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The EU Environmental Implementation Review
Country Report - CROATIA

Accompanying the document

Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions

The EU Environmental Implementation Review: Common Challenges and how to combine efforts to deliver better results

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This report has been written by the staff of the Directorate-General for Environment, European Commission. Any comments are welcome to the following e-mail address: ENV-EIR@ec.europa.eu

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Executive summary

About the Environmental Implementation Review

In May 2016, the Commission launched the Environmental Implementation Review (EIR), a two-year cycle of analysis, dialogue and collaboration to improve the implementation of existing EU environmental policy and legislation[1]. As a first step, the Commission drafted 28 reports describing the main challenges and opportunities on environmental implementation for each Member State. These reports are meant to stimulate a positive debate both on shared environmental challenges for the EU, as well as on the most effective ways to address the key implementation gaps. The reports rely on the detailed sectoral implementation reports collected or issued by the Commission under specific environmental legislation as well as the 2015 State of the Environment Report and other reports by the European Environment Agency. These reports will not replace the specific instruments to ensure compliance with the EU legal obligations.

The reports will broadly follow the outline of the 7th Environmental Action Programme[2] and refer to the 2030 Agenda for Sustainable development and related Sustainable Development Goals (SDGs)[3] to the extent to which they reflect the existing obligations and policy objectives of EU environmental law.

The main challenges have been selected by taking into account factors such as the importance or the gravity of the environmental implementation issue in the light of the impact on the quality of life of the citizens, the distance to target, and financial implications.

The reports accompany the Communication *"The EU Environmental Implementation Review 2016: Common challenges and how to combine efforts to deliver better results"*, which identifies challenges that are common to several Member States, provides preliminary conclusions on possible root causes of implementation gaps and proposes joint actions to deliver better results. It also groups in its Annex the actions proposed in each country report to improve implementation at national level.

General profile

Croatia is characterised by rich natural heritage, with an abundance of water, remarkable coastal waters, natural parks and diverse marine and terrestrial ecosystems. Croatia's economic development depends largely on these resources and in particular tourism sector. However, the expansion of tourism has undoubtedly both a direct and an indirect impact on the environment which includes pressure on biodiversity, increase in waste generation and water and energy consumption. All these pressures need to be addressed adequately. Sustaining Croatia's economic development depends essentially on effective natural resources management, increased investments and ensuring compliance with the EU environmental legislation. The most critical sector that needs urgent action is waste management. The transition to a more circular economy is slow and it will require strong involvement of policy-makers, business actors and consumers. The designation of Natura 2000 sites and implementing conservation measures represent a challenge as well.

Main Challenges

The three main challenges with regard to implementation of EU environmental policy and law in Croatia are:

- Improving waste management in particular increasing recycling of municipal waste to meet the EU recycling target by 2020 and facilitate the transition to a more circular economy together with the improvement of resource efficiency and eco-innovation.
- Completing the designation of Natura 2000 sites (marine SCIs and SPAs and SACs) and ensuring their effective management.
- Prioritising the implementation of projects necessary for the fulfilment of the requirements of the Accession Treaty with respect to Urban Waste Water Treatment Directive and Drinking Water Directive.

Main Opportunities

Croatia could perform better on topics where there is already a good knowledge base and good practices. This applies in particular to:

- Learning from the local examples of good waste management practices and replicating them in less successful regions.
- Ensuring effective protection and restoration of Croatia's natural capital, especially under the Natura 2000 network so as to maximise potential benefits deriving from ecosystem services which can serve as powerful economic drivers, including through green

[1] Communication "Delivering the benefits of EU environmental policies through a regular Environmental Implementation Review" (COM/2016/ 316 final).

[2] Decision No. 1386/2013/EU of 20 November 2013 on a General Union Environmental Action Programme to 2020 "Living well, within the limits of our planet".

[3] United Nations, 2015. The Sustainable Development Goals

tourism and other sustainable activities.

- Turning waste into resource and low recycling rates into business opportunities.

Points of Excellence

There are several examples of good practices of environmental implementation or innovative approaches that could serve as an example. These are:

- Eco Island Krk is ecologically based system for management of municipal waste, which represents an integral model of waste disposal, first of its kind in Croatia. In 2015, the municipality has reached 50% of waste separation and the preparation for re-use and the recycling, therefore already meeting the 2020 target under the Waste Framework Directive. A great importance is given to the promotion of the system and education of users.
- An EU-funded project on modernisation of the water and wastewater infrastructure has been finalised in Slavonski Brod[4]. Its main objective was to ensure that it meets European standards, bringing benefits to inhabitants and safeguarding the environment of the River Danube Basin.
- In October 2015, Croatia prepared the Green Book: the technical basis for the development of low carbon strategy for Croatia for the period until 2030 with an outlook to 2050. This strategy sets the path towards a competitive low-carbon economy. It applies to all sectors of the economy and human activities, but it is especially related to the energy, industry, transport, agriculture, forestry and waste management. It is superior to the sector strategies, although operationally implemented through the individual sectors.

[4] http://ec.europa.eu/regional_policy/en/projects/croatia/improving-water-supply-and-wastewater-treatment-in-slavonski-brod

Part I: Thematic Areas

1. Turning the EU into a circular, resource-efficient, green and competitive low-carbon economy

Developing a circular economy and improving resource efficiency

The 2015 Circular Economy Package emphasizes the need to move towards a lifecycle-driven 'circular' economy, with a cascading use of resources and residual waste that is close to zero. This can be facilitated by the development of, and access to, innovative financial instruments and funding for eco-innovation.

SDG 8 invites countries to promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all. SDG 9 highlights the need to build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation. SDG 12 encourages countries to achieve the sustainable management and efficient use of natural resources by 2030.

