the databases of the Environmental Information System (EIS), thematic reports (available on the CEA website), and data provided by associated institutions with which we have been successfully working for almost a decade.

In view of the fact that the high level of development in some parts of the world is to a great extent based on an ever-intensifying exhaustion of natural resources, such as soil, water, mineral resources, biodiversity, etc., it is of paramount importance to act to protect them, i.e. rational utilization and more efficient consumption. In doing this, steps need to be taken to minimize the effects of the development sectors (energy, industry, agriculture, tourism, fisheries, etc.) on environmental components (air, water, soil, sea, biodiversity). Looking at the state of the environment in the Republic of Croatia, the quality of air, water and the sea may be considered good and stable and the conservation level of forests, biodiversity and soil satisfactory. However, we are facing a drought as a consequence of climate change.

By presenting and explaining data and information on the status and trends of environmental changes in the Republic of Croatia, the Agency continues to fulfill its role in ensuring public access to environmental information and data and protection policies, at the same time raising the awareness of the need to change previous patterns of behaviour. You are therefore invited to join us in our efforts and thus contribute to the conservation of the environment and the natural resources of planet Earth.

Croatian Environment Agency

THE ENVIRONMENT IN YOUR POCKET

Table of Contents

THE ENVIRONMENT IN YOUR POCKET

Table of Contents

THE ENVIRONMENT IN YOUR POCKET

Croatia – Basic Data

Mainland surface area	56 594 km^2
Territorial sea surface area	31 067 km^2
Coastline length	5 835.3 km
Islands, rocks, reefs	1 185
Highest mountain summit	Mt. Dinara, 1 831 m
Counties	21
Cities and municipalities	556 (127 and 429)
Population	4 290 612
Population density per km^2	78.1
Populated islands	48
Language	Croatian
Alphabet	Latin
Political system	Parliamentary democracy
GDP per capita in 2011	10 426.5 EUR

AIR

Mercury (Hg) and Cadmium (Cd) Emissions

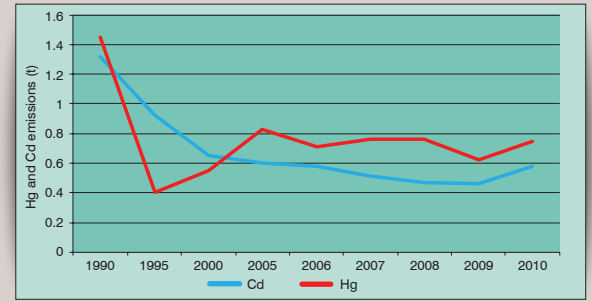
Mercury (Hg) and cadmium (Cd) are heavy metals released into the air in gaseous form as a result of fuel burning in industry and building construction, power plants and the sector of general consumption. They are carried long distances through the atmosphere and pollute the soil and water by settling on them as dust. Due to their persistence, high toxicity and ability to accumulate in the ecosystem, these heavy metals may adversely affect plant and animal life and human health. The monitoring and the abatement of emissions into the air of heavy metals at the international level, which includes the Republic of Croatia, are governed by the Protocol on Heavy Metals[1].

Trend and Current State

The introduction of natural gas and the decline in fuel oil consumption in the period 1990–2010 resulted in a drop of Cd emissions by 55.6%. In the same period Hg emissions were 48.4% lower, which is mainly the result of using mercury removal units in natural gas production. Nevertheless, total Cd emissions in 2010 were 28.2% higher compared to the previous year, which is a consequence of burning solid fuels and biomass* in the fuel burning sectors, i.e. industry, building construction and general consumption. In addition, Hg emissions were 22% higher due to increased use of natural gas in the above sectors and the power plant sector, which in 2010 also used larger quantities of other energy forms that contain this heavy metal (coal and firewood).

1 Act on Ratification of the Protocol on Heavy Metals to the 1979 Convention on Long-range Transboundary Air Pollution (OG-IT 5/07)

Mercury and Cadmium Emissions into the Air



Source: CEA

Year	1990	1995	2000	2005	2006	2007	2008	2009	2010
Cd	1.32	0.92	0.65	0.6	0.58	0.51	0.47	0.46	0.58
Hg	1.45	0.4	0.55	0.83	0.71	0.76	0.76	0.62	0.75

** Biomass, which according to the EMEP/EEA methodology implies wood, charcoal, wood waste and agricultural waste, is used as energy source in the industry and building construction sectors. Since biomass may be derived from previously used wood, it also contains heavy metals.*

AIR

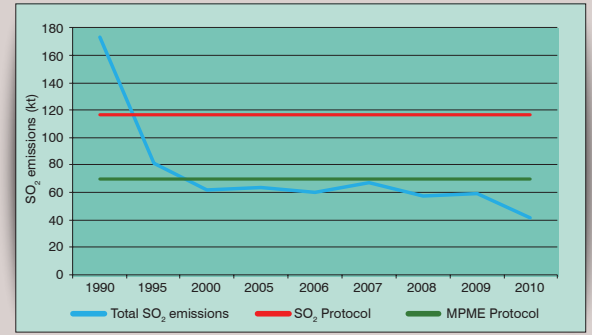
Sulphur Dioxide (SO_2) Emissions

Sulphur dioxide (SO_2) is produced by the burning of fossil fuels that contain sulphur and is the major air pollutant in many parts of the world. Although SO_2 present in the environment is also released by volcanos, the major sources of its emissions in Europe are very anthropogenic activities. In the atmosphere SO_2 forms a bond with water and returns to earth in form of acid rain that is harmful to plant and animal life, and the depositing of this compound onto the soil causes its acidification. It is also a component of urban smog (particularly during winter months) and may cause respiratory diseases such as bronchitis in humans.

Trend and Current State

Total SO_2 emissions in 2010 amounted to 41.5 kt, which is 76% lower compared to the base year 1990. Decreased emissions in this period are the result of using low-sulphur fuels and of higher natural gas consumption. An additional sharp drop in 2010 emissions compared to 2009 (by 30.1%) is the result of the decreased consumption of fuel oil, or the increased consumption of natural gas. Total SO_2 emissions in 2010 were noticeably lower than 70 kt, which is the target set by the Multi-Pollutant, Multi-Effect Protocol (MPME) ratified by the Republic of Croatia in 2008. Total SO_2 emissions in 2010 came from the fuel burning sector (92.6%) and industrial processes (3.1%), while the remaining 4.3% are attributable to fugitive emissions.

Sulphur Dioxide Emissions into the Air



Source: CEA

Year	1990	1995	2000	2005	2010
SO_2 emission (kt)	173.502	81.750	61.629	63.359	41.453

CLIMATE CHANGE

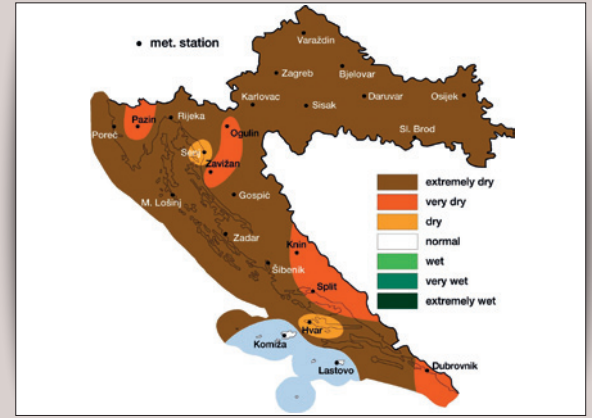
Precipitation Amounts

A decrease in precipitation and long periods of drought have a direct effect on agriculture, hydropower and, consequently, on the economy as a whole and plant and animal life. They are also one cause of forest fires

Trend and Current State

The Republic of Croatia lies in a transitional area between northern Europe, with its high amounts of precipitation, and the desiccation trends of the Mediterranean. In the 20th century and the first decade of the 21st century annual amounts of precipitation showed a mild downward tendency, which is primarily a result of decreased precipitation in autumn, winter and spring and an increase during the summer months. According to the data collected by meteorological stations (maps), in 2011 the continental and the most of the highland and coastal areas of Croatia were in the extremely dry category. Areas lying within the very dry range include the interior of Istria, a part of Lika and Gorski kotar, the Split hinterland and the Dubrovnik littoral, while the Dalmatian islands and the area beneath the Velebit Mountain fell within the dry category. Only the outer Dalmatian islands recorded rainfall within normal limits. The least rainfall was recorded in Bjelovar (386 mm, i.e. 48% of the annual average), on Bilogora Mountain (413 mm, i.e. 49% of the annual average) and in Gospić (682 mm, i.e. 50% of the annual average).

