



The Environment In Your Pocket I-2016

THE ENVIRONMENT IN YOUR POCKET

THE ENVIRONMENT IN YOUR POCKET I - 2016

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THE ENVIRONMENT IN YOUR POCKET

Basic Data on the Republic of Croatia

Mainland surface area	56 594 km ²
Territorial sea surface area	31 479 km ²
Coastline length	6 278 km
Islands, rocks, reefs	1 185
Highest mountain summit	Mt. Dinara, 1 831 m
Counties	21
Cities and municipalities	556 (128 and 428)
Population	4 238 389
Population density per km ²	74.7
Populated islands	48
Language	Croatian
Alphabet	Latin
Political system	Parliamentary democracy
GDP per capita in 2015	10 364 EUR

THE ENVIRONMENT IN YOUR POCKET

Introduction

Economic activities contribute to human wellbeing and reduction of poverty. At the same time, linear economy per principle “take – make - use – discard” burdens the environment and weakens the resistance of ecosystems. Long-term exploitation of natural resources is greater than the planet’s ability to regenerate them. The growth of population and of the living standard requires a more intense exploitation of natural resources, and it is predicted that from today’s 7 billion, the population will rise to 9 billion in 2050. The projection of the population growth with simultaneous climate change that we are witnessing additionally point out the need for a faster and more efficient transition to green economy, which will, led by policies and innovations, support the manufacture with sustainable preservation of resources.

In December 2015 the European Commission adopted the Circular Economy Package¹, as a part of green economy. It represents an integration of different policies and is a significant step towards EU goal: “to live well within the planet’s

ecological limits”. Apart from goals for improvements in waste management, e.g. by increasing recycling or reducing waste disposal, this policy is supplemented with measures for ensuring a more efficient use of resources (ecological product design, improvement of their durability, possibilities of fixing and reusing them etc.). Responsible implementation of this Package is expected to decouple the economic growth from exploitation of resources and energy. Eco-industry is a proof that this policy can yield expected results. For example, a growth of new jobs related to renewable energy, wastewater treatment, waste management, air pollution control etc. was recorded in the last ten years, despite the global economic recession. Specifically, the projection of the European Commission is around 600,000 new jobs in the waste management sector by 2030.

Risks associated with the increase of resource prices and pressures on ecosystems can be shown by main indicator called “material productivity” which is measured as gross domestic product (GDP) over domestic material consumption. Cu-

¹ http://ec.europa.eu/environment/circular-economy/index_en.htm

THE ENVIRONMENT IN YOUR POCKET

Introduction

Currently available data indicate that Croatia has no favourable ratio of the created economic value and material consumption. However, in recent years this trend has been improved, so material productivity in Croatia was 1 EUR/kg in 2014. The ideal material productivity growth is achieved economic growth while reducing material consumption. Therefore, one of the main objectives of the circular economy policy is decoupling economic growth from the exploitation and import of materials as raw materials for production, which is closely connected with reduction waste generation and reuse waste. In brief, improved waste management system is foundation of stable and continuous development of circular economy. Circular economy policy led by the Ministry of Environment and Nature Protection will be successful if all other sectors get involved in - from research and development, production and consumption, to education and services. The crucial is change in current behaviour patterns of citizens, it is announced that will be in focus, for example, home composting, strengthening the system of separate waste collection and centres for repair and reuse of discarded products.

The monitoring of circular economy policy in EU-28 will mean the obligation of collecting, processing, sharing and publications of data and comparable indicators which are now defined in the areas of efficient use of materials and waste management. The Croatian Agency for the Environment and Nature collects data and creates indicators not only for monitoring the state of the environment (air, water, sea, waste, biodiversity, climate change etc.), but also for so-called integrated themes, such as sustainable production and consumption, resource efficiency and circular economy. By publishing data and condition assessment for decision-makers, scientific, professional and wider public, will be monitored successful shifts towards a circular economy.

Croatian Agency for the Environment and Nature

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AIR

Air Quality in Urban Areas: Pollutant H₂S

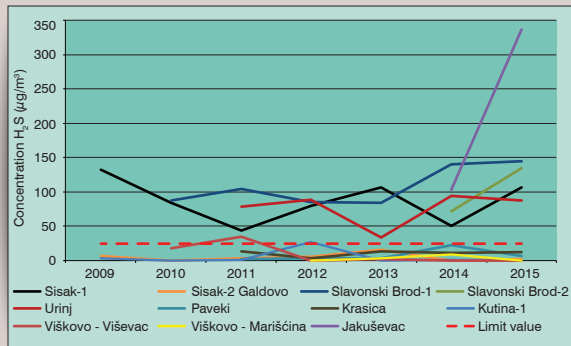
Hydrogen sulphide (H₂S) is a colourless, toxic and flammable gas with a characteristic odour which can be compared to the smell of rotten eggs. It is present in the atmosphere in concentrations not dangerous to human health, but due to its foul odour, it affects the quality of life. H₂S air pollution is monitored primarily due to its foul odour, in measurement stations located near potential sources of pollution (refineries, waste disposal sites, mineral fertilizer factories).

Trend and current state

On the territory of the Republic of Croatia, concentrations of H₂S are measured in Rijeka (industrial zone Urinj), Kutina and Sisak, and since 2010 in Slavonski Brod. From the beginning of measurement, the results from measurement stations Slavonski Brod-1 and Slavonski Brod-2 show that hourly concentrations exceed the allowed limit value¹ and that the air quality is of second category². Also, in Sisak, at measurement station Sisak-1 and in Rijeka, at measurement station Urinj, the air quality was of second category in regards to H₂S. Since September 2014 measurements are performed on Jakuševac landfill, which show a large number of exceedances of hourly limit values. At measurement stations Kutina-1, Sisak-2, Pa-

veki, Krasica, Viševac and Marišćina, the number of exceedances of hourly limit concentrations was lower than permitted (first category), except in 2011 at measurement station Viševac-Viškovo and in 2012 at measurement station Kutina-1, when the air quality was of second category.

Air quality in urban areas: pollutant H₂S



¹ According to the Regulation on the levels of pollutants in the air (OG 117/12), the limit values for H₂S are determined in regards to the quality of life (vexation by smell), and the permitted number of exceedances of hourly limit values in one year is 24 times.

² According to the Air Protection Act (OG 130/11, 47/14): 1st category of air quality – clean or negligibly polluted air, 2nd category of air quality – polluted air



AIR

Trend of Emissions of Ozone Precursors NO_x , NMVOC, CO and CH_4

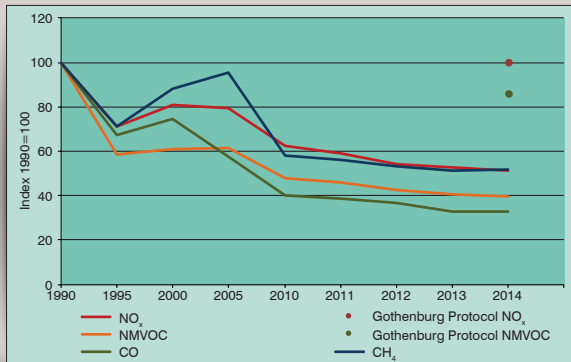
Ground-level ozone is an integral part of city smog and a big problem in many cities, especially during summer months. It is created by complex chemical reactions with the presence of sunlight from compounds NO_x , NMVOC, CO and CH_4 , the so-called ozone precursors, which are emitted by transport and industry. Excess accumulation of ozone in lower layers of atmosphere can cause problems with human respiratory organs, and it has adverse effects on the growth of forests and crops. Concentrations of ground-level ozone distinctively depend on meteorological conditions, as well as transboundary transport of its precursors from other countries.

Trend and current state

Emissions of ozone precursors are decreasing, especially in regards to the base year 1990. The reduction of emissions of NO_x and CO is a result of reduced fossil fuel consumption in the sector of energy, especially transport, due to the introduction of catalytic converters in cars and stricter standards for emissions. The reduction of emission of NMVOC is a consequence of using the best available techniques in the sector of solvent usage. Sources of emission of CH_4 are fugitive emissions from fuel use and the sectors of agriculture and waste disposal. Ground-level ozone is a

regional problem because of long-range transboundary transports of its precursors, so the implementation of commitments from the Gothenburg Protocol¹ set a goal of common solution of emissions of these compounds on European level. Croatia fulfils its commitment from the Gothenburg Protocol, i.e. emissions of NO_x and NMVOC are lower than the permitted emission quota.

Emissions of ozone precursors



Source: CAEN

¹ The Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone (OG – IA 4/08) is based on approach "multiple effects of multiple pollutants" and defines upper limit values of emissions of SO_2 , NO_x , NMVOC and NH_3 .



CLIMATE CHANGE

Deviation from the Mean Air Temperature

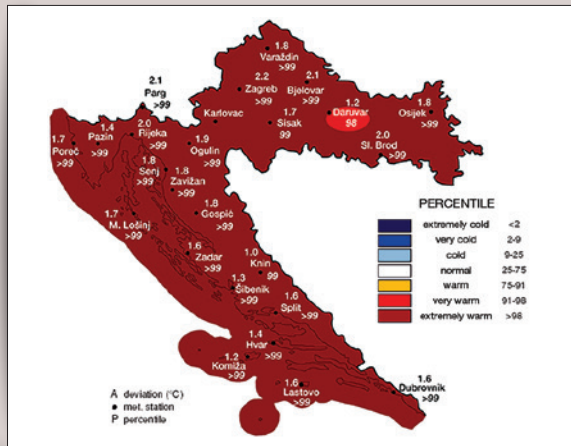
Air temperature deviation is monitored in regards to the reference 30-year period (1961 – 1990) with associated classes: extremely cold, very cold, cold, normal, warm, very warm and extremely warm. If there is a significant air temperature deviation in regards to the usual (mean) values measured during the reference period, we speak about a climate anomaly. Such an occurrence can influence the plant and animal world as well as the human life and health.