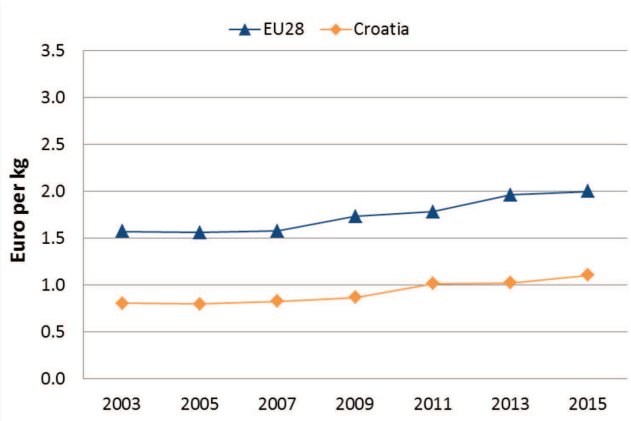
Measures towards a circular economy

Transforming our economies from linear to circular offers the opportunity to reinvent them and make them more sustainable and competitive. This will stimulate investments and bring both short and long-term benefits for the economy, environment and citizens alike[5].

Given the low resource productivity[6] and low recycling rates in Croatia, promoting a circular economy and improving resource efficiency could stimulate investment. Resource productivity in Croatia (how efficiently the economy uses material resources to produce wealth), has improved slightly over the last ten years, however, it is still much below the EU average, with 1.1 EUR/kg (EU average is 2.0 EUR/kg) in 2015 as shown in Figure 1[7].

Croatia's environmental and socio-economic issues indicate that Croatia is only beginning its transition from a linear to a circular economy. Six years period of economic recession, a general lack of adequate policies and competences and a regulatory framework that remains only partially adjusted to EU regulations contribute to Croatia's lag in its transition towards a circular economy.

Figure 1: Resource productivity 2003-15[8]



There exists broad based consensus that there is no long-term involvement in the push to the transition to a circular economy which presents a great challenge for Croatian policy-makers, national and local authorities, as well as to economic actors, such as business and consumers. Yet, there exists growing awareness among these actors that current circumstances demand systematic change in business and market models, product design, ways of transferring waste to resources, and in the producers and consumers' related values and behaviour.

In Croatia, the most relevant policies for the development of circular economy and eco-innovation include:

- Sustainable Development Strategy of (2009)
- Strategic plan of Ministry of Environment and Nature Protection 2015-2017
- National renewable energy action plan until 2020
- Strategy for innovation encouragement of the Republic of Croatia 2014-2020
- Third national plan for energy efficiency 2014-2016 and
- Waste Management Strategy

Other related policy instruments in the area of circular economy include the Energy Efficiency Act (2015), Croatian research and innovation infrastructures roadmap (2014), National action plan for Green procurement (2015) and Act on Renewable Energy Sources and High Efficient Cogeneration (2015).

[5] European Commission, 2015. Proposed Circular Economy Package
[6] Resource productivity is defined as the ratio between gross domestic product (GDP) and domestic material consumption (DMC).
[7] Eurostat, Resource productivity, accessed October 2016.
[8] Eurostat, Resource productivity, accessed October 2016

SMEs and resource efficiency

SMEs in Croatia account for 56.2% of total value added - compared with 58% in the EU - and provide 67% of total employment, which is close to the EU average. Since 2008, the value added of Croatian SMEs has dropped by over 25% and their employment by nearly 13%. The outlook for the period 2014-2016 offers a gradual recovery. SME employment is predicted to grow by over 3%, creating about 21 700 new jobs by 2016. SME value added is expected to increase by 6%. The forecast is particularly encouraging for micro enterprises, as their value added is projected to rise by 9% and their employment by 6%.

In the Flash 426 Eurobarometer "SMEs, resource efficiency and green markets" it is shown that in 2015 57% of Croatia's SMEs have invested up to 5% of their annual turnover in their resource efficiency actions, 23% of them are currently offering green products and services, 64% took measures to save energy (EU28 average 59%), 66% to minimise waste (EU28 average 60%), 51% to save water (EU28 average 44%), and 53% to save materials (EU28 average 54%). From a circular economy perspective, 33% took measures to recycle by reusing material or waste within the company, 18% to design products that are easier to maintain, repair or reuse and 27% were able to sell their scrap material to another company.

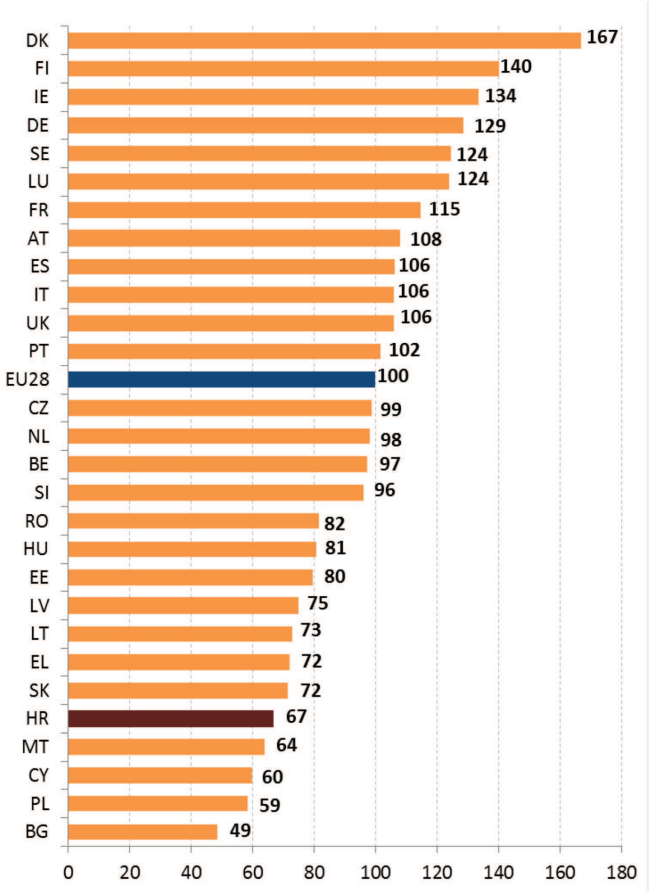
Cost saving is by far the most common reason for taking resource efficiency actions (68% of SMEs in the EU). In Croatia, 71% of the SMEs taking resource efficiency actions are doing so for cost savings. In fact, according to the Flash 426 Eurobarometer, the resource efficiency actions undertaken allowed the reduction of production costs in a 51% of the Croatian SMEs.