Classification of annual precipitation amounts in 2011 compared to the reference period 1961-1990



Source: MHS

CLIMATE CHANGE

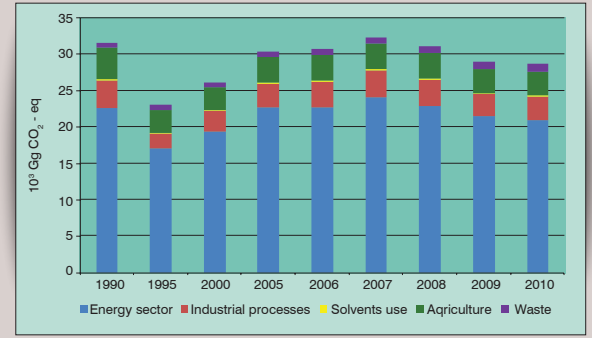
Greenhouse Gas Emissions and Sinks

Greenhouse gases that originate from natural sources (evaporation of the hydrosphere and vegetation, volcanic eruptions, etc.) include CO_2, CH_4, N_2O, tropospheric ozone and water vapour, while the so-called artificial greenhouse gases (HFC, PFC and SF_6) are a result of technological development. An increase in greenhouse gas emissions causes changes in air temperature and precipitation amounts and an increased frequency and intensity of extreme weather events.

Trend and Current State

The Kyoto Protocol[1] ratified by the Croatian Parliament in 2007 obligates the Republic of Croatia to reduce greenhouse gas emissions by 5% in the period 2008 – 2012 compared to the base year 1990.
Total greenhouse gas emissions in 2010 without removal by sinks amounted to 28 598 Gg CO_2-eq, which means that the Republic of Croatia reduced emissions by 7% compared to 1990 by sinks without removals. The major contributor to total greenhouse gas emissions is the energy sector (73% CO_2-eq), whose transport subsector accounts for as much as 29% of the total emissions of this sector. Since 2007, total emissions have shown a downward tendency due to favourable hydrological conditions (electricity generation from hydropower plants) and the decline in cement, lime, iron and ammonia production because of the economic crisis.

Greenhouse gas emissions in the Republic of Croatia by sectors



Source: CEA

1 Act on Ratification of the Kyoto Protocol to the United Nations Framework Convention on Climate Change (OG-IT 7/07)

INLAND WATER

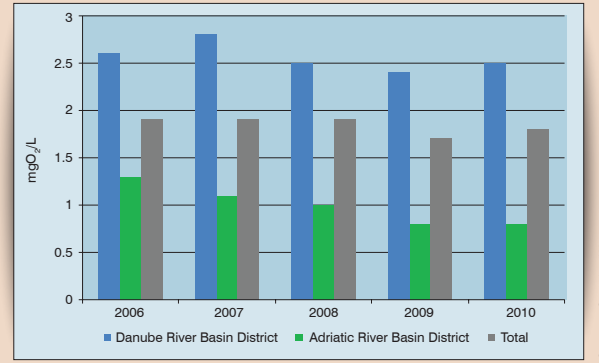
BOD_5 in Rivers

BOD_5 (biochemical oxygen demand) is the amount of oxygen taken up by microorganisms that decompose organic waste matter in water. It represents one of the oldest methods used to determine the degree of organic pollution. Reduced oxygen content in water as a result of decomposition of organic substances causes water quality impairment, and the disruption of the ecological balance may pose a threat to the life of aquatic organisms.

Trend and Current State

The quality of inland surface water in the period 2006–2010 was evaluated under the provisions of the Regulation[1] by which the water quality is categorized in one of five classes (from class I – the highest quality to class V – the lowest quality). The median of annual average concentration values of BOD_5 in the watercourse of the Danube River Basin District corresponded to values for class II, while those of the Adriatic River Basin District corresponded to values of class I water. Given the indicator values, no significant changes were recorded in the period observed. A mild decline in BOD_5 recorded in the Adriatic River Basin District may be attributable to the construction of public sewage systems and the operation of new urban wastewater treatment plants.

Median of annual average concentration of BOD_5 in rivers



Source: Croatian Waters

1 Regulation on Water Classification (OG 77/98, 137/08)

INLAND WATER

Nitrates in Groundwater

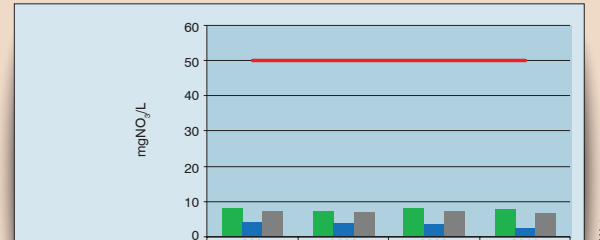
Increased concentrations of nitrates (NO_3) in groundwater are a consequence both of the natural vulnerability of the aquifer and anthropogenic activities (wastewater, agriculture). In the Republic of Croatia almost 90% of the water used for the public water supply is extracted from groundwater, which emphasizes the importance of protecting this resource. It is therefore essential to monitor groundwater quality to evaluate the efficiency of implementing protection measures and to identify activities needed to reach the standards defined.

Trend and Current State

According to Croatian regulations[1] harmonized with European Union directives[2], the quality standard specifies an amount of 50 mg/L nitrates in groundwater and a maximum allowable concentration (MAC) of nitrates in drinking water. Since 2007, the systematic monitoring of groundwater quality has been conducted at about 250 monitoring stations throughout the country. The values of the annual mean concentrations of nitrates in groundwater are higher in the Danube River Basin District than in the Adriatic River Basin District, but they are still lower than the maximum allowable concentration. Nevertheless, elevated nitrate values (sometimes even exceeding the MAC) are recorded in specific areas of the Drava and the Danube River Basins (Varaždin and Ilok) as a consequence of wastewater discharge and agricultural land run-off.

1 Regulation on Water Quality Standard (OG 89/10) and Ordinance on Sanitary Quality of Drinking Water (OG 47/08)
2 Directive 2006/118/EC of the European Parliament and Council of 12 December 2006 on the protection of groundwater against pollution and degradation and Council Directive 98/83/EC of 3 November 1998 on the quality of water intended for human consumption

Median of annual average concentration values of nitrates in groundwater



	2007	2008	2009	2010
Danube River Besin District	7.9	7.4	7.9	7.8
Adriatic River Basin District	4.2	3.9	3.6	2.7
Total	7.4	7.0	7.5	6.7
MAC	50	50	50	50

Source: Croatian Waters

SEA AND COASTAL AREA

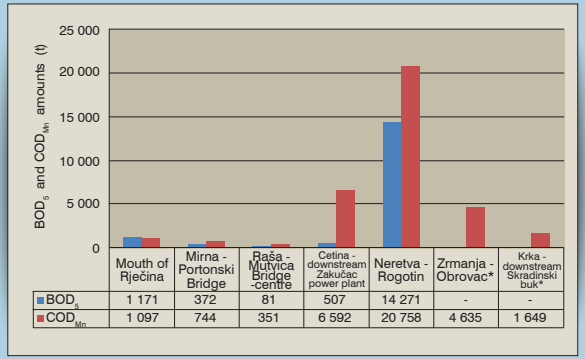
Riverine Loads of Nutrients into Coastal Waters

Riverine input loads of nutrients have a strong impact on the quality of coastal waters. These input/loads are determined based on their annual mean concentrations measured at specific monitoring stations and the annual mean stream flow measured at a related monitoring station. BOD_5, COD_{Mn} and the percentage of saturation and dissolved oxygen concentration are indicators of the oxygen regime in the water. Elevated BOD_5 and COD_{Mn} concentrations indicate the presence of organic pollution whose decomposition requires oxygen.

Trend and Current State

The characteristic of the major watercourses of the Adriatic River Basin District is that most of their courses are situated in neighbouring countries or form a national border. The riverine input of nutrients should therefore be considered in the context of transboundary pollution. Although concentrations of dissolved and suspended matter in the majority of watercourses do not deviate significantly from the natural level, a marked difference in nutrient loads coming from the rivers of the southern Adriatic (Zrmanja, Krka, Cetina, and Neretva) and those of the northern Adriatic (Rječina, Mirna, and Raša) is a result of the larger river basin areas and the greater stream flows of the rivers of the southern Adriatic. When determining the impacts of riverine inflows into the northern Adriatic, the Po River in northern Italy, with a mean annual stream flow of some 1 500 m^3/s, should be taken into account. For the sake of comparison, the mean annual stream flow of Neretva, the largest river of the Adriatic River Basin District, amounted to 374 m^3/s in 2010.