Trend and current state

On the territory of Croatia, the annual mean air temperature in 2015 was above the average of the reference 30-year period. Anomalies of the annual mean air temperature were between 1.0 °C (Knin) and 2.2 °C (Zagreb-Grič).

According to the distribution of percentiles, climate conditions in Croatia in 2015 are dominantly described as extremely warm, with the wider Daruvar area categorized as very warm. Apart from this, by comparing the annual mean air temperature values for Zagreb-Grič in the period from 1862 to 2015, it is clear that beside 2012, 2015 was the second warmest year since the beginning of measurements (at observatory Zagreb-Grič the annual mean air temperature in 2015 was 13.7°C). A positive trend of the annual mean air temperature (1.02 °C / 100 years) for Zagreb-Grič is obvious, which points out to the fact that the air temperature in Croatia still follows the trend of global warming with some inter-annual oscillations.

Deviation from the mean air temperature
in Croatia in 2015





CLIMATE CHANGE

Greenhouse Gas Emissions from Transport

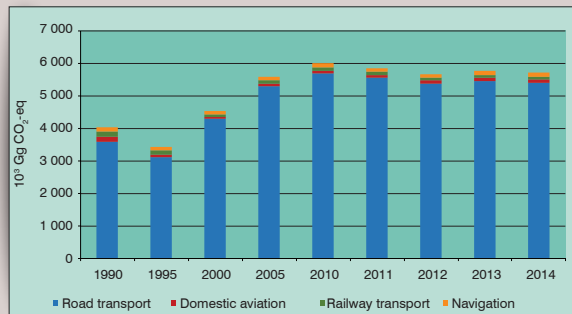
Greenhouse gas emissions and sinks are monitored in five main sectors: energy, industrial processes and product use, agriculture, land use, land use change and forestry and waste management. The energy sector covers all activities relating to the burning of fossil fuels (in stationary and mobile sources) and fugitive emissions from fuel. Subsector transport is one of five subsectors within the energy sector and it includes the fuel combustion from road, air and railway transport and navigation.

Trend and current state

In 2014 the energy sector contributed to the total national greenhouse gas emissions with the share of 75% of CO₂-eq. The largest part of emissions within this sector was generated by fuel combustion from the transport subsector (around 32%), and viewing the mode of transport, the largest contribution to emissions was made by road transport (94.4%). Navigation, as well as domestic aviation individually hold share of about 2%, while the environmentally most acceptable railway transport has a share of only 1.3%. From 1990 to 2010 the growing trend of emissions from the transport subsector is a consequence of increase of mobility, i.e. daily commutes to work and the number of road vehicles. In comparison to 1990, emissions of CO₂-eq from the transport subsector were increased by 41.9%. However, since 2010 the total emissions are slightly declining, mostly because of the impact of the economic crisis. Combating the emissions from transport is the most demanding, because the implementation of measures is

slow and dependant on the improvement of technical characteristics of motor vehicles as well as their price for the final user.

Emissions of greenhouse gasses from transport subsectors



Transport mode/10 ³ Gg CO ₂ -eq	1990	1995	2000	2005	2010	2011	2012	2013	2014
Domestic aviation	0.156	0.08	0.056	0.068	0.083	0.092	0.096	0.105	0.107
Road transport	3.585	3.126	4.29	5.314	5.702	5.553	5.383	5.463	5.401
Railway transport	0.154	0.119	0.096	0.108	0.101	0.093	0.088	0.083	0.074
Navigation	0.136	0.1	0.088	0.102	0.118	0.119	0.113	0.123	0.138
Total	4.031	3.425	4.53	5.592	6.004	5.857	5.68	5.774	5.72

Source: CAEN



INLAND WATER

Water Pricing

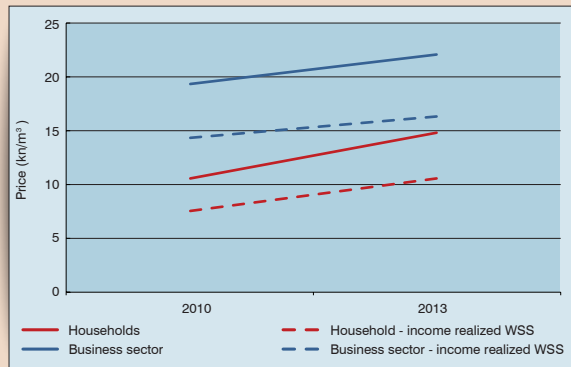
Water is a public good, so it is important to enable its availability to all users and manage that resource in an economical and socially responsible way. Therefore, the Water Framework Directive¹, which was transferred into Croatian law with the Waters Act², promotes the water price policy per principle of return of costs from water services. This encourages a more efficient use of waters, taking into account the principle "polluter pays". According to the Blueprint to Safeguard Europe's Water Resources³, the price of water should be determined in a way which reflects its true value.

Trend and current state

Water services are under the competence of local government units (LGU) and the activities of public water supply and public sewage system are performed by public water service suppliers (WSS). Besides the costs of WSS, VAT, legal mandatory and voluntary water fees are added to the price of water. The lowest basic price and types of water service costs are prescribed by the Regulation⁴. The average price of water the households paid in 2013 was 14.8 kn/m³, and the price range on the state level was between 9.23 kn/m³ and 27.79 kn/m³. The reasons for such

big differences in prices are the technical characteristics of the system, connected labour and maintenance costs as well as different scopes of service.

Average price of water services for households and business sector



¹ Directive 2000/60/EC of the European Parliament and of the Council from 23 October 2000 on establishing the framework for Community activities as regards to water policies (OJ L 327, 22 Dec 2000)

² Waters Act (OG 153/09, 130/11, 56/13, 14/14)

³ Blueprint to Safeguard Europe's Water Resources COM (2012) 673

⁴ Regulation on the lowest basic price of water services and the type of costs the price of water services covers (OG 112/10)



SEA AND COASTAL AREA

Riverine Loads of Nutrients into Coastal Waters

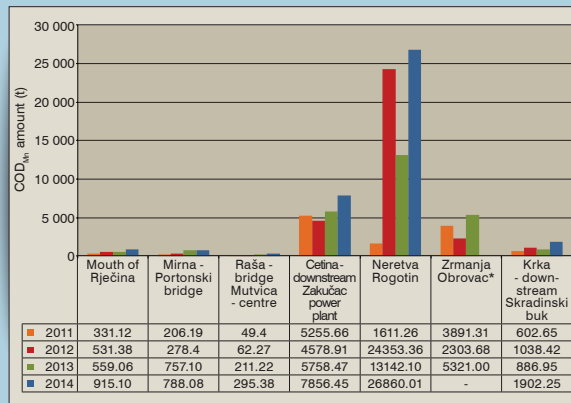


On the basis of mean annual concentrations of nutrients (ammonia, nitrate, nitrite, total nitrogen, total phosphorus) and mean annual flow measured at hydrological stations, the spatial and time distribution of organic loading brought by rivers into the coastal waters is monitored. Organic loading is also monitored by measuring the chemical oxygen demand (COD_{Mn}) and biological oxygen demand (BOD_5), whose increased values point to the presence of organic matter in water.

Trend and current state

In 2014 the inflow of organic loading by rivers into coastal waters increased, which was reflected in the increased values of COD_{Mn} . The reason of this occurrence was the increased flow in comparison to three previous years. Measurements show a trend of COD_{Mn} increase in stations Cetina, Neretva and Krka, where the highest values since 2007 were recorded (since the data became available). In 2014 at North Adriatic basin stations (Rječina, Mirna, Raša) and South Adriatic basin stations (Cetina, Neretva and Zrmanja) the environmental condition was evaluated as good, while station Krka had a very good environmental condition.

Riverine input of nutrients into coastal waters (COD_{Mn})



* COD_{Mn} was not measured at station Zrmanja Obrovac in 2014

Source: IOF



SOIL AND LAND

Soil Degradation in Županjska Posavina caused by the Flood of 2014

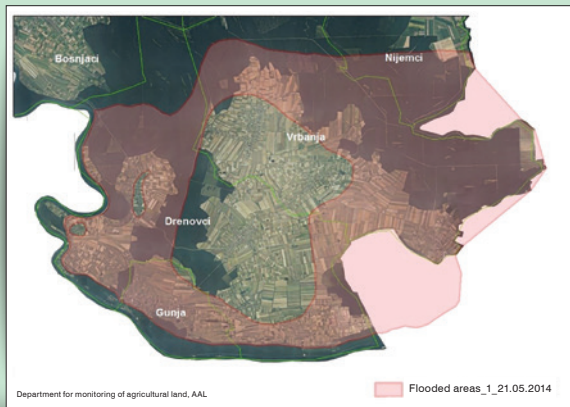
Between February and October of 2014, torrential rains caused floods in almost all parts of Croatia. The worst damages happened in rural areas, especially in the villages of Županjska Posavina (municipalities Gunja, Vrbanja and Drenovci), where a levee broke in May, flooding, among other, 7,854 ha (41.51%) of agricultural areas, registered in ARKOD¹, where the water remained for about 3 weeks.

Trend and current state

In the aforementioned municipalities, the Agency for Agricultural Land (AAL) performed soil sampling in June 2014. Basic agrochemical soil analyses were done and the mechanical content of soil, total content of heavy metals and organic pollutants were determined in accordance with the Ordinance². The results of chemical analyses confirm that the flood waters did not cause soil pollution. Increased values of chromium (Cr), nickel (Ni) and zinc (Zn) were detected, but according to the data from the Basic Geochemical Map of the Republic of Croatia³, increased total contents of Cr, Ni and Zn of geogenous origin were detected in Županjska Posavina, which represents a natural state of the mother substrate. The biggest problem of all flooded area is the physical degradation of soil: increased compaction as a consequence of retaining flood waters and disturbing the water-air relation in the soil, deposited

flood material, but also the degradation caused by the passing of construction mechanization during sanation.