The Flash 426 Eurobarometer "SMEs, resource efficiency and green markets" defines "green job" as a job that directly deals with information, technologies, or materials that preserves or restores environmental quality. This requires specialised skills, knowledge, training, or experience (e.g. verifying compliance with environmental legislation, monitoring resource efficiency within the company, promoting and selling green products and services) shows that 45% of the SMEs in Croatia have one or more full time employee working in a green job at least some of the time. Croatia has an average number of 3 full time green employees per SME.

Eco-Innovation

For the year 2015 Croatia is ranked low among the EU-28 countries in terms of eco-innovation performance as shown in Figure 2. The country has achieved an index 33% lower than the EU average. This places Croatia fifth from the bottom in the EU-28 ranking of eco-innovation, which is the same ranking Croatia held in 2013.

Figure 2: Eco-Innovation Index 2015 (EU=100)[9]



Within EU funding programs, the Competitiveness and Innovation Framework Programme (CIP) is considered very successful in terms of co-financing projects related to eco-innovation. CIP concludes at the end of 2016, but programs, such as HORIZON 2020 may further stimulate the development of eco-innovation, continue running.

Croatia underwent a significant period of economic recession from 2008 until 2014, which had significant negative impacts on the scope of investments, including those in clean technologies. A major consequence of the recession included significantly less funds allocated for environmental improvements as well as for research and development in the environmental technologies sector. In 2014 and 2015 a modest growth of production was observed and slow rates of growth are also predicted for the year 2016. Thus, access to investments for eco-innovation and circular economy development remain mainly provided through EU funds.

Eco-innovation could be further developed and promoted in Croatia. A targeted eco-innovation policy still does not exist. Current efforts of responsible bodies to support technological innovation in general (which primarily focus on the small and medium-sized business sector) may not be sufficient to improve eco-innovation.

[9] Eco-innovation Observatory: Eco-Innovation scoreboard 2015

Regarding the Eco-Management and Audit Scheme (EMAS) registration, Croatia, is one of the two Member States, having no EMAS registration in the country. All administrative procedures are in place, but there is no official promotion strategy in place.

Regarding Ecolabel licenses, Croatia is within the lowest achieving group of EU countries. Indeed, it has had less than 10 Ecolabel licenses.

Suggested action

- Strengthen the policy framework to speed up the uptake of the circular economy by all economic sectors..

Waste management

Turning waste into a resource requires:

- Full implementation of Union waste legislation, which includes the waste hierarchy; the need to ensure separate collection of waste; the landfill diversion targets etc.
- Reducing per capita waste generation and waste generation in absolute terms.
- Limiting energy recovery to non-recyclable materials and phasing out landfilling of recyclable or recoverable waste.

SDG 12 invites countries to substantially reduce waste generation through prevention, reduction, recycling and reuse, by 2030.

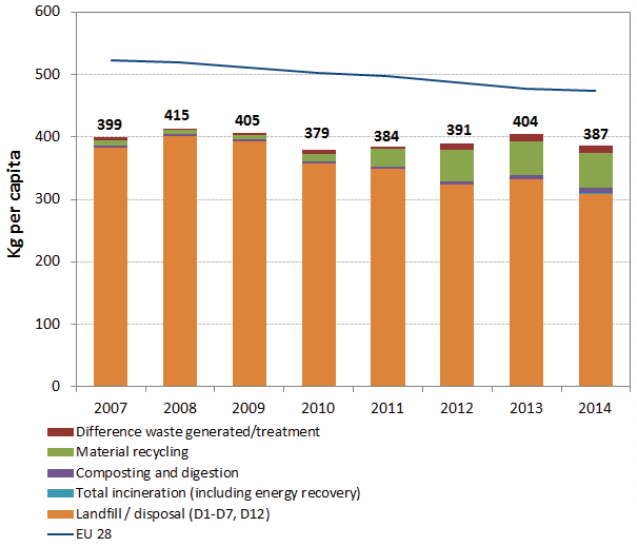
The EU's approach to waste management is based on the "waste hierarchy" which sets out an order of priority when shaping waste policy and managing waste at the operational level: prevention, (preparing for) reuse, recycling, recovery and, as the least preferred option, disposal (which includes landfilling and incineration without energy recovery).

The progress towards reaching recycling targets and the adoption of adequate WMP/WPP[10] should be the key items to measure the performance of Member States. This section focuses on management of municipal waste for which EU law sets mandatory recycling targets.

Municipal waste[11] generation has slightly decreased in 2014 breaking the upward trend since 2010 and remaining considerably below the EU average (387 kg/y/inhabitant compared to around 475 kg/y/inhabitant).

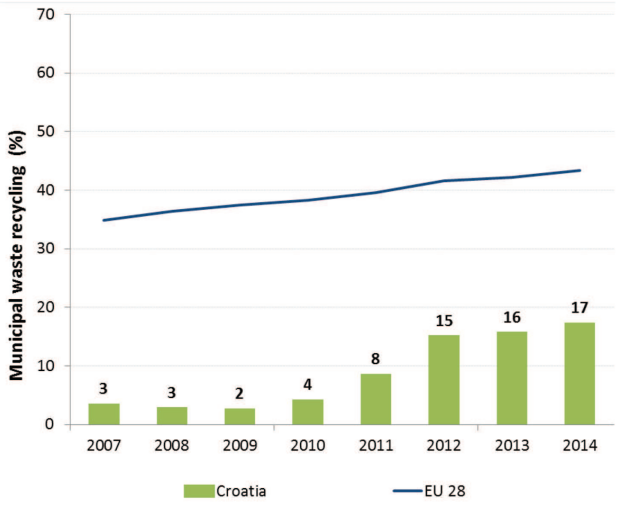
Figure 3 depicts the municipal waste by treatment in Croatia in terms of kg per capita, which shows a slight increase in recycling and reduction in landfilling.