Amounts of riverine inputs (BOD_5 and COD_{Mn}) into coastal waters in 2010



	Mouth of Rječina	Mirna - Portonski Bridge	Raša - Mutvica Bridge -centre	Cetina - downstream Zakučac power plant	Neretva - Rogotin	Zrmanja - Obrovac*	Krka - downstream Skradinski buk*
BOD_5	1 171	372	81	507	14 271	-	-
COD_{Mn}	1 097	744	351	6 592	20 758	4 635	1 649

Source: Croatian Waters

** At measuring stations of Zrmanja-Obrovac and Krka-downstream Skradinski buk no BOD_5 loads were calculated in 2010, because values of concentrations measured were below analytical method detection limit.*

SEA AND COASTAL AREA

Chlorophyll *a* in Transitional, Coastal and Marine Waters

The concentration of chlorophyll a from phytoplankton is an indicator of eutrophication. Combined with other parameters, such as transparency of the sea, the concentration of nutrients, and the oxygen regime, it is used to determine the trophic index (TRIX), according to which the ecological status of marine waters ranges from high, good and moderate to poor. The amount of phytoplankton may increase as a result of waste water discharge and the nutrient (nitrates and phosphates) runoff from agricultural land into the sea, including the river inflows and natural processes (erosion).

Trend and Current State

Low average values of annual chlorophyll a concentrations (below 1 mg/m^3) in the period 2006 – 2010 indicate that the overall ecological status of the maritime zone of the Republic of Croatia may be graded as high. Elevated chlorophyll a values are typical of specific areas directly affected by rivers or groundwater. Thus, a good ecological status is recorded in Bakar Bay (marked impacts of groundwater) and Kaštela Bay. The status is expected to improve once the systematic collection, treatment, and discharge of wastewater and rainwater has been established. A moderate ecological status was recorded in the area of Šibenik Bay because of wastewater discharged by adjacent settlements that are still not connected to the public wastewater discharge system. Although the state in this area is still unsatisfactory, it is considerably better than the period before 2000, when significant eutrophication events were frequently recorded during the summer months.

Annual mean concentration of chlorophyll *a* (0-10m)

Source: IOF, Split

SOIL AND LAND

Soil Organic Carbon Content

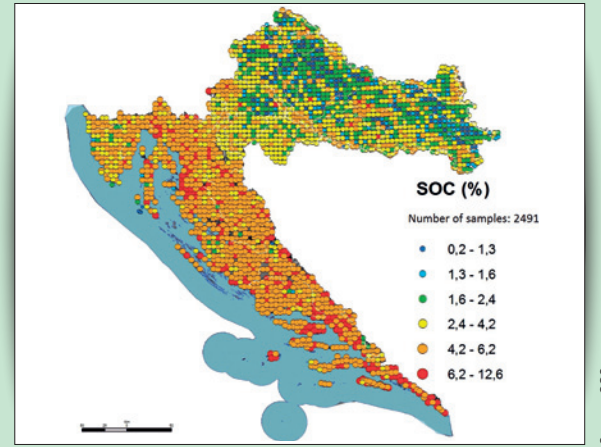
Soil organic carbon (SOC) is the main component of organic matter in soil composed of plant, animal and microorganism residues. A high SOC content is an indicator of the soil quality and health, and it implies fertile soil with high production potential.

Trend and Current State

The content of SOC depends on soil structure, climate conditions, topography, vegetation cover, land management, and land use. As a rule, forest land and grasslands are abundant in organic matter and therefore have higher SOC concentrations (4-12.6% in soils of the Republic of Croatia). Since intensive agricultural production has negative effects on the SOC content (0.2-6.2% in the agricultural land of the Republic of Croatia), efforts are being made to implement sustainable land management practices and agricultural techniques that will reduce organic matter losses in the soil and ensure carbon inputs.

Apart from carbonate rocks, the highest carbon stocks on the planet are found in soils (twice the amount in the atmosphere and three times the amount found in the total vegetation on the planet). Due to increased public awareness of climate change, more attention is being paid to maintaining the current carbon stocks in soil and to carbon sequestration in the soil to reduce CO_2 concentrations in the atmosphere and to mitigate the effects of global warming.

Soil organic carbon content in the Republic of Croatia



Source: CGS

BIODIVERSITY

Share of Protected Areas in the Total Area of the Republic of Croatia

Protected areas are the backbone of the overall protection and conservation of biological and landscape diversity and the key sites of the ecological network. The designation of areas as protected; the administration, management and supervision of individual protection categories, and the method of revoking protection in case of the disappearance of those features for which an area was designated as protected are governed by law.[1] Protected areas are classified into nine categories of spatial protection.

Trend and Current State

According to the Register of Protected Areas of the Ministry of Environmental and Nature Protection, the Republic of Croatia has 433 areas protected under various categories in 2012. They cover 8.5% of the total area of the country – 7.8% refers to the territory and 0.7% to the territorial sea.[2] The majority of protected areas are comprised of nature parks (57%) and important landscapes (17.8%). The largest protected area is the Velebit Nature Park (203 608 ha), which together with the Northern Velebit and Paklenica National Parks located within its boundaries, accounts for 27% of the total protected areas in the Republic of Croatia. Since the conservation status of these areas is being continuously revised (the status of protected area may be revoked or reclassified, or the size of a protected area can be enlarged or reduced), the Register is subject to constant change.

Number and size of protected areas in the Republic of Croatia in 2012

Protection category	No. of protected areas	Territory (ha)	Marine part (ha)	Total (ha)
Strict reserve	*2*	*2 395.35*	*0*	*2 395.35*
National park	*8*	*73 566.77*	*21 905.59*	*95 472.36*
Special reserve	*80*	*32 094.66*	*12 007.38*	*44 102.04*
Nature park	*11*	*401 754.64*	*17 866.99*	*419 621.63*
Regional park	*2*	*102 791.82*	*0*	*102 791.82*
Nature monument	*85*	*190.42*	*0*	*190.42*
Important landscape	*85*	*123 306.10*	*8 988.43*	*132 294.54*
Forest park	*33*	*3 270.09*	*0*	*3 270.09*
Park architecture monument	*127*	*937.70*	*0*	*937.70*
Parts within larger protected areas	*-*	*57 856,70*	*429.00*	*58 285.70*
TOTAL	**433**	**682 450.85**	**60 339.39**	**742 790.24**
Share of protected areas in total area of the Republic of Croatia (%)	*-*	*7.8*	*0.7*	*8.5*

Source: MENP

1 Nature Protection Act (OG 70/05, 139/08, 57/11)
2 Status as per March 2012

BIODIVERSITY

High Nature Value Farmland in the Republic of Croatia

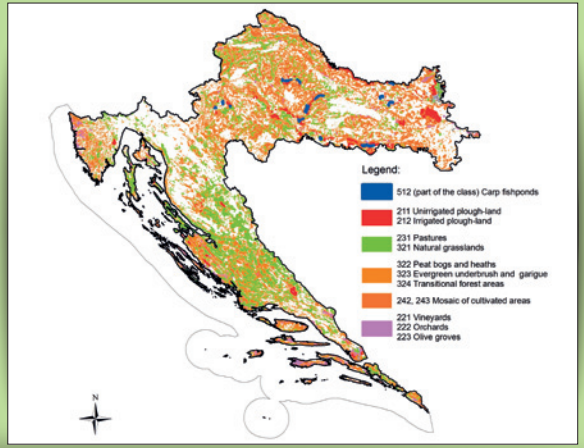
High nature value areas are characterized by low-intensity management that supports high biodiversity. Consequently, a greater share of high nature value (HNV) farmland areas in the total land area is an indicator of a higher biodiversity.

Trend and Current State

The methodology[1] for identifying HNV farmland is based on the data contained in the Corine Land Cover (CLC 2000), at the same time taking into consideration the distribution of areas of importance for biodiversity. Areas of the selected CLC classes are combined with areas of international and national importance for biodiversity, including important bird areas,[2] prime butterfly areas,[3] and the NATURA 2000 ecological network sites. As a specific feature of Croatia, freshwater fishponds of high nature value are included in HNV farmland. That analysis generated an indicative map of the Republic of Croatia showing that 54.4% of the land is categorized as HNV farmland. Since these important areas may be endangered by abandoning or intensifying agricultural production, it is necessary to monitor their status and trends in terms of areas subject to adequate management methods.