Flooded areas of Županjska Posavina in 2014



¹ ARKOD – the national system of identification of land parcels, i.e. agricultural land use record in the Republic of Croatia.

² Ordinance on the protection of agricultural land from pollution (OG 9/14)

³ Croatian Geological Survey 2009, J. Halamić, S. Miko



BIODIVERSITY

Threats to Wild Species on the First Level of IUCN Classification

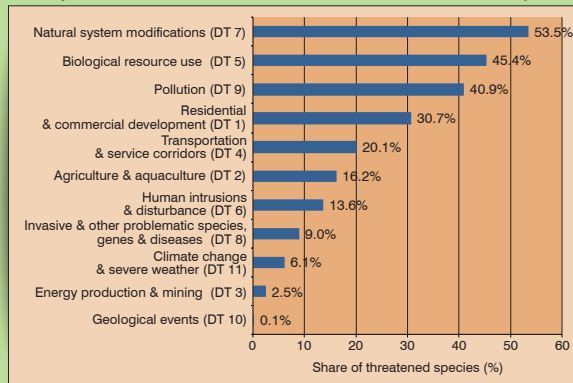
Assessment of threat status of wild species is conducted in accordance with the certain criteria of the IUCN¹ which prescribes the standards for red lists, as well as the rules and criteria for assessment of threat status of wild species. The exact number of wild species in Croatia is still unknown, but about 40,000 of them have so far been recorded. So far, for 2,954 species (7.4%) threat status has been assessed.

Trend and current state

In spite of the implementation of certain conservation actions for species and their habitats, many species in Croatia are still threatened. When making red lists and red books it is necessary to determine the direct threats to those species, and they have been determined for 1,201 species. The biggest direct threats (DT) are the modifications of natural ecosystems with impact on 643 species (53.5%), followed by the exploitation of biological resources with impact on 545 species (45.4%), and pollution, with impact on 491 species (40.9%). Impacts caused by the construction of dams and water management are dominant within the modifications of ecosystems as the most significant threat. Exploitation of biological resources refers to the hunting of wild animals and cutting trees for production of wood products. Waste liquids from agriculture, households and sewers have one of the most significant impacts

when it comes to pollution. As of late, the influences of climate change are becoming more and more apparent. They are considered one of the main causes of threats to biodiversity in the world.

Causes of threats [overview on the first level of IUCN classification]



Source: CAEN

¹ International Union for Conservation of Nature



BIODIVERSITY

Collecting Terrestrial Plants

In the period between 2008 and 2014, 470 requests for commercial collecting of 250 different protected wild plants for the purpose of processing, trade and other traffic¹ were received. In that period the number of submitted requests doubled and it is assumed it will continue to grow. There are no data on the quantity of plants collected for personal use.

Trend and current state

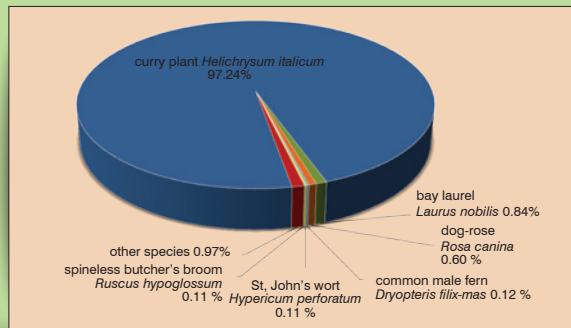
In accordance with reports submitted by the holders of permit to collect protected wild plants and their parts to the Ministry of Environmental and Nature Protection, during the 2008-2014 period in the total collected quantity of all plant parts, the above-ground parts of the curry plant (*Helichrysum italicum*) predominated with a share of 97.24%. It is followed by bay laurel (*Laurus nobilis*) leaves, sprouts and gems, dog-rose (*Rosa canina*) fruits and seeds and above-ground parts of common male fern (*Dryopteris filix-mas*), St. John's wort (*Hypericum perforatum*) and spineless butcher's broom (*Ruscus hypoglossum*). Of other plant parts, the largest quantities of flowers were collected from common hawthorn (*Crataegus monogyna*) and the largest quantities of under-ground parts from sweet flag (*Acorus calamus*). According to the quantities of collected plant parts in the mentioned period, it is easy to see a trend of growth, especially of above-ground parts, which is predominately related to the curry plant (*Helichrysum italicum*), but also of flowers and seeds, related to dog-rose (*Rosa canina*).

The curry plant grows on dry and open habitats along our coast

¹ Commercial collecting of plants is regulated by the Ordinance on the collection of protected wild growing plants for the purpose of processing, trade and other reasons (OG 154/08)

and on the islands. Sprouts and flowers are collected for their medicinal purposes, especially for production of essential oil, due to a growing demand on the international market witnessed in the past years (cosmetic industry). Generally, uncontrolled and intensive collecting represents a pressure on the plant populations, and it can cause a degradation of plant's habitat. The solution is efficient surveillance and education.

Shares of plant species in the total collected quantity of different plant parts in the period 2008-2014





FORESTRY

Forest Damage Caused by Transboundary Air Pollution

Air pollution is the most significant factor of forest dieback, so in 1985 as a part of the Convention¹ the International Cooperative Programme on Assessment and Monitoring of Air Pollution Effects on Forests (ICP Forests²) were established. Croatia has participated in this programme since 1987, when it started its first permanent monitoring of forest ecosystems. The national coordination centre is the Croatian Forest Research Institute (CFRI) which on the basis of monitoring provides detailed information and produces reports on damage to forests³.

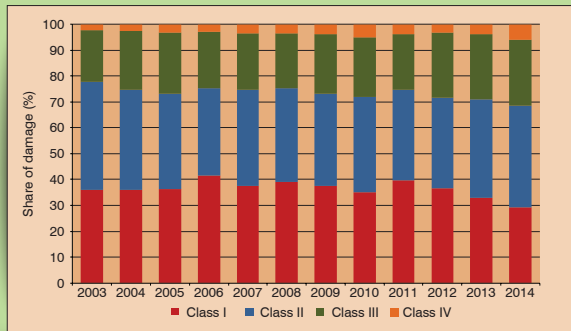
Trend and current state

Parameters of assessment of the damage to forest ecosystems are defoliation and decolouration. Defoliation classes are determined on the basis of those parameters: class 0 = 0 – 10% (no defoliation), class I = 11 – 25% (low defoliation), class II = 26 – 60% (moderate defoliation) and classes III and IV > 60% (severe defoliation). During 2014 the CFRI performed a control assessment of tree crown damage at 103 points of the bio-indicator network. The assessment determined an increase of significant tree defoliation compared to the previous year. The highest number of damaged trees falls into the class I (39.4%).

Classes II, III and IV are considered for determining significant tree defoliation. According to that classification, in 2014 the most

vital tree was the common beech with the share of 25.46% of significantly defoliated trees compared to the total number of beech trees. Beech is followed by pedunculate oak with 29.7%, Aleppo pine with 42.1%, and severely damaged species are the common fir with 62.4% and black pine with 53.5% of significant defoliation. Significant changes compared to 2013 happened to the narrow-leaved ash, whose condition obviously deteriorated, as significant defoliation was 23.6% in 2013 and 49.1% in 2014.

Tree defoliation per classes



Source: CFRI

¹ Republic of Croatia has been a party to the Convention (*Convention on Long-range Transboundary Air Pollution – LRTAP*) since 8 October 1991 (OG-IA 12/93).

² International Cooperative Programme on Assessment and Monitoring of Air Pollution Effects on Forests

³ www.icp.sumins.hr



AGRICULTURE

Agricultural Areas in the System of Conventional, Integrated and Ecological Agricultural Production

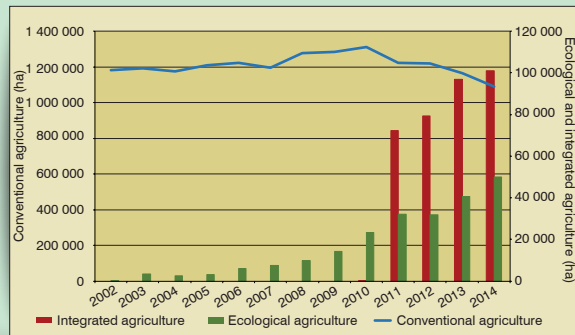
Conventional agriculture uses agrochemicals, which can cause damage to soil, water and air or reduce biological diversity. In the long term, this type of agricultural production has the potential to degrade natural resources; e.g. it reduces soil fertility as the basic component of the environment. For a number of years, the systems of sustainable agricultural production – ecological and integrated, have been present in the world. They balance the demand and economic profit with protection of the environment and human health. In recent years, introduction of such systems has intensified in Croatia as well, which is recorded in official Registries¹.

Trend and current state

After witnessing a 10% growth of agricultural areas in conventional agricultural production prior to 2010, in the period between 2010 and 2014 a decrease of 17% was recorded. This decrease is primarily caused by a growth of ecological and integrated production systems which are implemented according to the principles of sustainable agricultural production². The areas under ecological agriculture grew from 52 ha in 2002 to 50,054 ha in 2014, and the areas under integrated agriculture

from 171 ha in 2010 to 100,909 ha in 2014. Integrated agriculture has been implemented in Croatia since 2010, and it purports a balanced application of agro-technical measures and minimal use of chemicals for the purpose of production of ecologically and economically acceptable products.

Agricultural areas in the system of conventional, integrated and ecological agricultural production



¹ Registry of subjects in ecological production and Registry of producers in integrated production of agricultural products (<http://www.mps.hr/>)

² A set of ecologically acceptable, but technologically not too demanding criteria of agricultural procedures whose application would to the largest extent mitigate the negative effects of agricultural production to the human environment.