Figure 3: Municipal waste by treatment in Croatia 2007-14[12]



Recycling of municipal waste (including composting) remains quite low (17% in 2014 compared to the EU average of 44% in 2014); significant efforts will be needed to meet the EU recycling target by 2020 as shown in Figure 4[13].

Figure 4: Recycling rate of municipal waste 2007-14[14]



Landfilling of municipal waste accounts for 83% whereas the EU average is 28% (2014). The amount of landfilled Biodegradable Municipal Waste (BMW) is decreasing.

Furthermore, in 2013, 115% of BMW was landfilled compared to the reference year 1997. Therefore, the EU Accession Treaty target for 2013 (to landfill a maximum

[10] Waste Management Plans/Waste Prevention Programmes

[11] Municipal waste consists of waste collected by or on behalf of municipal authorities, or directly by the private sector (business or private non-profit institutions) not on behalf of municipalities.

[12] Eurostat, Municipal waste and treatment, by type of treatment method, accessed October 2016

[13] Member States may choose a different method than the one used by ESTAT (and referred to in this report) to calculate their recycling rates and track compliance with the 2020 target of 50% recycling of municipal waste.

[14] Eurostat, Recycling rate of municipal waste, accessed October 2016

amount of BMW equivalent to 75%) was clearly missed. In addition, illegal landfilling remains an important problem in Croatia[15], and even though a great effort has been taken for remediation and consequently closing illegal dumping sites, there is still scope for improvement.

The underlying causes for the current distance to EU waste targets are: suboptimal planning of waste management, insufficient incentives to manage waste according to the waste hierarchy, insufficient (door-to-door) separate collection of waste, lack of clear allocation of tasks and lack of co-ordination between the different administrative levels, and insufficient enforcement capacity. Although Croatia has invested in improvements to its waste management services, to date, most of the investment has been focussed on residual waste treatment. At the lower levels of the hierarchy, and at the local level, however, there is insufficient funding available to develop and operate source segregated collection services.

An example to look upon is Eco Island Krk, as already explained in the Executive summary.

Croatia has joined the European Union relatively recently, and compliance with the legislation has therefore required significant changes to the country's waste management system and legislation in recent years.

In order to help bridge the implementation gap in Croatia, the Commission has delivered a roadmap for compliance in which economic instruments play a crucial role[16].

The Commission initiated the infringement procedure against Croatia for the non-conformity of the Croatian legislation with the Waste Framework Directive. The assessment of conformity of the national legislation with other EU directives in the waste sector will follow.

Croatia was late in adopting the national waste management Plan (WMP) and the waste prevention programme (WPP) (the deadline was 31 December 2014[17]), which are the necessary tools to reflect on the existing policies and develop a strategy to achieve the EU waste management targets. These are key implementation documents also relevant to secure key EU funds under cohesion policy. The situation was reflected in the infringement case for the lack of a valid WMP and WPP.

A draft WMP for the period 2015-2021 was prepared in late 2015. However, its adoption has been delayed due to the change of the government. A new draft WMP for the period 2016 – 2022 was prepared and the government planned to adopt it by the end of 2016. It has finally been adopted in January 2017. The WPP is an integral part of the new WMP.

Suggested action

- Focus more effort on implementation of the separate collection obligation to increase recycling rates. Introduce and gradually increase landfill taxes to phase-out landfilling of recyclable and recoverable waste. Use the revenues to support the separate collection and alternative infrastructure in conjunction with a use of the cohesion policy funds to the first steps of waste hierarchy. Investments in the infrastructure for the treatment of residual waste should be carefully planned in order to avoid building excessive capacity.
- Undertake a review of the extended producer responsibility schemes to improve their effectiveness.

[15] Partnership agreement for the European Structural and investment funds in the EU financial period 2014-2020

[16] European Commission, Support to Implementation – The Commission helps 8 Member States to improve their municipal waste management.. Fact sheet for Croatia.

[17] http://mzoip.hr/doc/act_on_sustainable_waste_management.pdf , Article 181

2. Protecting, conserving and enhancing natural capital

Nature and Biodiversity

The EU Biodiversity Strategy aims to halt the loss of biodiversity in the EU by 2020, restore ecosystems and their services in so far as feasible, and step up efforts to avert global biodiversity loss. The EU Birds and Habitats Directives aim at achieving favourable conservation status of protected species and habitats.

SDG 14 requires countries to conserve and sustainably use the oceans, seas and marine resources, while SDG 15 requires countries to protect, restore and promote the sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

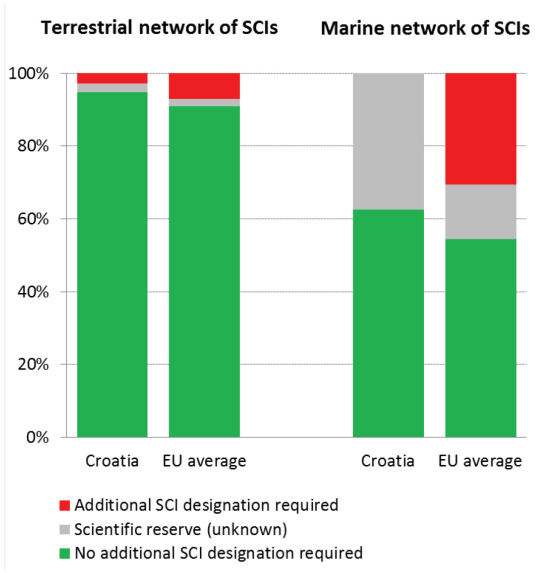
The 1992 EU Habitats Directive and the 1979 Birds Directive are the cornerstone of the European legislation aimed at the conservation of the EU's wildlife. Natura 2000, the largest coordinated network of protected areas in the world, is the key instrument to achieve and implement the Directives' objectives to ensure the long-term protection, conservation and survival of Europe's most valuable and threatened species and habitats and the ecosystems they underpin.