1 Paracchini et al., 2008
2 IBA (Important Bird Areas)
3 PBA (Prime Butterfly Areas)

Indicative map of high nature value farmland in the Republic of Croatia



Source: SINP/CEA

FORESTRY

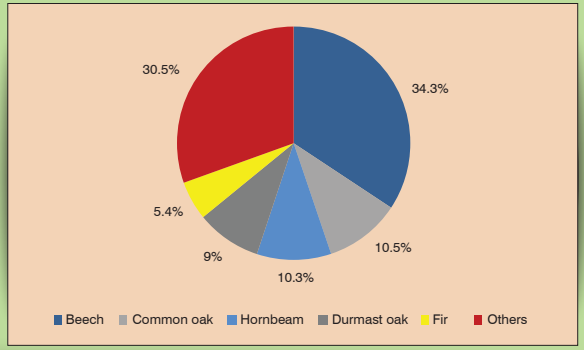
Annual Increment by the Type of Trees

The annual increment is an indication of the annual increase in the volume of individual trees that results in carbon capture by biomass and its removal from the atmosphere. This contributes to the reduction of greenhouse gas emissions and, ultimately, has an effect on climate change mitigation. The calculation of the annual increment, the wood stock and the allowable cut is of utmost importance for the future of sustainable forest management.

Trend and Current State

Forests and forest land in the Republic of Croatia are managed on the basis of forest management schemes for specific areas that are adopted for a ten-year period. The current Forest Management Scheme was adopted in 2006 and will be in force until 2015. According to data from that document, the annual wood stock increment is estimated at 10.5 million m^3, about 8 million m^3 of which is in state-owned forests and about 2.1 million m^3 is in privately owned forests. For the preparation of an annual felling plan (annual allowable cut) it is important to monitor data on the annual increment by individual types of trees. Common beech shows the highest annual increment (34.3%). It is followed by common oak (10.5%) and other types of trees (all together 30.5%). By proper management, which implies that the annual wood stock increment exceeds the annual felling plan, sustainable forest management will be ensured and the mitigation of climate change taken into account.

Annual increment by types of trees, 2005 - 2015



Source: Croatian Forests

GENETICALLY MODIFIED ORGANISMS

Presence of GMO in Food of Plant and Animal Origin on the Market of the Republic of Croatia

A genetically modified organism (GMO) is an organism whose genetic material has been altered by the insertion of foreign genetic material. In this way it is possible to create new properties that the organism did not possess. A genetically modified organism is a potential threat to human health and the environment as a whole.

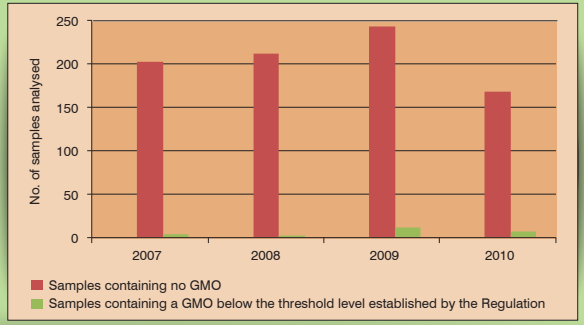
Trend and Current State

The National GMO Monitoring Programme for Products of Plant and Animal Origin[1] is being prepared and coordinated by the Department for Sanitary Inspection of the Ministry of Health in conjunction with the Croatian National Institute of Public Health and the Croatian Food Agency. During implementation of the programme in the Republic of Croatia in the period 2007–2010, not a single sample was found in which the GMO content exceeded the threshold level established by the Regulation[2] (<0,9 %). GMO amounts lower than the threshold level represented adventitious and technologically inevitable presence of traces of GMOs. Such products are not labeled as products containing GMOs. Of 175 samples analysed in 2010, 168 (96%) showed no presence of GMOs, and the GMO content found in seven samples (4%) did not exceed the threshold level established by the Regulation. Most of the samples in which the presence of GMOs was detected belonged to the group of products based on soybean and maize.

1 Act on Genetically Modified Organisms (OG 70/05, 137/09), Food Act (OG 46/07,155/08, 55/11)

2 Regulation on the Minimum Threshold for Genetically Modified Organisms in Products below which the Products Placed on the Market do not have to be Labelled as Products Containing Genetically Modified Organisms (OG 92/08, 36/09, 33/10, 88/11)

Results of analysis of product samples for the presence of GMOs



Source: MH

AGRICULTURE

Consumption of Mineral Fertilizers

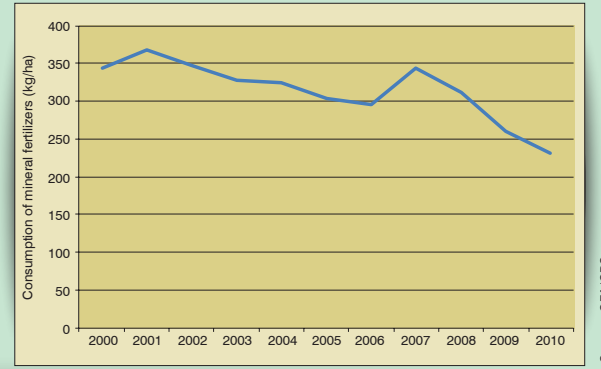
Intensive agriculture is inconceivable without the use of mineral fertilizers, but it is precisely this use that is a potential cause of many adverse effects on the environment (soil and groundwater pollution, greenhouse gas emissions, harmful effects on biodiversity, surface water eutrophication, etc.), and indirectly on human health, too.

Trend and Current State

According to data provided by the Croatian Bureau of Statistics, the annual consumption of mineral fertilizers in the last decade averaged around 380 000 t. It has been significantly declining for some years now. The same source reveals that in 2010 the amount of fertilizers by the unit of land area under intensive agriculture totalled only 230 kg/ha, a 33% decline in consumption compared to 2000 (344 kg/ha). This is basically due to the shortage of funds needed to purchase the seeds, mineral fertilizers, pesticides, etc., which resulted in lower yields and a reduced intensity of agricultural production.

Although a reduction in the amounts of mineral fertilizers has a positive effect on the environment, growing crops without adequate fertilization impoverishes the soil, which is unacceptable in the long run. It is therefore vital to stress the importance of sustainable agricultural production based on a well-balanced input of mineral and organic fertilizers.

Consumption of mineral fertilizers



Source: CEA/CBS

WASTE MANAGEMENT

Wastewater Treatment Sludge Used in Agriculture

Sludge generated by the wastewater treatment process may only be used in agriculture if it is treated so that pathogenic organisms are destroyed and the content of heavy metals and organic matter does not exceed the limit values prescribed by the Ordinance[1].

Trend and Current State

Most of the sludge coming from wastewater treatment plants are stored at the point of generation or transported to landfills, while a small quantity is used in agriculture and undergoes other recovery and disposal operations. According to the data submitted under the Ordinance[1] only 426 t of dry substance of the sludge were used in 2010 in agriculture and 9 t for fertilization of soil in forests and green areas.
In 2010, only 86 281 t of sludge generated by (municipal and industrial) wastewater treatment plants were reported to the Environmental Pollution Registry (EPR). Of that amount, the Central Municipal Wastewater Treatment Plant of the City of Zagreb accounted for 64% and was used for storing the quantity generated over a number of years (200 267 t). Although there are more than 100 municipal wastewater treatment plants operating in the Republic of Croatia, only one-quarter of them submit data to the EPR.

1 Ordinance on the Management of Wastewater Treatment Sludge Used in Agriculture (OG 8/08)

Reported quantities of wastewater treatment sludge delivered by producers for further recovery/disposal

Data on total wastewater treatment sludge*	2009	2010
Stored (t)	*50 555*	*54 934*
For disposal (t)	*14 596*	*18 288*
For composting (t)	*681*	*5 077*
Other (t)	*14 039*	*7 982*

**reported to the Environmental Pollution Registry*

Data on sludge when used in agriculture**	2009	2010
Used in agriculture (dry substance in tons)	*459*	*426*
Used for soil fertilization in forests and green areas (dry substance in tons)	*10*	*9*

***according to the Ordinance[1]*

Source: CEA

WASTE MANAGEMENT

Waste Containing Asbestos

Asbestos is a fibrous silicate mineral used commercially for its good physical properties as an additive in the manufacture of a variety of building construction materials. As a component, asbestos has no adverse impact on the environment or human health, but when it becomes inadequately treated waste, asbestos fibres and dust reach the air and can pose a threat to human health.

Trend and Current State

Since December 2008, following the adoption of the Ordinance[1], 16 companies[2] have been taking over waste containing asbestos from citizens. According to the records of the Environmental Protection and Energy Efficiency Fund (EPEEF), 8 566.24 t of this type of waste were collected by the end of 2011.
The collected waste is deposited in landfill cells constructed at the locations of official municipal waste landfills. By the end of 2011, 15 landfill cells were built; two more are under construction. The total capacity (17 landfill cells) is 65 950 m^3. By the end of 2011, they had received 4 598.04 t of waste containing asbestos. A total of 3 486.14 t were exported, while a smaller part remained in the storage areas of the companies.