AGRICULTURE

Nitrate Vulnerable Zones in Croatia

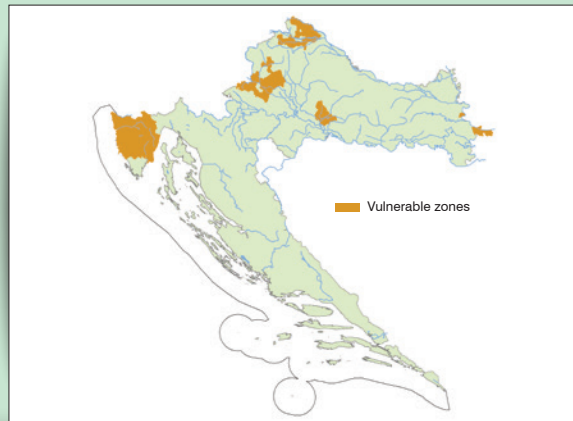
The Government of the Republic of Croatia adopted the Decision on determining vulnerable zones in the Republic of Croatia¹ in 2012. All nitrate vulnerable zones in Dunav and Adriatic water regions are listed in this Decision, which means that the use of nitrogen fertilizers in those areas is limited.

Trend and current state

Marking of vulnerable zones is a complex procedure which should integrate a large number of spatial and other information, and eventually identify the actual loading to waters from the agricultural sector. When determining vulnerable zones, it is necessary to focus on those areas where agriculture is the dominant source of loading, and use other possibilities, methods and tools to identify and sanction other water polluters: industry, city waste waters, household waste waters etc. The Government's Decision encompassed 6 zones which are administratively located in the City of Zagreb and 8 counties: Međimurje, Varaždin, Zagreb, Krapina-Zagorje, Sisak-Moslavina, Vukovar-Srijem, Primorje-Gorski Kotar and Istria, i.e. in 75 municipalities and cities. According to the Nitrates Directive² and Action Programme³, within 4 years from the date of Croatia's accession to the EU, the annual quantity of nitrogen a producer adds to an animal-origin fertilizer may not exceed 210 kg N/ha. During that period, and starting from 1 July

2017, that quantity may not be higher than 170 kg N/ha. Currently, no Croatian producer exceeds the limit value of 210 kg/ha.

Nitrate vulnerable zones in Croatia



¹ OG 130/12

² Council Directive 91/676/EEC from 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources (OJ L 375, 31 Dec 1991)

³ First Action Programme for protection of waters from pollution caused by nitrates of agricultural origin (OG 15/13)



WASTE MANAGEMENT

Municipal Waste

By monitoring the quantities of produced municipal waste and ways of its management, we monitor the achievement of goals stipulated by Act on Sustainable Waste Management¹ as well as the development of the municipal waste management system.

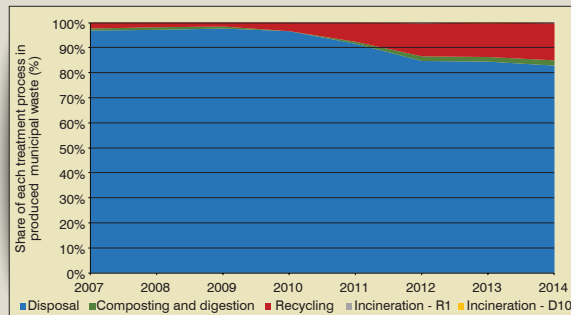
Trend and current state

The total quantities of produced municipal waste ranged between 1.7 million t in 2007 and 1.6 million t in 2014. At the same time, the quantities of recycled municipal waste are constantly on the rise, and the quantities disposed in landfills are declining. The share of recycled municipal waste has decreased by 14% and in 2014 the recycling rate was 17%. That year, the most represented waste management operations were recycling (14%) and composting (2%), while incineration with energy recovery – R1 (0.19%) was the least represented. The share of disposed municipal waste² is declining; in 2014 it was 80%, which is by 16% less than in 2007. The waste was mostly disposed in landfills, while a negligible part was treated by incineration without energy recovery - D10 (0.0002%). Following all said, it can be concluded that it is still necessary to make significant efforts to achieve the stipulated municipal waste recycling rate of 50% by 2020.

¹ OG 94/13

² Disposal in landfills and incineration without energy recovery

Municipal waste management



	2007	2008	2009	2010	2011	2012	2013	2014
Municipal waste generation (10 ³ t)	1,718.7	1,788.3	1,743.2	1,629.9	1,645.3	1,670	1,721.8	1,637.4
Recovery (%)	3%	3%	2%	4%	8%	15%	15%	17%
Disposal (%)	96%	97%	97%	94%	91%	83%	82%	80%
Pre-processing, temporary storage etc.	1%	0%	1%	2%	1%	2%	3%	3%



WASTE MANAGEMENT

Medical Waste

Medical waste is waste generated during care, protection and preservation of human and/or animal health, waste generated by research activities and waste generated in provision of various services involving contact with the blood and/or excretions of humans and/or animals. In regards to its properties, medical waste can be hazardous¹ and non-hazardous². Due to a part of potentially infectious waste, medical waste can represent a serious risk for human health.

Trend and current state

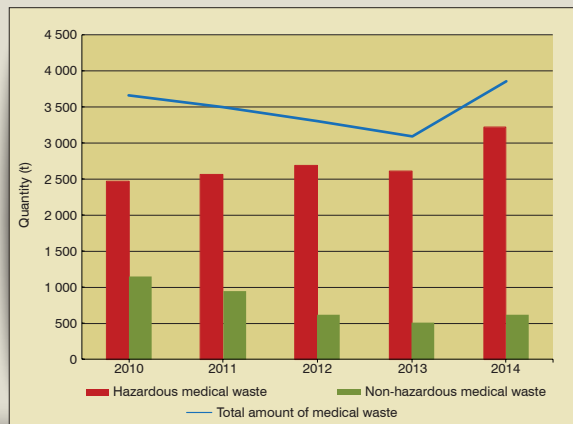
In the period between 2010 and 2013, a decline of reported quantities of medical waste of 15% was recorded, and 2014 witnessed an increase of 23% in regards to the previous year. In 2014, 3,842 t of medical waste were reported; of which 3,222 t (84%) of hazardous and 620 t (16%) of non-hazardous medical waste. That year, a total of 3,422 t of medical waste were processed, and the largest share (3,210 t; 93%) was autoclaved and sent to a landfill as non-hazardous waste. In 2014, the largest quantity of generated medical waste was reported by the healthcare services (88%), mostly hospitals

¹ According to the Ordinance on the Management of Medical Waste (OG 50/15), hazardous medical waste is categorised as: infectious, sharp objects, pharmaceutical waste, chemical waste, cytotoxic and cytostatic waste, amalgam waste from dental services and other hazardous waste.

² Non-hazardous medical waste is waste without any hazardous properties, in accordance with provisions of the Act on Sustainable Waste Management (OG 94/13).

(77%). According to the reports made by waste exporters, 637 t of medical waste was exported.

Medical waste



Source: CAEN



WASTE MANAGEMENT

Management of a Special Category of Waste - Waste Batteries

Everyday life is now almost unimaginable without modern devices which use batteries. Unfortunately, some batteries and accumulators contain dangerous substances and represent hazardous waste. The Ordinance on Batteries and Accumulators and Waste Batteries and Accumulators¹, in accordance with EU Directive² which aims to reduce the negative impact of batteries and accumulators to the environment, stipulates the procedures and goals of waste batteries and accumulator management, requirements regarding separate collection and treatment, ways and conditions of marking etc.

Trend and current state

According to the data of the Environmental Protection and Energy Efficiency Fund (EPEEF), 8,787 t of batteries and accumulators were put on the Croatian market in 2014, including 347 t of portable batteries. The quantity of collected waste batteries and accumulators was 6,965 t, including 72 t of portable batteries. The total recycled quantity was 6,903 t, which represents 99% of totally collected quantities. The EU Directive stipulates a goal: by 2016, the quantity of totally collected portable batteries should be 25% of the quantity of batteries put on the market, and after the subject date, that goal rises to at least 45%. Even though Croatia achieved

the goal of 25% in 2010, in the past two years that goal was not achieved. The reason for that is the increase of quantities put on the market with simultaneous stagnation of waste generation. In the upcoming years it is expected that the collected quantities will rise and that the goal will again be achieved.

Portable waste batteries collection rate



¹ OG 111/15

² Directive 2006/66/EC of the European Parliament and of the Council from 6 September 2006 on batteries and accumulators and waste batteries and accumulators and repealing Directive 91/157/EEC (OJ L 266, 22 Sept 2006)



ENERGY

Primary Energy Consumption by Fuel

Energy, depending on its form, can have a smaller or bigger impact on the environment. In order to reduce the negative environmental impacts of energy in terms of reduction of pollutant emissions on environmental components, space, and encourage the preservation of natural resources, the intention is to increase the share of electricity production from renewables.

Trend and current state

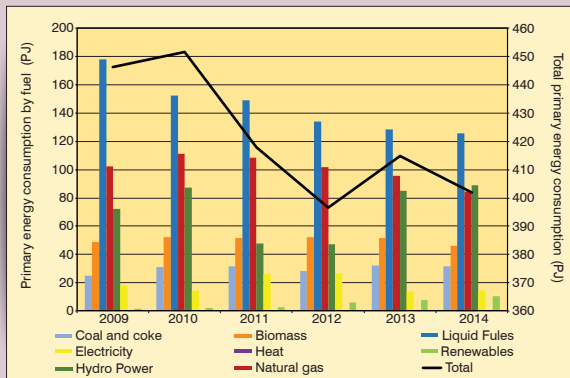
In 2014, the total primary energy consumption¹ in Croatia decreased by 3.1% as compared to the previous year. At the same time, the consumption of all energy forms was more or less decreased, except for consumption from renewable energy sources² (growth of 35.4%) and hydro power (growth of 4.8% due to very favourable hydrological conditions). Consumption of other energy forms was decreased: natural gas by 11.4%, fuel wood and biomass by 11.3%, liquid fuels by 2% and coal and coke by 1.8%. Consumption of heat from heat pumps was also decreased, by 15.9%. The consumption of renewable energy sources during the period 2009-2014 increased by a very high annual rate of 50.2%, while the consumption of liquid fuels decreased by an average annual rate of 6.7%. In the observed period, along with the energy efficiency measures and

¹ The total energy consumption comprises final energy consumption, energy conversion losses, energy sector own use, transport and distribution losses and non-energy use.