The adequate designation of protected sites as Special Ares of Conservation (SAC) under the Habitats Directive and as Special Protection Areas (SPA) under the Birds Directive is a key milestone towards meeting the objectives of the Directives. The results of Habitats Directive Article 17 and Birds Directive Article 12 reports and the progress towards adequate Sites of Community Importance (SCI)-SPA and SAC designation[18] both in land and at sea, should be the key items to measure the performance of Member States.

The Croatian Natura 2000 network under the Habitats and the Birds Directives was officially designated in 2013 and amended in 2015. The Natura 2000 network covers 36.5% of Croatian land area (2nd largest network in the EU in relation to MS area) and significant marine area (4986 km^2)[19]. By 2015, Croatia designated 741 sites of community interest (SCI) and 38 special protection areas (SPA).

While the terrestrial part of the network can now be considered complete[20], the marine part still presents some insufficiencies in terms of designation (see Figure 5[21]).

Figure 5: Sufficiency assessment of SCI networks in Croatia based on the situation until December 2013 (%)[22]



The 6-year deadline required by the Habitats Directive to designate the Special Areas of Conservation and establish appropriate conservation measures has not yet expired.

According to the information submitted by Croatian authorities, the funding for the implementation of the Habitats and Birds Directives is insufficient[23]. As the prioritised action framework (PAF) has not been prepared, estimate of the financing needs to fulfil the obligations under these Directives was done in the process of preparation of the OPs under European Structural and Investment Funds – ESI funds. The extensive work is underway within several national projects (with the use of ESI funds) to map biodiversity

[18] Sites of Community Importance (SCIs) are designated pursuant to the Habitats Directive whereas Special Areas of Protection (SPAs) are designated pursuant to the Birds Directive; figures of coverage do not add up due to the fact that some SCIs and SPAs overlap. Special Areas of Conservation (SACs) means a SCI designated by the Member States.

[19] European Commission, Natura2000 nature and biodiversity newsletter January 2016

[20] For each Member State, the Commission assesses whether the species and habitat types on Annexes I and II of the Habitats Directive, are sufficiently represented by the sites designated to date. This is expressed as a percentage of species and habitats for which further areas need to be designated in order to complete the network in that country. A scientific reserve is given when further research is needed to identify the most appropriate sites to be added for a species or habitat. The current data, which were assessed in 2014-2015, reflect the situation up until December 2013.

[21] The percentages in Figure 5 refer to percentages of the total number of assessments (one assessment covering 1 species or 1 habitat in a given biographical region with the Member State); if a habitat type or a species occurs in more than 1 Biogeographic region within a given Member State, there will be as many individual assessments as there are Biogeographic regions with an occurrence of that species or habitat in this Member State.

[22] European Commission, internal assessment.

[23] Milieu Ltd., 2016. Evaluation Study to support the Fitness Check of the Birds and Habitats Directives- Draft Final Report for the European Commission, January 2016

components and to establish the monitoring and reporting systems. The work on the Natura 2000 management framework in the following years should establish the necessary management structures and design concrete measures on the site level. However, there is a lack of efficient cooperation with some sectors (e.g. energy and fisheries) which can be an obstacle to achieving the objectives of the directives. Some steps have been taken to strengthen cooperation with the water sector, but more effort is needed for the effective integration of nature and biodiversity protection objectives into water management.

In 2016, the Commission initiated infringement procedures against Croatia for non-conformity of the national legislation with the Habitats Directive and the Birds Directive. Croatia has committed to rectify the instances of non-conformity by the end of 2016. However, in December 2016 we have been informed that we should expect a half a year delay.

Croatia has joined the EU in 2013 and therefore has not yet reported on the conservation status of habitats and species covered by the Habitats Directive and the status of the implementation of the Birds Directive. The first report is due in 2019.

The majority of natural habitats are contracting: watercourses and adjacent wetlands due to regulation works; coastal habitats due to building and tourism related activities; grasslands overgrowing due to ceasing of traditional use - mowing and grazing. Fragmentation of habitats was increased due to increased building of highways and other roads.

The construction of roads and other transport routes typically results in habitat fragmentation. However, in Croatia potential threats to large carnivores from highway construction have been reduced through the construction of green bridges, serving as animal corridors. Today there are 11 such crossings, which are regularly monitored, including the use of camera traps that document what is happening on individual crossings. Monitoring proves that crossings are highly effective and used regularly by large carnivores and other animals.

Suggested action

- Complete the SAC designation process and put in place clearly defined conservation objectives and the necessary conservation measures for the sites and provide adequate resources for their implementation in order to maintain/restore species and habitats of community interest to a favourable conservation status across their natural range.
- Develop the prioritised action framework (PAF) to enable the strategic financial planning and ensure the adequate EU co-financing for the next programming period according to the identified needs.

Estimating Natural Capital

The EU Biodiversity Strategy to 2020 calls on the Member States to map and asses the state of ecosystems and their services in their national territory by 2014, assess the economic value of such services, and promote the integration of these values into accounting and reporting systems at EU and national level by 2020.

Croatia has completed a Study on Freshwater Ecosystem Services[24][25] according to the Millennium Ecosystem Assessment (MA), with a focus on lowland river ecosystems and services in the Danube basin. A mapping exercise for terrestrial habitats is underway, as a basis for the mapping and assessment of ecosystems and their services.

Suggested action

- Strengthen support for the mapping and assessment of ecosystems and their services, and valuation work and develop natural capital accounting systems.