1 Ordinance on the Method and Procedures for Asbestos Waste Management (OG 42/07)

2 Decision on the Procedures of the Environmental Protection and Energy Efficiency Fund Concerning Implementation of Emergency Measures for Organizing the System for the Collection and Disposal of Waste Containing Asbestos (OG 92/08)

Amounts of waste containing asbestos deposited from December 2008 to the end of 2011

County	Landfill Cell Name	Landfill Cell Capacity (m^3)	Deposited (t)
Bjelovar-Bilogora	*Cerik*	*1 800*	*137.86*
Koprivnica-Križevci	*Ivančino brdo*	*3 500*	*314.18*
Dubrovnik-Neretva	*Lovornik*	*3 400*	*0.96*
	Dubravica	*2 000*	*1.21*
Split-Dalmatia	*Vučje brdo - Plano*	*3 000*	*150.76*
	Košer	*1 500*	*0*
	Wellington	*1 500*	*0*
Virovitica-Podravina	*GO Virovitica*	*9 000*	*1 109.71*
Karlovac	*Ilovac*	*9 000*	*199.68*
Lika-Senj	*Čojluk*	*2 500*	*1 656.67*
	Rakitovac	*5 000*	*0*
Vukovar-Srijem	*Petrovačka dola*	*6 000*	*941.61*
City of Zagreb	*Jakuševac*	*6 000*	*0*
Slavonski Brod-Posavina	*Vijuš-Jug*	*3 000*	*0*
Zadar	*Diklo*	*7 000*	*85.40*
Primorje-Gorski Kotar	*Sović laz**	*850*	*0*
Međimurje	*Totovec**	*900*	*0*
TOTAL		**65 950**	**4 598.04**

** under construction*

Source: EPEEF

WASTE MANAGEMENT

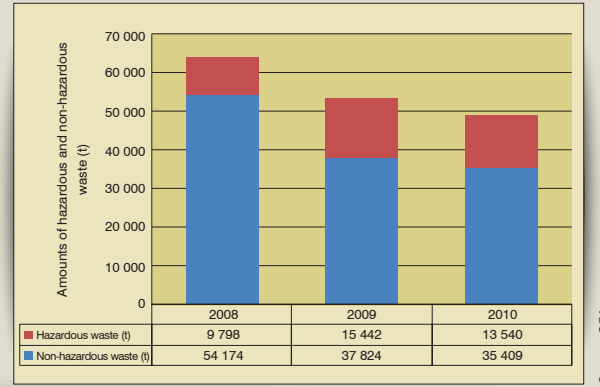
Incineration/Co-incineration of Waste

Incineration/co-incineration of waste carried out in special plants may cause emissions of hazardous substances into the air, water and soil and have harmful effects on human health. Incineration residues are treated and/or recovered to minimize their quantities and harmful effects.

Trend and Current State

Of 64 companies with a permit for the thermal treatment of waste, 28 have a permit for waste incineration/co-incineration. According to data provided by the Environmental Pollution Registry (EPR), 25 companies reported incineration of waste in the Republic of Croatia in 2010. Almost the entire amount of waste, 48 896 t, was treated by incineration with energy recovery and only 54 t without energy recovery. The total share of incinerated waste is 23.5% lower compared to 2008 when 63 439 t were treated by incineration with energy recovery and 533 t without energy recovery.
The reported share of hazardous waste incinerated in 2008 was 15.3%; the rest was non-hazardous waste. In the following years this ratio changed so that non-hazardous waste on average accounted for 70% and hazardous waste for 30% of the total amount of incinerated waste. While in 2008 almost 60% of waste was incinerated in Vukovar-Srijem County, since 2009 waste incineration has been carried out in 11 counties (mostly in Varaždin, Istria and Split-Dalmatia Counties). During the period observed, most of the waste that was incinerated came from wood processing, waste oils, waste fuels and waste tires.

Incineration /co-incineration of waste



	2008	2009	2010
Hazardous waste (t)	9 798	15 442	13 540
Non-hazardous waste (t)	54 174	37 824	35 409

Source: CEA

ENERGY

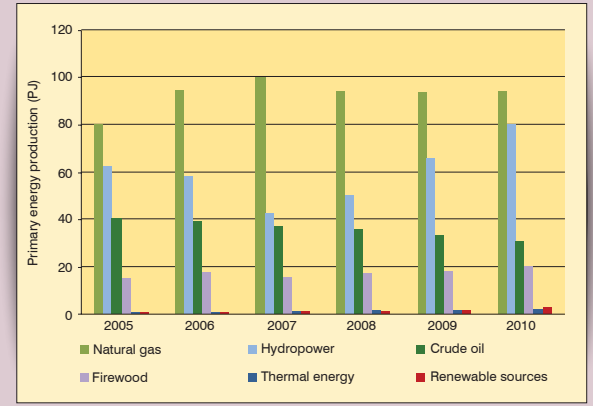
Primary Energy Production

Primary energy is a usable form of energy obtained from nature, i.e. from a specific source, that has not been subjected to any conversion process. This includes fossil fuels (brown and pit coal, crude oil, natural gas, firewood, etc.) and renewable energy sources (solar and wind energy, hydropower, thermal energy from geothermal sources, potential energy of watercourses, etc.). Depending on the kind of primary energy source, it can have a varying effect on the environment.

Trend and Current State

Since 2007, primary energy production has been steadily growing, mostly because of increased hydropower (an increase of as much as 21.2%) and favourable hydrological conditions. Apart from oscillations in energy generation from hydropower and natural gas, energy production from crude oil dropped markedly in the period observed by an average annual rate of 5.2%, while electricity generation from thermal energy grew at a rate of 22.9% and from firewood at a rate of 5.9%. Although present to a lesser degree, primary energy production from renewable energy sources (wind energy, biodiesel, solar energy, geothermal energy, landfill gas and biogas) grew dynamically at an annual rate of as much as 67.4% in the period observed.

Primary energy production



Source: EIPH

ENERGY

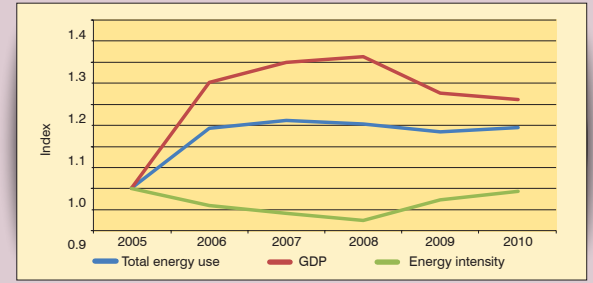
Total Energy Use Intensity

Economic growth requires higher energy consumption, which increases the load on all environmental components. However, by increasing energy efficiency, i.e. by the economical use of energy, it is possible to achieve economic growth and preserve the environment at the same time. The trend of separating energy consumption from economic growth is monitored through energy intensity which indicates the energy required to produce a unit of gross domestic product (GDP).

Trend and Current State

The period 2005 – 2008 has seen a desirable decrease in total energy use intensity at an average annual rate of 2.6%. However, the average annual growth rate of energy intensity in the period 2005 – 2010 was only 0.1% lower because of a significant decline in GDP and the stagnation of total energy consumption (since 2008). Compared to the average energy intensity in the European Union (EU 27), energy intensity in the Republic of Croatia in 2010 was 14.6% higher, which clearly indicates that there is considerable potential for improving energy efficiency. The EU policy framework has established minimum requirements for the improvement of efficiency of direct energy consumption. An annual energy efficiency improvement of 1% in the period 2008 – 2016, as provided for by the ESD[1], can reasonably be achieved under Croatian socio-economic conditions. By investing in energy efficiency projects (building construction) and ensuring economic growth, it will be possible to reduce energy intensity and to protect the environment in a sustainable manner.

Energy intensity index (2005=1)



Source: EIHP

1 Energy Services Directive (Directive 2006/32/EC of the European Parliament and Council of 5 April 2006 on energy end-use efficiency and energy services and repealing the Council Directive 93/76/EEC)

INDUSTRY

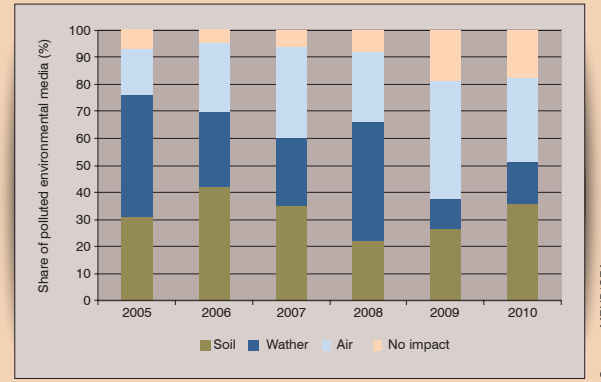
Share of Polluted Environmental Media

Industrial emergencies may have a harmful effect on both the environment and human health. Continuous planning, implementation, and enhancement of the environmental management system by operators and all other actors involved in control and protection will reduce the number of accidents and the pollution of environmental components (environmental media).