² wind energy, solar energy and geothermal heat

measures implemented in the energy system, a large contribution to the reduction of the total primary energy consumption was made by the economic crisis.

Primary energy consumption by fuel



Source: EIH²



ENERGY

Share of RES in the Gross Electricity Consumption

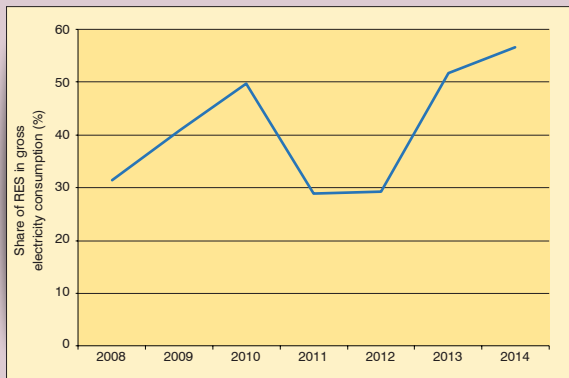
Use of renewable energy sources (RES)¹ in the electricity production is shown by the ratio between electricity produced from all RES and the gross electricity consumption. Electricity from RES is produced in hydropower plants (without pumping storage system), wind power plants, solar power plants and from biomass/wastes. The gross electricity consumption comprises the total gross electricity generation from all fuels, plus electricity import, minus exports.

Trend and current state

In 2014, the share of RES in the gross electricity consumption was 56%; of which 52% was produced in hydropower plants, and 4% in wind power plants. In the period 2008-2014, the share of electricity consumption from RES in the gross electricity consumption ranged between 28.9% and 56.5%. Except in 2011 and 2012, a trend of growth was recorded in the mentioned period. Even though the electricity production in solar power plants grew by 352% in the subject period, its share in the gross electricity production from RES in 2014 was only 0.4%. In the same period, the electricity production in wind power plants grew by 18%, but its share in the gross electricity production from RES was significantly higher than that of solar power plants, and in 2014 it was 8%.

¹wind energy, solar energy, hydro power and biomass/waste

Share of RES in the gross electricity consumption





INDUSTRY

Organic Substances from Waste Waters Reported in the Environmental Pollution Register

Organic substances from waste water discharges can make a notable pressure on the aquatic and its related ecosystems¹. The Environmental Pollution Register (EPR)² contains data on waste waters which are reported to the Croatian Agency for the Environment and Nature³ by facilities obliged to submit data.

Trend and current state

The effluents and decomposition of larger quantities of organic substances may lead to unwanted changes to the water environment e.g. decrease of the concentration of dissolved oxygen in water. Therefore, it is necessary to treat waste waters before releasing them from the site into the natural recipient i.e. enable their transfer to the urban waste water treatment plant for further treatment. According to the data reported in the EPR, there is a trend of declining of released and transferred organic substances from waste waters. The reporting year 2011 was an exception when increase of the total suspended solids transfer and chemical oxygen demand (COD_{Cr}) release was reported. With a decreased pressure on the environment, it is a fact that more organic compounds are transferred for further treatment than directly released into the natural recipient. Transfer in regards to release is on average larger by

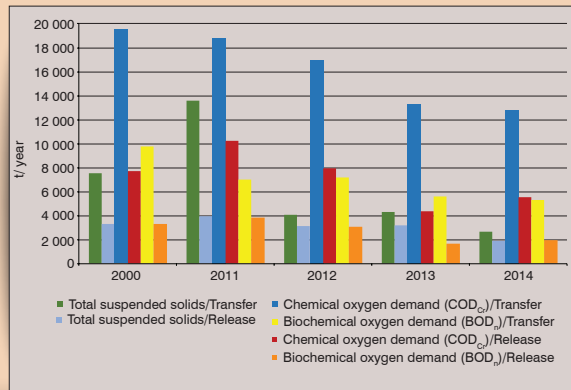
¹ Definition defined by the Water Act (OG 153/09, 130/11, 56/13, 14/14)

² Environmental Pollution Register database in accordance with the Ordinance on the Environmental Pollution Register (OG 35/08)

³ Data from EPR users who reported waste waters with PI-V forms "Release and transfer into waters and/or sea – waste waters from the site"

41% for total suspended solids, 57% for COD_{Cr} and 60% for BOD_n.

Organic substances from waste waters reported in the EPR



Source: CAEN



INDUSTRY

Hazardous Waste from Industrial Activities

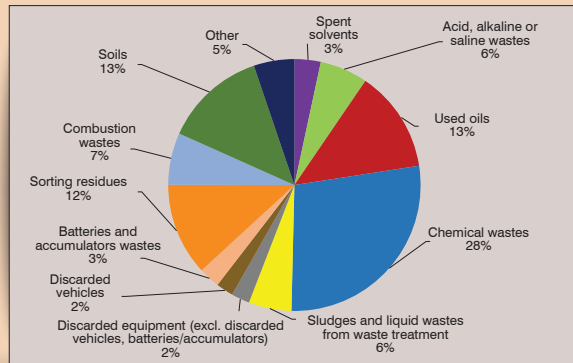
Hazardous waste contains at least one of the hazardous properties such as toxicity, infectivity or flammability. If not treated properly, it can represent a great risk to the environment and human health. The share of hazardous waste in the total reported quantities of waste is less than 5%.

Trend and current state

According to the reported data in the Environmental Pollution Register (EPR)¹ in 2014, the total quantity of generated hazardous waste was around 130,000 t. According to economic activities² which generate the waste, the share of waste from industry³ in the total quantity is 36%. Processing industry generates the most of hazardous waste, and mining and extraction sector the least. The largest share of hazardous waste in the industry belongs to chemical wastes⁴, more specifically, wastes from petroleum refining, wastes from physical/chemical treatments of waste and waste from oil water separator. Chemical waste comes from the chemical industry and different industrial sectors which produce and use chemical products. Second place is taken by used oils i.e. mineral-based, synthetic oils and biodegradable engine oils. They originate from

the refining process, from the mechanical engineering and maintenance of vehicles. There is the same share of soils and stones which contain organic pollutants, heavy metals or oil that originate mainly from construction activities, excavations of contaminated sites and soil remediation.

Share of categories of hazardous waste from industry in 2014



¹ <http://www.azo.hr/RegistarOneciscavanjaOkolisaROO01>

² Decision on the National Classification of Economic Activities 2007 - NACE 2007 (OG 58/07)

³ Sector B – Mining quarrying, C - Manufacturing, D – Electricity, gas, steam and air conditioning supply, E – Water supply; sewerage; Waste management and remediation activities

⁴ Statistical European Waste Classification according to the Commission Regulation (EC) No. 574/2004 from 23 Feb 2004 amending Annexes I and III to Regulation (EC) No. 2150/2002 of the European Parliament and of the Council on waste statistics (OJ L 90, 23 Mar 2004)



CHEMICALS

Presence of Dangerous Substances per Counties

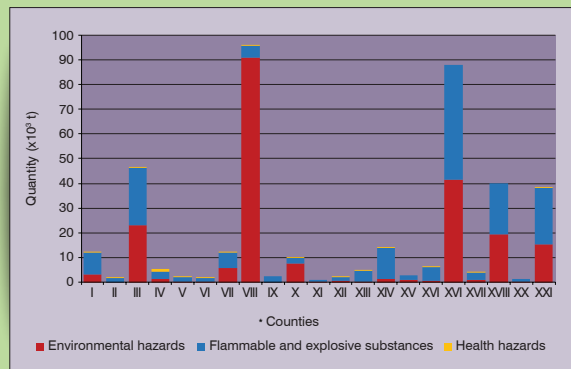
Registry of Establishments in which Dangerous Substances Are Present/Register of Reported Major Accidents (REDS/RRMA) contains data on the quantities of dangerous substances within the establishment, reported in accordance with the hazard categories: health hazards (toxic substances), environmental hazards (hazardous to the aquatic environment), physical hazards (flammable and explosive substances) and other hazards, in accordance with Annex I.A., part 1 of the Regulation on the Prevention of Major Accidents Involving Dangerous Substances¹ and Ordinance on the Registry of Installations in which Dangerous Substances Are Present and the Register of Reported Major Accidents².

Trend and current state

Largest quantities of dangerous substances in 2015 were reported in Primorje-Gorski Kotar, Split-Dalmatia, Sisak-Moslavina and Dubrovnik-Neretva Counties and the City of Zagreb. The smallest quantities were reported in Požega-Slavonia, Međimurje, Koprivnica-Križevci and Krapina-Zagorje Counties. In 2015, of the totally reported quantities of dangerous substances, most of them fall into category environmental hazards (55%) and physical hazards (45%), and the least health hazards (0.5%). Most substances dangerous for the environment also have physical hazards, since

they are mostly substances from the group of petroleum products reported by the industry, mainly petrol stations.