[24] Ecosystem services are benefits provided by nature such as food, clean water and pollination on which human society depends.

[25] http://www.hr.undp.org/content/dam/croatia/docs/Research%20and%20publications/environment/Study%20of%20Freshwater%20Ecosystem%20Services%20in%20Croatia_FINAL_eng.pdf

Green Infrastructure

The EU strategy on green infrastructure[26] promotes the incorporation of green infrastructure into related plans and programmes to help overcome fragmentation of habitats and preserve or restore ecological connectivity, enhance ecosystem resilience and thereby ensure the continued provision of ecosystem services.

Green Infrastructure provides ecological, economic and social benefits through natural solutions. It helps to understand the value of the benefits that nature provides to human society and to mobilise investments to sustain and enhance them.

There are some good examples of the use of natural solutions in Croatia, in particular for flood protection. The largest floodwater retention area in the Central Sava Basin is located in the Lonjsko Polje Nature Park, combining the ecological and landscape diversity values of natural floodplains and wetlands with the storage of floodwaters of the Sava River.

However, a more strategic approach to flood risk reduction is needed to ensure that environmental impacts are duly considered and that Flood Risk Management Plans are coordinated with River Basin Management Plans. The use of natural water retention measures should be prioritised to deliver environmental, social and economic benefits.

Having in mind that roughly one third of the Croatian Natura 2000 network is agricultural land, the Rural Development Programme of Croatia for the period 2014-2020 includes a sub-measure to "*support non-productive investments linked to the achievement of agri-environment-climate objectives*". Within this sub-measure, restoration of habitats important for biodiversity conservation (e.g. meadows, pastures and ponds for livestock watering) can be financed. Additionally, in order to ensure maintenance and preservation of the valuable habitats, a sub-measure on "*payment for agri-environment-climate commitments*" was developed.

Soil protection

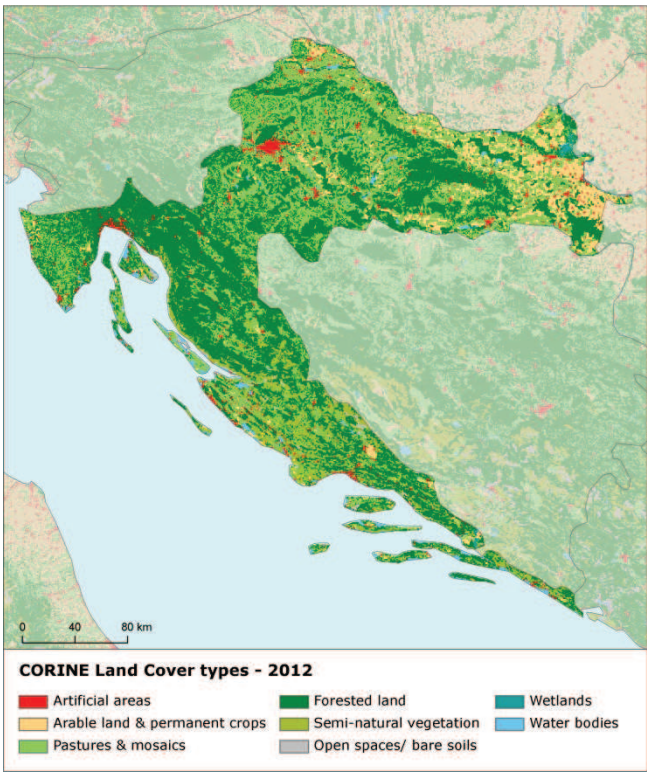
The EU Soil Thematic Strategy highlights the need to ensure a sustainable use of soils. This requires the prevention of further soil degradation and the preservation of its functions, as well as the restoration of degraded soils. The 2011 Road Map for Resource-Efficient Europe, part of Europe 2020 Strategy provides that by 2020, EU policies take into account their direct and indirect impact on land use in the EU and globally, and the rate of land take is on track with an aim to achieve no net land take by 2050.

SDG 15 requires countries to combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land-degradation-neutral world by 2030.

Soil is an important resource for life and the economy. It provides key ecosystem services including the provision of food, fibre and biomass for renewable energy, carbon sequestration, water purification and flood regulation, the provision of raw and building material. Soil is a finite and extremely fragile resource and increasingly degrading in the EU. Land taken by urban development and infrastructure is highly unlikely to be reverted to its natural state; it consumes mostly agricultural land and increases fragmentation of habitats. Soil protection is indirectly addressed in existing EU policies in areas such as agriculture, water, waste, chemicals, and prevention of industrial pollution.

Figure 6 shows the different land cover types in Croatia in 2012.

Figure 6: Land Cover types in Croatia 2012[27]



Artificial land cover is used for settlements, production systems and infrastructure. It may itself be split between built-up areas (buildings) and non-built-up areas (such as linear transport networks and associated areas).

The annual land take rate (growth of artificial areas) was 0.41% over the period 2006-2012, identical to the EU average (0.41%). It represented 783 hectares per year

[26] European Union, Green Infrastructure — Enhancing Europe's Natural Capital, COM/2013/0249

[27] European Environment Agency, Land cover 2012 and changes country analysis [publication forthcoming]

and is increasingly driven by the sprawl of industrial and commercial units[28]. The percentage of built up land in 2009 was 2.19%, below the EU average (3.23%)[29].

The soil water erosion rate in 2010 was 3.09 tonnes per ha per year, close to EU-28 average (2.46 tonnes)[30].

There are still no EU-wide datasets enabling the provision of benchmark indicators for soil organic matter decline, contaminated sites, pressures on soil biology and diffuse pollution. An updated inventory and assessment of soil protection policy instruments in Croatia and other EU Member States is being performed by the EU Expert Group on Soil Protection.

Marine protection

The EU Coastal and Marine Policy and legislation require that by 2020 the impact of pressures on marine waters is reduced to achieve or maintain good environmental status and coastal zones are managed sustainably.