Trend and Current State

As a rule, soil pollution is the result of oil pipeline leakages, fuel leakages caused by car accidents, fuel dumping and the disposal of tanks containing effluents. The polluting of rivers, lakes and the sea occurred in cases of the discharge of oil derivatives (mainly in marinas, ports and refineries), shipyard activities, dumping of contaminated packaging material into rivers and traffic accidents in which tanker trucks and similar vehicles overturned close to a watercourse. Air pollution incidents were caused by fires, waste incineration, pollutant emissions from industrial installations and mechanical damage caused to the installations.
The CEA has established two databases – the Registry of Installations in which Dangerous Substances are Present (RIDS) and the Register of Reported Major Accidents (RRMA) – with data on the number and type of emergencies and major accidents in the Republic of Croatia that will be used for reporting to the European Commission.

Share of polluted environmental media



Source: MENP/CEA

TOURISM

Overnight Stays by Types of Accommodation Facilities

The data on the share of overnight stays by types of accommodation facilities are used for monitoring the development of tourist accommodation and burdens imposed by the tourist industry on the surroundings (utility infrastructure, local population, etc.) and the environment (water, soil, biodiversity, etc.). Apart from indisputably positive economic effects, tourist development must necessarily be accompanied by increased capacities of wastewater treatment and waste disposal and by planning for and control of the protection of the space and protected natural assets of the Republic of Croatia.

Trend and Current State

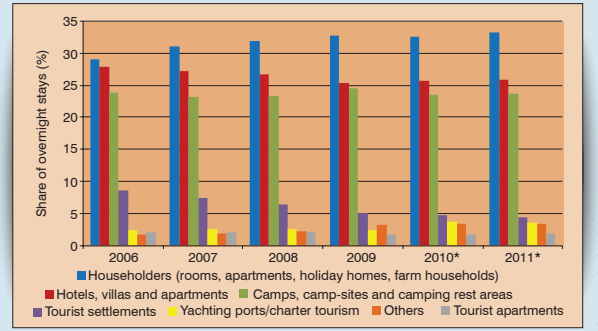
Since 2006, the number of overnight stays in collective accommodation establishments[1] has been rising at an average annual rate of about 2% and in private accommodation establishments (households) at about 6%. With some 14.8 million overnight stays in 2001 the categories of camp-sites and camping rest areas, which belong to collective accommodation establishments, saw the largest increase (a rate of 3.2%). In the same period, growth was also recorded in the categories of Others[2] and Charter Tourism – a million overnight stays each, which were the highest growth rates (19% and 12.7%, respectively). Since 2010, the number of overnight stays in charter tourism has been growing because a new law[3] has made it obligatory to pay the tourist tax when renting a sailing vessel (yachts, boats). Until 2009 this tax was paid at the yachting port, i.e. in the marina where the tourists stayed overnight; payment was often evaded by staying overnight at an anchorage in one of the coves along the coast.

1 Hotels, villas and apartment hotels; Tourist settlements; Tourist apartments; Boarding houses; Motels; Camps, camp-sites, and camping rest areas; Rooms; Vacation resorts; Hostels; Inns; Sanatoriums; Yachting ports; Non-classified establishments and others.

2 Rooms, apartments, studio-apartments, holiday homes, climbers' lodgings, hunting lodges, Robinson Crusoe accommodation facilities, pupils' and student dormitories, etc.

3 Tourist Tax Act (OG 152/08, 59/09)

Share of tourist overnight stays by selected types[4] of accommodation establishments



Source: CBS/CCC

4 Selection encompasses the most common categories of tourist accommodation

FISHERIES

Aquaculture Production

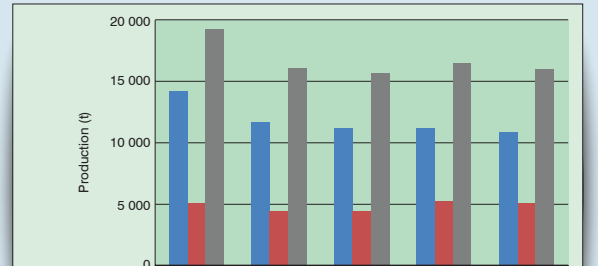
Aquaculture production implies the farming of fish and other aquatic organisms in mariculture and freshwater aquaculture. The release of nutrients from aquaculture facilities into the aquatic ecosystem may influence its quality and thus cause pressure on the environment as a whole.

Trend and Current State

In the period 2006 – 2010 a decline in aquaculture production, with some fluctuations, was observed compared to the upward trend experienced in the previous ten years. The decrease in total mariculture production since 2007 was mostly caused by a decline in the production of tuna due to limitations imposed on tuna catch quotas to protect the Bluefin tuna stock. Another reason for this decrease came from the changed methodology of monitoring shellfish farming because oyster production is now measured in pieces rather than weight. At the same time, the white fish production continued to increase.

Since 2009, total freshwater fish-farming has seen a rise in the production of trout (cold water) species, while the production levels of carp (warm water) species have not varied significantly. At present, freshwater aquaculture produces about 5 000 t of fish, compared to as much as 12 000 t produced in the 1990s. Given the availability of resources, measures should be taken to recover and maintain this production, especially given the importance of freshwater aquaculture for the conservation of biodiversity.

Aquaculture production



	2006	2007	2008	2009	2010
Mariculture	14 200	11 680	11 211	11 200	10 892
Freshwater aquaculture	5 067	4 395	4 458	5 266	5 048
Total Aquaculture	19 267	16 075	15 669	16 466	15 940

Source: CBS/ MA

TRANSPORT

Public Passenger Transport

The monitoring of the number of passengers in rail, road (passenger cars and buses), maritime, coastal and air transport plays an important role in analysing environmental impacts of transport.

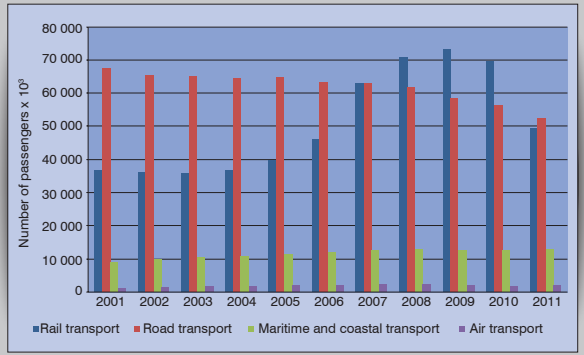
Trend and Current State

The total number of passengers transported was highest in 2008, which was followed by a continual decrease. The number of passengers transported in 2011 was 20.9% lower than in 2008, which is mostly attributable to the continuing effects of global recession and the change in the data collection methodology[1]. Viewing the figures individually, the number of passengers in road transport in the period 2001-2011 was continually decreasing. Compared to 2008, which is considered the year that proceeded the period of recession, the share of passengers in road transport in 2011 was as much as 15.3% lower.

In the period 2001–2009 the number of passengers in rail transport increased, which is a positive trend given the fact that this kind of transport is environmentally acceptable. However, the following year saw a drop of 6.1% compared to 2009 and in 2011 this number was 32.5% lower as a result of suspending the co-financing of free public transport in the City of Zagreb (since 1st July 2011) and the change in the method of calculating the number of passengers in inland transport (applied since 2011)[1]. Since 2008, there has been a decrease in the number of passengers in air transport, while the number of passengers in maritime and coastal transport has not changed significantly since 2007.

1 Since 2010 the calculation has excluded subsidized tickets and has been based on the number of tickets and passes sold for city and suburban transport.

Passenger transport by public means of transportation



Source: CBS

TRANSPORT

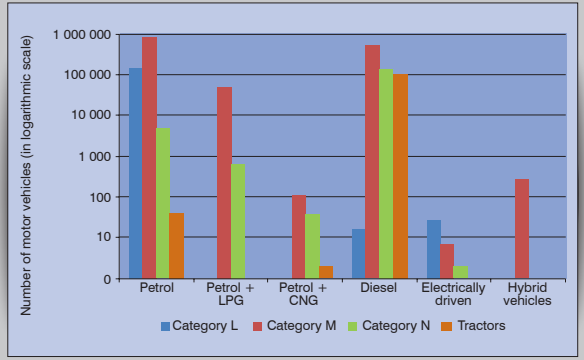
Number of Motor Vehicles According to their Type and Fuel Used

Vehicles classified by type into the categories of L - mopeds, motorcycles, light four-wheelers and four-wheelers; M – passenger cars and buses; and N – trucks and a special category of tractors are subject to regular technical inspection each year. The data on their number according to the type of fuel they use (petrol, petrol + LPG, petrol + CNG, diesel, electric, and hybrid vehicles) is used to monitor the increase or decrease in the consumption of each type of fuel.