Presence of dangerous substances per counties



* List of counties and the City of Zagreb with pertaining marks (I-XXI) are in the glossary

Source: CAEN

¹ OG 44/14

² OG 139/14



TOURISM

Foreign Vessels on Cruise

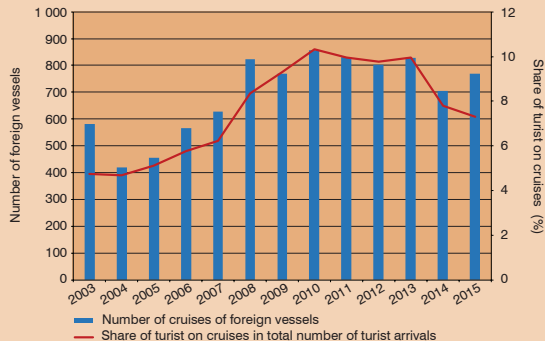
Foreign vessels on cruise or the so-called *cruising* tourism was the fastest growing type of tourism in the last decade and an important part of nautical tourism offer in the Mediterranean. The development of this type of tourism brings loading to the environment, especially to coastal regions. The basic principle of nautical tourism management is the principle of sustainable development, which purports compromises between the need for preservation of the environment and the need for economic development. It is primarily implemented by determining the carrying capacity and the growth limit of new accommodation capacities¹. Boaters find areas under different categories of protection the most attractive, so it is necessary to determine the carrying capacity of these areas and the maximum number of visitors.

Trend and current state

The share of tourists on cruises in the total number of tourist arrivals continuously grew until 2010 (increase from 4.7% in 2003 to 10.3% in 2010). After 2010, the share of tourists on cruises started to decline. Until 2010 the number of cruises of foreign vessels followed the growth of the share of tourists, recording a growth of 47% between 2003 and 2010. After 2010 there is a variable trend in the number of cruises of foreign vessels, which can be attributed to the growing capacity of those vessels. In the Croatian Adriatic

these vessels mostly visit the ports of Dubrovnik and Split, followed by Korčula, Zadar and Šibenik. The Adriatic and the Mediterranean are classified as sensitive and valuable ecosystems, protected on different levels. Croatia is a party to the MARPOL Convention², one of the most important conventions regarding pollution of sea from ships.

Foreign vessels on cruise



¹ Nautical Tourism Development Strategy of the Republic of Croatia 2009 - 2019

² International Convention for the Prevention of Pollution from Ships and its Annexes



FISHERIES

Freshwater Aquaculture Production



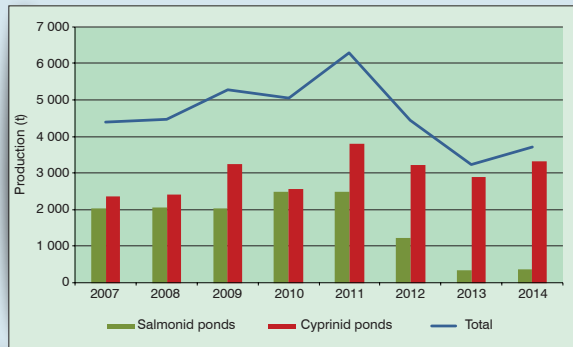
Freshwater aquaculture is the farming of freshwater fish, which are divided into cold-water (salmonid) and warm-water (cyprinid) fish. Climate change affects the freshwater aquaculture production, especially due to temperature rise and the number of extreme events (drought and floods). While droughts can cause uncertainty in water supply and reduced quality of water, floods cause physical damage to farming infrastructure, escape of fish and reduction of fish-ponds water quality.

Trend and current state

In 2014, there was a slight increase in freshwater aquaculture production compared to 2013. The total growth compared to the previous year amounts 12.5% or 466 t. Due to favourable climate factors and especially considerable precipitation, the largest increase in production was recorded in warm-water fish-ponds, while the growth of trout farming was negligible in 2014. Fish farming significantly depends on climate conditions, especially precipitation and some parameters cannot be influenced. Freshwater aquaculture production showed a positive growth between 2007 and 2011, which changed in 2012. Since then, due to drought and other impediments (administrative, import, situation on the market), a decline in the production has been recorded. Significant increase

in production in 2011, especially in cyprinid-ponds, is a result of modernization and increase of farming area. Compared to 2011, the production of trout species was halved in 2012, and the main reason for that was the weak water flow (drought), due to which the farmers were forced to perform the fishing earlier or limit the production.

Freshwater aquaculture production



Source: CBS



TRANSPORT

Passenger Transport by Mode of Public Transport

Mitigation of the impact of the transport sector on the environment is a crucial goal of the EU's transport policy¹. One of the main principles of the Transport Development Strategy of the Republic of Croatia 2014 - 2030² is to ensure environmental sustainability of the transport system, so it is very important to encourage the use of public transport.

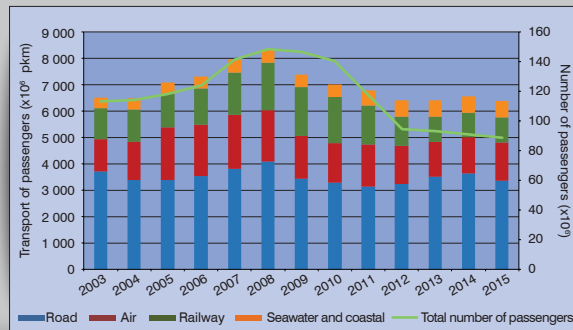
Trend and current state

The passenger transport in 2008, in comparison to 2003, recorded a growth of 27.8% and reached the highest value of 8.3 billion passenger kilometres (pkm) in 2008, after which it started to decline (6.3 billion pkm in 2015). Even though in terms of energy dependence to oil and emissions into the air, the road transport is environmentally least acceptable, in the whole observed period it participated in the total passenger transport with the highest share of 53%. Air transport was represented with 22.5%, railway with 14.7%, and maritime transport with 9.7%.

The total number of passengers transported by mode of public transport also grew until 2008, when it achieved a record of 148.2 million passengers. However, there was a significant decline by 2012 (by 36.3%), when 94.4 million passengers were transported. After 2012 the total number of passengers transported by mode of public transport has continuously slightly declined, seeing 88.81 million passengers transported in 2015. To explain this trend, it is important to note that since the third quarter of 2006, free tickets

(pupils, students, pensioners and tickets for people of poor material status) were included in the total passenger transport through the Agreement on subvention of costs for the purpose of inclusion of the railway into the public transport system of the City of Zagreb. However, the subvention of free transport was cancelled on 1 July 2011, so those tickets were excluded from the calculation³, which had a great influence on the reduction of the number of transported passengers.

Passenger transport by mode of public transport



¹ http://europa.eu/pol/trans/index_hr.htm

² OG 131/14

³ necessary to take into consideration when comparing the presented data



TRANSPORT

Number of Electric and Hybrid Vehicles

In final energy consumption, transport participated with 32.4% and in greenhouse gas emissions with 31.7%, of which 94.6% coming from road transport. The main goal of the European transport policy is to establish a system that offers high-quality mobility services, support economic progress, strengthen the competitiveness and efficient use of resources. So the EC set a goal¹ to reduce the greenhouse gas emissions by 2050 by at least 60% compared to 1990, whereat new vehicle technologies and transport management are crucial for reduction of exhaust emissions from transport.

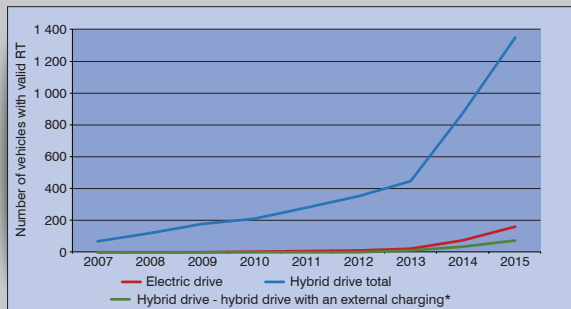
Trend and current state

In the period 2007 - 2013 there was a slight upward trend in the number of electric and hybrid vehicles of category M1. Since 2013 that trend has been increasing significantly, so the number of electric vehicles increased from 24 (in 2013) to 156 (in 2015), and of hybrid vehicles from 446 to 1,347. Since 1 July 2013, the number of the so-called *plug-in* hybrid vehicles is monitored; from 2013 the number of those vehicles increased from 12 to 70 in 2015. The data refer to the vehicles with valid regular roadworthiness test (RT). In comparison to the total number of vehicles, the share of hybrid vehicles is small amounting only 0.08% in 2015. The reason for the increase in the number of electric and hybrid vehicles is surely the co-financing from the energy efficiency programmes and projects of the EPEEF for encouraging cleaner transport. The EPEEF co-

¹ White Paper "Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system" (COM/2011/0144 final)

finances the purchase of M1 and N1 category vehicles via public invitations, and beside for the purchase of electric, *plug-in* hybrid and hybrid vehicles for citizens, companies and crafts, the Fund also co-finances eco-driving training etc. To encourage cleaner transport, the EPEEF paid the total of 1.26 million kn to 11 projects in 2013. Significantly more was paid in 2014 (18.36 million kn) through 315 projects. 31.5 million kn were planned for this activity in 2015

Number of electric and hybrid vehicles - category M1



* monitored since 1 July 2013

Source: VOC, EPEEF



HEALTH AND SAFETY

Health Safety of Drinking Water

Monitoring of the health safety of water intended for human consumption purports the systematic implementation of a series of planned measures and laboratory analyses of certain parameters. The parameters of health safety of water for human consumption (microbiological and chemical) are harmonized with the requirements of the Directive on the quality of water intended for human consumption¹. The health safety of drinking water is monitored according to the Health Safety of Water for Human Consumption Monitoring Plan, adopted by the Ministry of Health in cooperation with the Croatian Institute of Public Health (CIPH) for every year.