SDG 14 requires countries to conserve and sustainably use the oceans, seas and marine resources for sustainable development.

The Marine Strategy Framework Directive (MSFD)[31] aims to achieve Good Environmental Status (GES)[32] of the EU's marine waters by 2020 by providing an ecosystem approach to the management of human activities with impact on the marine environment. The Directive requires Member States to develop and implement a marine strategy for their marine waters, and cooperate with Member States sharing the same marine region or sub-region.

As part of their marine strategies, Member States had to make an initial assessment of their marine waters, determine GES and establish environmental targets by July 2012. They also had to establish monitoring programmes for the on-going assessment of their marine waters by July 2014. The next element of their marine strategy is to establish a Programme of Measures (first quarter 2017). The Commission assesses whether these elements constitute an appropriate framework to meet the requirements of the MSFD.

Croatian marine waters are part of the Mediterranean marine region and the Adriatic Sea sub-region. Croatia is party to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention). The Mediterranean Sea region has been identified by the EEA in its 2015 State of the Environment report as one of the main climate change hotspots (i.e. one of the areas most responsive to climate change) due to water scarcity, concentration of economic activities in coastal areas, and reliance on climate-sensitive agriculture. The introduction of invasive alien species presents an important threat in the Mediterranean Sea Region with the number of invasive alien species increasing significantly since 1970. Finally, the unique biodiversity of the Mediterranean Sea Region is also threatened by pollution from land-based sources, such as discharges of excess nutrients and hazardous substances, marine litter, over-fishing, and degradation of critical habitats.

The Commission is currently assessing the conformity of Croatian legislation with the MSFD.

With regards to specificities of implementation of the MSFD, Croatia has defined GES for all descriptors[33]; however the approach used by Croatia to define GES varies between Descriptors. In some cases it is unclear if GES is actually defined for the Descriptor while other GES definitions are indicated as being proposals[34].

It is therefore too early to say whether Croatian waters are in good status as there were weaknesses in identifying what "good environmental status" is in the first place.

Croatia established a monitoring programme of its marine waters in 2014. However it seems that its monitoring programmes for all descriptors need further refinement and development to constitute an appropriate framework to monitor progress towards GES, especially since the monitoring programme will not be

28 European Environment Agency Draft results of CORINE Land Cover (CLC) inventory 2012; mean annual land take 2006-12 as a % of 2006 artificial land.

29 European Environment Agency, 2016. Imperviousness and imperviousness change

30 Eurostat, Soil water erosion rate, Figure 2, accessed November 2016

31 European Union, Marine Strategy Framework Directive 2008/56/EC

32 The MSFD defines Good Environmental Status (GES) in Article 3 as: "The environmental status of marine waters where these provide ecologically diverse and dynamic oceans and seas which are clean, healthy and productive"

33 To help Member States interpret what GES means in practice, the Directive sets out, in Annex I, eleven qualitative descriptors which describe what the environment will look like when GES has been achieved.

34 Commission Staff Working Document Accompanying the Commission Report assessing Member States' monitoring programmes under the Marine Strategy Framework Directive (COM(2017)3 and SWD(2017)1 final)

adequate to monitor progress towards its targets before 2018 for most descriptors, the date by which the next assessment of Croatia's marine waters is due[35]. However, it is important to note that the monitoring programme is reported as being adequate to monitor progress towards GES as of 2014.

In its report on the implementation of the MSFD[36], the Commission provided guidance to assist Croatia in its implementation of the Marine Strategy Framework Directive.

Suggested action

- Continue work to improve the definitions of GES, including through regional cooperation by using the work of the relevant Regional Sea Convention.
- Further develop approaches assessing (and quantifying) impacts from the main pressures in order to lead to improved and more conclusive assessment results for 2018 reporting.
- Continue to integrate already existing monitoring programmes required under relevant EU legislation; and other international agreements and to implement joint monitoring programmes, developed at (sub)regional level, for instance by the Barcelona Convention.
- Enhance compatibility and consistency of monitoring methods within its marine region.
- Urgently report and implement its programme of measures.
- Ensure that the monitoring programme is appropriate to monitor progress towards GES.

[35] Commission Staff Working Document Accompanying the Commission Report assessing Member States' monitoring programmes under the Marine Strategy Framework Directive (COM(2017)3 and SWD(2017)1 final)

[36] Commission Staff Working Document Accompanying the Commission Report assessing Member States' monitoring programmes under the Marine Strategy Framework Directive (COM(2017)3 and SWD(2017)1 final)

3. Ensuring citizens' health and quality of life

Air quality

The EU Clean Air Policy and legislation require that air quality in the Union is significantly improved, moving closer to the WHO recommended levels. Air pollution and its impacts on ecosystems and biodiversity should be further reduced with the long-term aim of not exceeding critical loads and levels. This requires strengthening efforts to reach full compliance with Union air quality legislation and defining strategic targets and actions beyond 2020.