Trend and Current State

In the period 2006 – 2011 the majority of L and M category vehicles used petrol, followed by diesel. However, the number of vehicles using alternative fuels has increased in recent years. While under the category L there has been a rise in the number of electric mopeds (from three in 2006 to 27 in 2011), only one category L hybrid vehicle was registered in 2011. The situation with category M vehicles is different; the number of electric vehicles registered in 2011 was only seven (only one in 2006), but the number of hybrid vehicles reached 259 (there were only eight in 2006).
In the period 2006–2011 the number of category N vehicles increased by 15%, with the biggest rise recorded for vehicles using petrol + CNG (by 691%). In the same period the number of vehicles under the category of tractors, which primarily use diesel fuel, increased by 11%. All other types of fuel under this category are almost negligible (their share in the number of vehicles is only 0.04%).

Number of motor vehicles according to the their type and fuel used in 2011



Source: VCC

HEALTH AND SAFETY

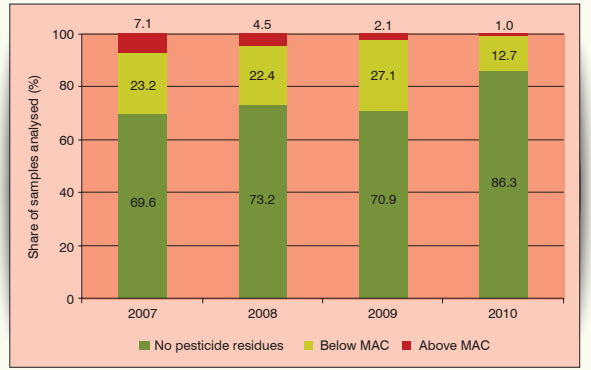
Pesticide Residues in Food

Careful use of pesticides helps increase yield and has an effect on the conservation of the quality of plant products, especially fruit and vegetables. Their application is, therefore, widely accepted. However, if pesticides are not used in the prescribed manner, they can be harmful to humans, animals and the environment.

Trend and Current State

The control of pesticide residues in food is carried out by the National Programme for Monitoring Pesticide Residues in and on Products of Plant Origin, which represents only one component of official control. Its preparation and coordination fall are the responsibility of the Ministry of Agriculture. It is implemented in coordination with the Ministry of Health, the Croatian National Institute of Public Health and the Croatian Food Agency.
According to the results of monitoring that began in 2007 and that analysed product samples (head cabbage, onion, lettuce, tomato, peach, apple, rice, potato, carrot, orange, strawberry, banana, pasta, bread) from markets and shopping malls in Zadar, Rijeka, Osijek, Varaždin, Slavonski Brod, Pula, Zagreb and Zagreb County, it can be concluded that the content of pesticides in food in 2009 lay below the average exceedance of MACs in EU countries (where it is about 4%). It should be noted that in the EU countries the analysis of products is carried out for 246 active substances, while Croatian laboratories analysed 88 active substances or 107 if metabolites are included.

Results of analysing pesticide residues in selected products



Source: MA

GENERAL ENVIRONMENTAL ISSUES

State of the Environment Reports at the Local and Regional Level

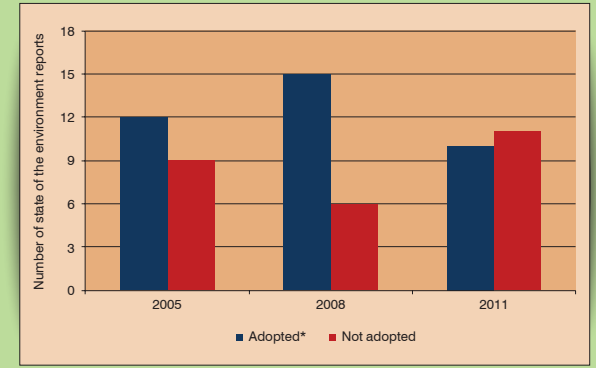
According to the Environmental Protection Act[1], states of the environment reports are prepared by local and regional governments and the City of Zagreb and other large towns for a four-year period. The reports monitor the implementation of the environmental protection programmes that are adopted at the local and regional level pursuant to that law and brought into line with the Environmental Protection Plan of the Republic of Croatia.

Trend and Current State

A state of the environment report monitors the achievement of objectives and the implementation of environmental protection measures, and it provides integrated insight into the state of the environment in the counties, the City of Zagreb and large towns. In 2005, a report for a four-year period was adopted by 12 counties, after which evident progress was reported. By the end of 2008, this document had been adopted by five more counties and the City of Zagreb. However, previously adopted reports of certain counties ceased to be valid (three cases), so that in 2008 reports were in force in 15 counties. In the meantime, the reports prepared by some other counties ceased to be valid due to expiry of the four-year period. Therefore there were only 10 reports in force in 2011.
In regard to the fulfillment of the statutory obligation to prepare reports for large towns, of 22 large towns only Sisak prepared a report (2009). The state of the environment reports are available in the database of documents on sustainable development and environmental protection that can be found on the website of the Agency. In this way the general public and the environmental inspectorate have access to information concerning the adoption, contents and implementation of sustainable development and environmental protection documents.

1 OG 110/07

Status of the number of state of the environment reports adopted and not adopted by the counties and the City of Zagreb in 2005, 2008 and 2011



Source: CEA

* *Reports in force*

GENERAL ENVIRONMENTAL ISSUES

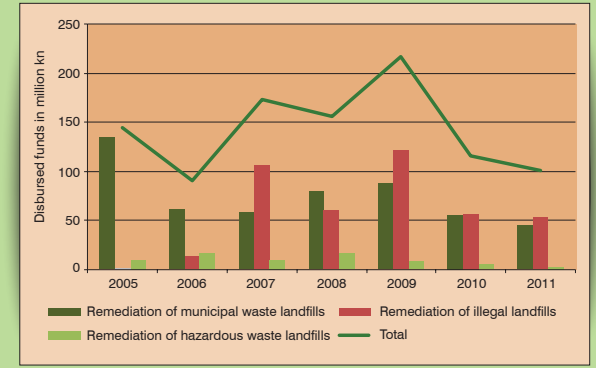
Investments in Remediation of Landfills Using Funds Collected by the EPEEF

The enforcement of the statutory regulation[1] to pay charges under the "polluter pays principle" has secured a source of funds to finance environmental protection programmes and projects. Those programmes include the remediation of municipal waste landfills, sites polluted by the depositing of hazardous waste and illegal landfills.

Trend and Current State

In 2005, most funds were disbursed for the remediation of municipal waste landfills (134 903 192 kn) and in 2009 for the remediation of sites polluted with hazardous waste (120 371 389 kn). Compared to the above mentioned categories, the funds disbursed for the remediation of illegal landfills are considerably lower. The total amount for the entire period observed was 66 500 930.51 kn. In the period 2005 – 2011 the amount of funds disbursed for the remediation of landfills was 996 454 290.98 kn, which is 70.14% of the total funds allocated to environmental protection programmes and projects.
Of the 299 landfill sites used to deposit municipal waste for whose remediation the co-financing through the EPEEF was contracted, by the end of 2011 remediation was completed at 106 sites. 750 illegal landfills were also remediated.

Funds disbursed by the EPEEF for landfill remediation



Source: EPEEF

1 Act on the Environmental Protection and Energy Efficiency Fund (OG 107/03)

GENERAL ENVIRONMENTAL ISSUES

Investments in Energy Efficiency Programmes and Projects

Energy efficiency[1] and the use of renewable energy sources (RES)[2] contribute significantly to the reduction of harmful anthropogenic effects on the environment and to the greater competitiveness of the national economy. The EPEEF collects funds for the implementation of such programmes and projects from persons obliged to pay such fees.

Trend and Current State

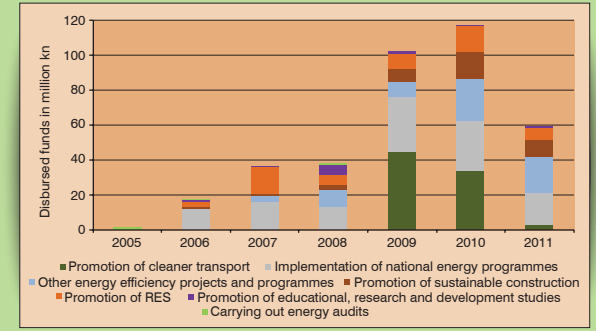
In the period observed the majority of the funds were disbursed for the implementation of national energy programmes (119 445 681.53 kn), the promotion of cleaner transport (81 732 361.80 kn), and for other projects and programs (66 424 140.06 kn). In 2005, energy audits were also carried out. National energy programmes and the promotion of projects for renewable energy sources and sustainable construction have been implemented since 2006. Until 2010 these funds and the funds for other energy efficiency programs and projects* increased. In 2009 and 2010, most of the funds were used to promote cleaner transport, i.e. the replacement of road vehicles with vehicles that met improved ecological standards[3]. A small part of the funds was disbursed in 2011 after competitive bidding in 2010.
From 2005 to 2011 the EPEEF disbursed 373 242 075.26 kn for energy efficiency programmes and projects. However, the amounts disbursed in 2001 were considerably less than in previous years because of the reduced scope of business and economic activities of beneficiaries and the lower budget resources of local governments.