Trend and current state

The monitoring of drinking water between 2009 and 2013 was performed in different volumes, varying from county to county. Even though it was planned to collect 30,000 samples a year on the state level, about 38% of the totally planned samples were collected. The main reason for that was limited funding, which must be ensured by the counties. The monitoring plan for 2014 on the whole of territory of Croatia anticipated the collection of 11,924 samples, with about 76% actually being collected. The reason of the significant reduction of the planned number of samples in 2014 is the adoption of the new Act² and Ordinance³ which changed the monitoring of water

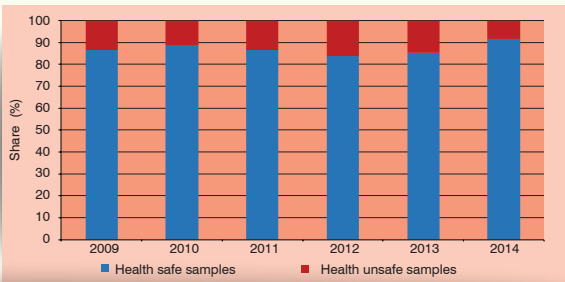
¹ Council Directive 98/83/EC from 3 November 1998 on the quality of water intended for human consumption (OJ L 330, 5 Dec 1998)

² Act on Water for Human Consumption (OG 56/13, 64/15)

³ Ordinance on compliance parameters and methods of analysis of water for human consumption (OG 125/13, 141/13, 128/15) (until 2013 the monitoring of water for human consumption was done in accordance with the Ordinance on health safety of drinking water (OG 47/08))

for human consumption. Since the implementation of monitoring was performed in different volumes in 2013 and 2014 due to changes in regulations, the data for the subject period should be viewed in regards to those changes. Between 2009 and 2013 the share of unsafe samples ranged between 11.3% and 16.2%, while in 2014 it was only 8%. The most common reasons of unsafe samples is the microbiological pollution of drinking water, and the most common reason for that is the increased number of aerobic bacteria, mostly in continental counties.

Share of health safe and unsafe drinking water in the total number of samples





HEALTH AND SAFETY

Mortality in Road Traffic Accidents in the Republic of Croatia

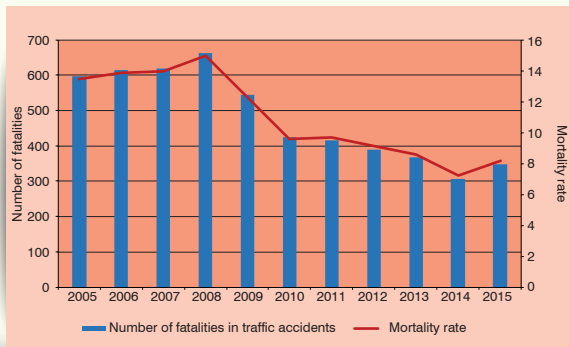
The safety of road traffic in a given country is observed through deaths in traffic accidents. The main indicator is the number of deaths per 100,000 inhabitants (mortality rate), which reflects the (un)successfulness of a country's activities of implementation of road traffic safety policies. Even though mortality in road traffic accidents is not a characteristic indicator of the state of the environment, traffic accidents, along with the noise and air pollution from traffic, have a negative influence on the people's health and quality of life. It should be emphasised that 70% of inhabitants of Croatia live in urban areas, as on average in EU countries.

Trend and current state

Despite long-term investments in the safety of traffic¹, the number of fatalities in traffic accidents increased from 597 in 2005 to 664 in 2008 (increase of 11.2%). A constant decline has been recorded since, so in 2014 the number of fatalities was 308, but in 2015 it was 348. Improvement of road quality surely had an influence on the reduction of the number of accidents and their consequences. According to the presented data, the total mortality rate in the whole observed period ranged from 15 (2008) to 7.2 (2014). The new National Road Safety Programme of the Republic of Cro-

atia 2011-2020² aims to reduce the number of fatalities by 50% by 2020 compared to 2010, when there were 425 fatalities, and the mortality rate was 9.62. For the purpose of achieving the set goal, the necessary activities and measures, such as a change of traffic participants' behaviour, better road infrastructure, safer vehicles and more efficient medical aid after traffic accidents, were defined.

Mortality in road traffic accidents



¹ The first National Road Safety Programme was adopted in 1994 for the period of 2 years. 3 more national safety programmes were adopted for 5-year periods after that (1996-2000, 2001-2005 and 2006-2010)

² OG 59/11



GENERAL ENVIRONMENTAL ISSUES

Investments into Energy Efficiency Programmes and Projects



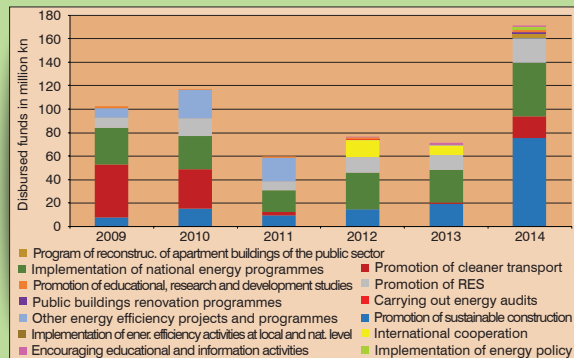
The aim of the Energy Strategy of the Republic of Croatia¹ is to establish a system which will be developed to ensure the safety of energy supply and competitiveness, as well as protection of the environment. The Environmental Protection and Energy Efficiency Fund (EPEEF) has an important role in the stimulation of measures of the increase of energy efficiency and energy management. Through fees paid by liable persons, the EPEEF collects funds for the implementation of energy efficiency programmes and projects.

Trend and current state

EPEEF funds finance the projects of energy renovation of existing houses, residential and non-residential buildings, construction of energy efficient objects, usage of RES, projects of increasing the energy efficiency of public lighting and projects of energy efficiency in industry. Also, a part of the funds is intended for activities of stimulating cleaner transport, as well as other programmes and projects comprising education, information and general stimulation of sustainable development. In the period between 2009 and 2014 the majority of funds was paid for the implementation of national energy programmes (183.25 million kn), followed by stimulation of sustainable construction (around 142 million kn) and stimulation of cleaner transport (about 102 million kn). Most funds (171.6 million kn) were paid in 2014, for the first time to the public buildings renovation programmes (4.9 million kn), which included energy audits, energy certificates and project documentation.

Users of EPEEF funds can be the units of local and regional government, institutions, companies, civil society organizations and citizens, and the right for project co-financing is exercised by applying to public competitions and invitations published by the EPEEF.

Paid EPEEF funds for energy efficiency programmes and projects



¹ OG 130/09



SUSTAINABLE CONSUMPTION AND PRODUCTION

Material Productivity in Croatia and the EU-28



The human race has intensively exploited the Earth's material resources for almost two centuries, not taking into account their limits. Economic activities contribute to human wellbeing, but they also pollute the environment, have a negative influence on human health and contribute to climate change. Circular economy policy¹ directs towards the vision: "to live well within the planet's ecological limits". One of the indicators which follows the decoupling of economic growth and material consumption (environmental degradation) is material productivity. The aim is to use materials efficiently with the least possible environmental degradation and the most possible economic effect. Monitoring of the GDP, as the indicator of economic growth and domestic material consumption can provide an information on the achievement of circular economy goals.

Trend and current state

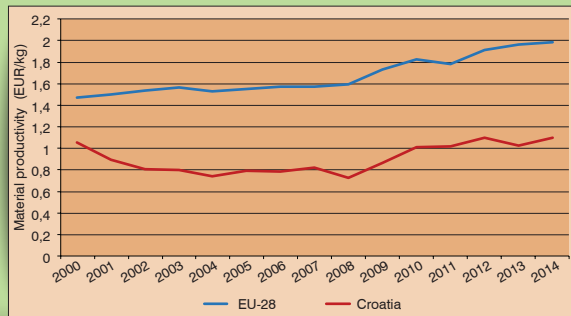
Between 2001 and 2010 the material productivity in Croatia was under 1 EUR/kg. That means that every kilogram of used material generated an economic value lower than 1 EUR. In 2008 the productivity reached an all-time low (0.74 EUR/kg). A recovery trend was recorded after 2008, with 2014 seeing the productivity of 1.09 EUR/kg. Comparing the data for Croatia with the data for the EU-28, it is important to emphasise that material productivity in EU member states was significantly higher in the whole observed period, while in 2014 it was almost 2 EUR/kg.

¹ http://ec.europa.eu/environment/circular-economy/index_en.htm

² decoupling of economic growth and material use, the so-called *absolute decoupling*

If the material productivity grows, it doesn't necessarily mean that the consumption of material is reduced in absolute values. A cause of material productivity growth can be a faster economic growth (GDP) in relation to e.g. the same consumption of material. An ideal material productivity growth is when an economic growth is coupled with simultaneous reduction of material consumption². Therefore, one of the main goals of circular economy policy is exactly the decoupling of material consumption and degradation of the environment from economic and social development.

Material productivity in Croatia and the EU-28



Source: Eurostat



SUSTAINABLE CONSUMPTION AND PRODUCTION

Structure of Households Expenditures



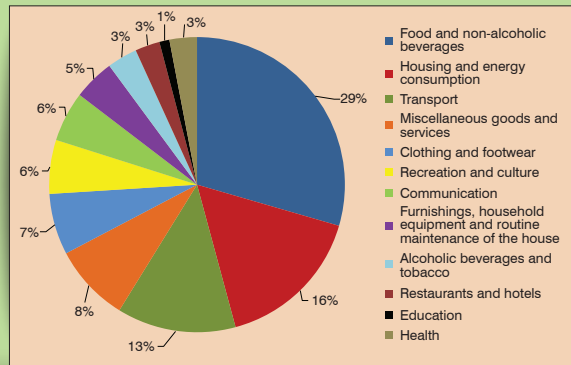
Households¹ are an important segment of the production-consumption chain. Even though compared to industrial facilities they have a relatively small impact on the environment, they are the initiators of environmental burden due to their number (food production, transport, construction of transport and urban infrastructure, housing and energy consumption). For example, high consumption of food and non-alcoholic beverages contributes to a more significant burdening of the environment than healthcare, recreation and education. By monitoring the structure of household expenditures it is possible to assess the consumption patterns and patterns of burden on resources and the environment. The EU is currently oriented towards finding a way of achieving sustainable growth and abandoning the principle "take, make, use, discard" with a package of circular economy measures².

Trend and current state

In Croatia in 2014, the largest share of expenditures was held by expenditures for food and non-alcoholic beverages (29.5%), but in comparison to previous years this consumption declined (in 2006 it was 32.6%). The share of housing and energy consumption constantly grew in recent years, and in 2014 it was 16.3%, followed by expenditures for transport (13%) and expenditures for miscellaneous goods and services³ (8.5%). In 2014 the share of expenditures for clothing and footwear was 6.7%, which shows a decline in comparison to previous years. Expenditures for recreation and culture were only 5.9%, and for communication 5.5%. Other groups: furnis-

hings, household equipment and routine maintenance of the house, alcoholic beverages and tobacco, restaurants and hotels, education and health, individually participate in the total expenditures with a share of under 5%. Other EU states on average spend most on housing and energy consumption (24.1%), transport (13.1%) and food and non-alcoholic beverages (13%).

Structure of consumption expenditures in 2014



¹ Structure of households consumption expenditures is shown by 12 main groups of products and services

² Circular Economy Package: http://europa.eu/rapid/press-release_IP-15-6203_hr.htm

³ Personal care, personal effects, insurance etc.



PUBLIC RELATIONS

Number and Structure of Inquiries submitted to the Croatian Agency for the Environment and Nature by the Public



Continuous provision of information on the environment to the public is one of the main tasks of the Croatian Agency for the Environment and Nature (CAEN)¹. This is primarily done in direct communication i.e. by answering to received inquiries, as well as by publication of data and information on the website (www.azo.hr), which was upgraded in 2010. This change enabled users to gain an easier and quicker access to the data and information and resulted in a reduced number of direct inquiries.

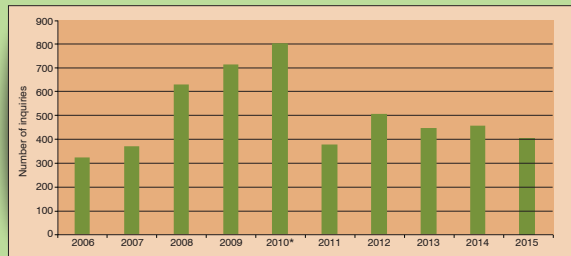
Trend and current state

In a period of 10 years the Agency received 5,015 inquiries from the public, more than half (51.8%) referring to waste. The interest for the Environmental Pollution Register (EPR) base is constantly growing; it makes up for 14.1% of inquiries, while other CEIS bases received half as many inquiries (7.6%). General environmental issues were the subject of 7.3% of inquiries, air and climate change of 5.1% and inland waters and sea and coastal area of 3.3%. The lowest number of inquiries referred to sectoral pressures (1.8%), soil (1.3%) and biodiversity (0.8%). In 9 years the Agency forwarded an inquiry to competent institutions 344 times, most frequently to the Ministry of Environmental and Nature Protection and the competent inspection. In the last 10 years, the structure of persons submitting inquiries did not change significantly. Out of 3,980 of them, half were

¹ By merging the Croatian Environment Agency and State Institute for Nature Protection, the Croatian Agency for the Environment and Nature was established on 17 Sep 2015. This indicator information demonstrates the structure and number of inquiries submitted to the Croatian Environment Agency.

private companies, and the interest of citizens is constantly high (17%). Units of local government submitted 7.2% of inquiries to the Agency, foreign citizens and institutions 7%, ministries 5%, state-owned companies 4% and the scientific community 3.6%. In the last 10 years, 1.7% of inquiries came from non-governmental organizations, while schools, healthcare and public institutions were represented with 1.2%. Professional institutions (agencies, bureaus, institutes) submitted 1.5% of inquiries, and participants of different projects occupy the bottom positions with 0.7% of inquiries.

Total number of inquiries submitted to the CAEN



* The website upgrade in 2010 significantly lowered the number of inquiries because it enabled an easier and quicker access to requested information, so there was no need to submit an inquiry.

Source: CAEN

THE ENVIRONMENT IN YOUR POCKET

Abbreviations

AAL – Agency for Agricultural Land

BOD – biological oxygen demand

CAEN – Croatian Agency for the Environment and Nature

CBS – Croatian Bureau of Statistics

CFRI – Croatian Forest Research Institute

CGS – Croatian Geological Survey

CH₄ - methane

CIPH – Croatian Institute of Public Health

CO – carbon monoxide

COD – chemical oxygen demand

Cr – chromium

DHMZ – Meteorological and Hydrological Service

DT – Direct Threat

EC – European Commission

EIHP – Energy Institute Hrvoje Požar

EPEEF – Environmental Protection and Energy Efficiency Fund

CEIS – Croatian Environmental Information System

EPR – Environmental Pollution Register

EU – European Union

GDP – gross domestic product

ha – hectare

H₂S – hydrogen sulphide

IOF – Institute of Oceanography and Fisheries

kg N/ha – kilogram of nitrogen per hectare

kn/m³ – kuna per cubic meter

LGU - local government unit

LV – limit values

MA – Ministry of Agriculture

THE ENVIRONMENT IN YOUR POCKET

Abbreviations

MENP – Ministry of Environmental and Nature Protection

$\mu\text{g}/\text{m}^3$ – microgram per cubic meter

MI – Ministry of the Interior

Ni - nickel

NMVOC – non-methane volatile organic compounds

NO_x – nitrogen oxides

OG – Official Gazette

OG-IA – Official Gazette – international agreements

OJ L – Official Journal of the EU (OJ) is the official gazette of record for the EU legislation (series L) and other official documents of institutions, bodies and agencies of the EU (series C and its annexes)

PJ - petajoule (10^{15} J)

REDS/RRMA - Registry of Establishments in which Dangerous Substances Are Present/Register of Reported Major Accidents

RES – renewable energy sources

t - ton

VAT – value added tax

VCC – Vehicle Center of Croatia

WSS – water service suppliers

Zn – zinc

THE ENVIRONMENT IN YOUR POCKET

Glossary

Circular economy - economic model which ensures sustainable management of natural resources and longer lifetime of materials and products, simultaneously reducing waste not only in the production process, but also during the whole lifecycle of the product. In circular economy, product added value is retained as long as possible, waste is not generated, but global competitiveness, sustainable economic growth and creation of new jobs are encouraged.

Counties in the area of the Republic of Croatia – numerical denotation and district organization are defined by the Act of Territories of Counties, Cities and Municipalities of the Republic of Croatia (OG 86/06, 125/06, 16/07, 46/10, 145/10, 37/13, 44/13, 45/13, 110/15):

- I Zagreb County with the seat in the City of Zagreb
- II Krapina-Zagorje County with the seat in Krapina
- III Sisak-Moslavina County with the seat in Sisak
- IV Karlovac County with the seat in Karlovac
- V Varaždin County with the seat in Varaždin
- VI Koprivnica-Križevci County with the seat in Koprivnica
- VII Bjelovar-Bilogora County with the seat in Bjelovar
- VIII Primorje-Gorski Kotar County with the seat in Rijeka
- IX Lika-Senj County with the seat in Gospić

- X Virovitica-Podravina County with the seat in Virovitica
- XI Požega-Slavonia County with the seat in Požega
- XII Brod-Posavina County with the seat in Slavonski Brod
- XIII Zadar County with the seat in Zadar
- XIV Osijek-Baranja County with the seat in Osijek
- XV Šibenik-Knin County with the seat in Šibenik
- XVI Vukovar-Srijem County with the seat in Vukovar
- XVII Split-Dalmatia County with the seat in Split
- XVIII Istria County with the seat in Pazin
- XIX Dubrovnik-Neretva County with the seat in Dubrovnik
- XX Međimurje County with the seat in Čakovec
- XXI City of Zagreb, the capital of the Republic of Croatia, is a separate and unique territorial and administrative unit whose organization is regulated by the Act of the City of Zagreb. The denotation was selected for the reason of data overview simplicity.

Emission – release or leak of substances in liquid, gas or solid state from a source into the environment.

Fugitive emissions (diffuse, unstable) – emissions of volatile organic compounds in the air, soil or water from sol-

THE ENVIRONMENT IN YOUR POCKET

Glossary

vents contained in any product, or generated during production of solvents, but not released into the environment through an outlet, but through doors, windows, openings and alike.

Green economy – the economy in which environmental policy, economic and social policy and innovation enable efficient use of resources, thus increasing general human well-being with preservation of natural systems

M1 category of vehicles - motor vehicles for transportation of persons with max 8 seats, not including the driver's seat

N1 category of vehicles - motor vehicles with 2 wheels (mopeds), whose operation cylinder volume is under 50 cm³ or with electro motors whose net power is under 4 kW and whose fastest construction speed is under 45 km/h

Passenger-kilometre (pkm) – the unit of measurement representing the transport of one passenger over one kilometre

Red list – list of threatened species in the Republic of Croatia, with associated categories of threat according to the IUCN criteria

Sink – a process, activity or mechanism that removes greenhouse gases, aerosols or greenhouse gas precursors

from the atmosphere, e.g. absorption by plants by photosynthesis

Waste recycling – any procedure whose main result is the recycling of waste for useful purposes when waste replaces other materials which would normally be used for that purpose or waste prepared for that purpose, in a factory or in wider economic terms. Annex II of the Act on Sustainable Waste Management contains a list of recycling procedures which does not exclude other possible recycling procedures.

The background features a repeating pattern of small circular icons in green and grey. These icons represent various environmental elements: a flame, a tree, a fish, wavy lines for water, a recycling symbol, a leaf, and a cloud. Large, semi-transparent green arrows are also visible, pointing in different directions across the slide.

The Environment In Your Pocket I - 2016

Croatian Agency for the Environment and Nature