1 The National Energy Efficiency Programme of the Republic of Croatia for 2008-2016 (harmonized with the Directive 2006/32/EC) has set the following target: energy savings of 9% of the total annual energy saving (according to the data for the period 2001 – 2005).

2 The Energy Development Strategy of the Republic of Croatia (OG 130/09) has set the following target: the share of renewable energy sources in direct gross energy consumption in 2020 will be 20%.

3 The funds were disbursed on the basis of the tenders invited by the EPEEF in conjunction with the MMATI and in accordance with the programme for reducing the adverse effects of transport on the environment aimed at implementing the first measure: reduction of exhaust gas emissions from road vehicles (categories N2, N3, M3).

Funds disbursed by the EPEEF for energy efficiency programmes and projects



Source: EPEEF

**e.g. the project "Bring Your House in Order" of the Government of the Republic of Croatia, and the project "Systematic Energy Management in Towns and Counties of the Republic of Croatia"*

PUBLIC RELATIONS

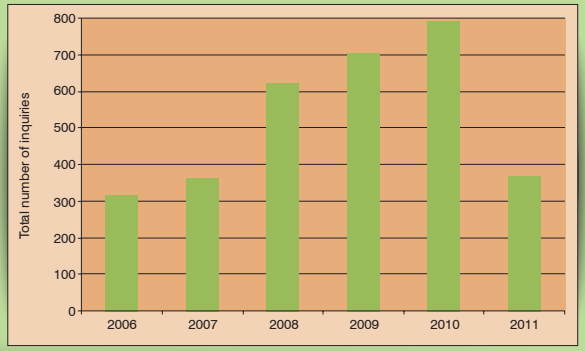
Number and Breakdown of Public Inquiries Addressed to the Croatian Environment Agency, 2006 – 2011

The Agency provides public access to environmental information and data by publishing data, information, databases, reports and other environmental documents on its website, and by responding to requests for information from the public.

Trend and Current State

In the period 2006 – 2011 the Agency received 3 215 inquiries. The majority of these inquiries (48%) related to waste issues; half of them were submitted by private companies involved in waste handling. The number of requests for data from the EIS is increasing (30.8%), with the greatest interest shown in the Environmental Pollution Registry (EPR) in the last four years. Similar interest was expressed in general environmental protection issues (6.6%), air/climate (5.5%) and water/sea (4.3%). The lowest interest was in soil (1.9%), sectoral pressures (1.7%) and nature (1.2%). The reduced number of inquiries in 2011 compared to the previous year (53% fewer) is the result of the Agency's website redesign, which has made it possible for website visitors to find data and information more quickly and easily.
Apart from the interest of private sector (52%), the number of inquiries submitted by citizens is rising significantly (15.7%), followed by those submitted by LSGUs (7.6%), foreign institutions and companies (6.9%), the scientific community (4.6%), state-owned companies (4.2%) and the ministries (3.7%). In six years NGOs have submitted only 41 inquiries (1.6%) and the share of schools and medical institutions is similar (1.3%). Public institutions (1.3%) and website visitors involved in projects (0.8%) are at the very bottom of the list.

Total number of inquiries addressed to the Croatian Environment Agency



Source: CEA

THE ENVIRONMENT IN YOUR POCKET

Acronyms and Abbreviations

AAR – Annual average rate

BOD_5 – Biological oxygen demand in five days

CBS – Croatian Bureau of Statistics

CEA – Croatian Environment Agency

CGS – Croatian Geological Survey

CH_4 – Methane

CL – City landfill

CLC – Corine Land Cover

CNG – Compressed Natural Gas

CO_2 - Carbon dioxide

COD_{Mn} - Chemical oxygen demand

EI – Environmental Inspectorate

EIHP – Energy Institute Hrvoje Požar

EIS – Environmental Information System

EPEEF – Environmental Protection and Energy Efficiency Fund

EPR - Environmental Pollution Registry

ESD – Energy Services Directive (Directive 2006/32/EC of the European Parliament and the Council of 5 April 2006 on energy end-use efficiency and energy ser vices and repealing Council Directive 93/76/EEC)

EU – European Union

GDP – Gross domestic product

Gg – Gigagram (10^9 g)

GMO – Genetically modified organism

HFC – Hydrofluorocarbon

HNVFA – High natural value farmland area

IOF – Institute of Oceanography and Fisheries

IPCC – Intergovernmental Panel on Climate Change

kt – Kilotons (10^3 t)

THE ENVIRONMENT IN YOUR POCKET

Acronyms and Abbreviations

LPG – Liquid Natural Gas

LSGU – Local self-government unit

MA – Ministry of Agriculture

MAC – Maximum allowable concentration

MENP – Ministry of Environmental and Nature Protection

MH – Ministry of Health

MHS – Meteorological and Hydrological Service

MMATI – Ministry of Maritime Affairs, Transport and Infrastructure

MPME Protocol – Multi-pollutant, Multi-effect Protocol

NGO – Non-governmental organization

N_2O – Nitrous oxide

OG – Official Gazette

PFC – Perfluorocarbon

PJ – Petajoule (10^{15} J)

RES – Renewable energy sources

REDS – Registry of Establishments in which Dangerous Substances are Present

RRMA – Register of Reported Major Accidents

SF_6 – Sulphur hexafluoride

SINP – State Institute for Nature Protection

SO_2 - Sulphur dioxide

SOC – Soil organic carbon

TRIX – Trophic Index

VCC – Vehicle Center of Croatia

THE ENVIRONMENT IN YOUR POCKET

Glossary

Allowable cut – The amount of wood stock or a forest area intended for felling

Carbon sequestration – Capturing and storing atmospheric carbon (from CO_2) in soil by means of biological and physical processes

Charter tourism – As a service of the nautical tourism according to the Tourist Industry Act (OG 8/96, Art. 53), it encompasses sailing and stay of tourists on leased sailing vessels (yachts and boats) for holiday and recreational purposes

Emergency case – An occurrence caused by uncontrolled activities or influences that may pose a risk to human life and health and be harmful to the environment

Energy intensity – A measure indicating the total quantity of energy required to produce a unit of gross domestic product

Eutrophication – A process by which a body of water becomes enriched with nitrates, nitrogen and/or phosphorus compounds that stimulate excessive growth of algae and higher forms of plant species, causing an undesirable imbalance of aquatic organisms and changes in the status of waters

Fugitive emissions (diffuse, non-persistent) – Emissions of volatile organic compounds into the air, soil and water from solvents contained in a product, released into the environment through windows, doors, vents and similar openings rather than exhausts

Hybrid vehicle – A vehicle that uses at least two different energy converters and two different energy storage systems (within the vehicle) intended for automobile propulsion

L category vehicle – Two-, three- and four-wheel powered motor vehicles (mopeds, motorcycles, tricycles, four-wheelers) classified on the basis of homologation (Ordinance on Vehicle Homologation (OG 138/11))

Maximum residue limit – The statutory maximum allowable concentration (MAC) of pesticide residues in or on food or feed based on good agricultural practices established to ensure the lowest possible exposure of consumers and to protect vulnerable consumer population

M category vehicle – A motor vehicle with at least four wheels, used for carrying passengers and classified on the basis of homologation

NATURA 2000 - A European ecological network of protected areas of importance to species and habitat types as defined by the Birds Directive and the Habitats Directive

N category vehicle – A vehicles with at least four wheels used for carrying goods and classified on the basis of homologation

Renewable energy sources – Energy sources that do not become exhausted by their use and that include solar and wind energy, hydropower and geothermal energy.

Pesticide – A compound of one or more active substances of chemical or biological origin intended for preventing, reducing, attracting, repelling, destroying or controlling pests, insects and mites, including undesirable types of plants

Primary energy – Energy found in nature and not subjected to any conversion process, regardless of whether it is the chemical potential of fossil fuels, wood biomass, nuclear energy, the kinetic energy of wind, the potential energy of watercourses or thermal energy from geothermal sources

Stock – or a bio stock means specimens of the same species inhabiting a certain geographical area and almost not mating at all with specimens from other areas (members of a stock share the same genetic material)

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