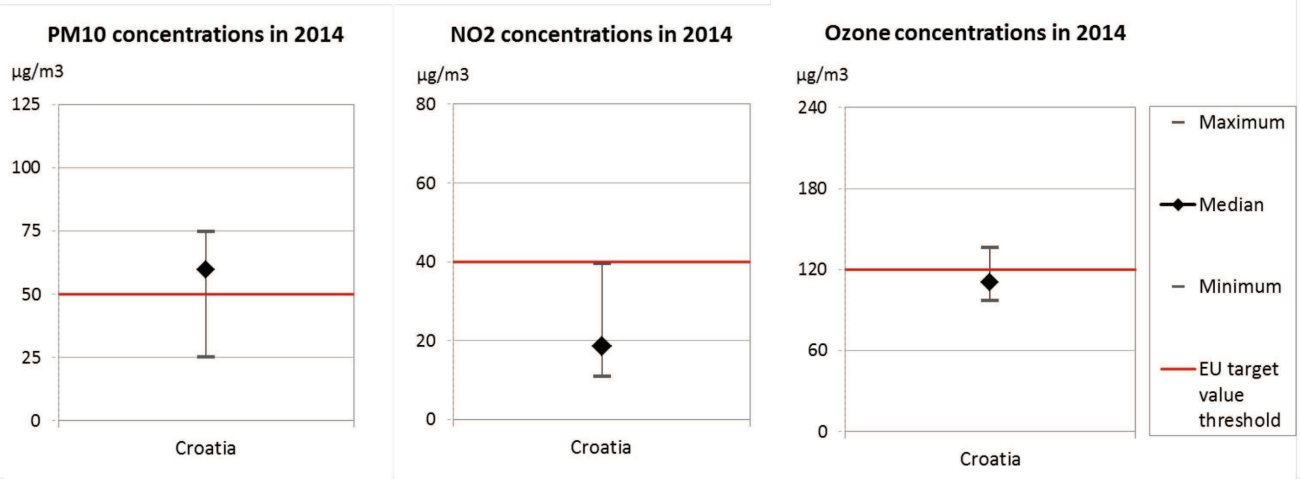
The EU has developed a comprehensive suite of air quality legislation[37], which establishes health-based standards and objectives for a number of air pollutants. As part of this, Member States are required to ensure that up-to-date information on ambient concentrations of different air pollutants is routinely made available to the public. The National Emission Ceilings Directive provides for emission reductions at national level that should be achieved for main pollutants.

The emission of several air pollutants has decreased significantly in Croatia[38]. Reductions between 1990 and 2014 for sulphur oxides (91%), nitrogen oxides (-47%), ammonia (-42%) as well as volatile organic compounds (-57%) ensure air emissions for these pollutants are within the currently applicable national emission ceilings[39].

At the same time, air quality in Croatia is giving cause for concern. For the year 2013, the European Environment Agency[40] estimated that about 4 820 premature deaths were attributable to fine particulate matter concentrations, 240 to ozone concentration[41] and 160 to nitrogen dioxide concentrations[42]. This is due also to exceedances above the EU air quality standards such as shown in Figure 7[43].

For 2014, exceedances above the EU air quality standards have been registered for concentrations of particulate matter (PM_{10})[44] in three air quality zones. Target values

Figure 7: Attainment situation for PM10, NO2 and O3 in 2014



Note: *These graphs show concentrations as measured and reported by the Member State at different locations; specifically they show, (a) for PM10, the 90.4 percentile of daily mean concentration, which corresponds to the 36th highest daily mean, (b) for NO2, the annual mean concentration, and (c) for O3, the 93.2 percentile of maximum daily 8-hour mean concentration values, which corresponds to the 26th highest daily maximum. For each pollutant they depict both the lowest and highest concentration reported, as well as the median values (i.e. note that 50% of the stations report lower concentrations than the respective median value, the other 50% report higher concentrations). The air quality standards as set by EU legislation are marked by the red line.*

[37] European Commission, 2016. Air Quality Standards

[38] See EIONET Central Data Repository and Air pollutant emissions data viewer (NEC Directive)

[39] The current national emission ceilings apply since 2010 (Directive 2001/81/EC); revised ceilings for 2020 and 2030 have been set by Directive (EU) 2016/2284 on the reduction of national emissions of certain atmospheric pollutants, amending Directive 2003/35/EC and repealing Directive 2001/81/EC.

[40] European Environment Agency, 2016. Air Quality in Europe – 2016 Report. (Table 10.2, please see details in this report as regards the underpinning methodology)

[41] Low level ozone is produced by photochemical action on pollution and it is also a greenhouse gas.

[42] NOx is emitted during fuel combustion e.g. from industrial facilities and the road transport sector. NOx is a group of gases comprising nitrogen monoxide (NO) and nitrogen dioxide (NO2).

[43] Based on European Environment Agency, 2016. Air Quality in Europe – 2016 Report. (Figures 4.1, 5.1 and 6.1)

[44] Particulate matter (PM) is a mixture of aerosol particles (solid and liquid) covering a wide range of sizes and chemical compositions. PM10 (PM2.5) refers to particles with a diameter of 10 (2.5) micrometres or less. PM is emitted from many human sources, including combustion.

for annual mean concentrations have also been exceeded in two air quality zones for benzo(a)pyrene. Furthermore, the long-term objectives regarding ozone concentrations are not being met in at least one air quality zones[45].

The Commission currently investigates the conformity of the Croatian legislation with the Industrial Emissions Directive.

It is estimated that the health-related external costs from air pollution in Croatia are above EUR 2 billion/year (income adjusted, 2010), which include not only the intrinsic value of living a full health life but also direct costs to the economy. These direct economic costs relate to about 1 million workdays lost each year due to sickness related to air pollution, with associated costs for employers of EUR 92 million/year (income adjusted, 2010), for healthcare of above EUR 6 million/year (income adjusted, 2010), and for agriculture (crop losses) of EUR 30 million/year (2010)[46].

Suggested action

- Maintain downward emissions trends of air pollutants in order to achieve full compliance with air quality limit values - and reduce adverse air pollution impacts on health, environment and economy.
- Reduce PM_{10} emission and concentration, inter alia, by reducing emissions related to energy and heat generation using solid fuels, to transport and to agriculture.

Noise

The Environmental Noise Directive provides for a common approach for the avoidance, prevention and reduction of harmful effects due to exposure to environmental noise.

Excessive noise is one of the main causes of health issues[47]. To alleviate this, the EU *acquis* sets out several requirements, including assessing the exposure to environmental noise through noise mapping, ensuring that information on environmental noise and its effects is made available to the public, and adopting action plans with a view to preventing and reducing environmental noise where necessary and to preserving the acoustic environment quality where it is good.

Croatia's implementation of the Environmental Noise Directive[48] is significantly delayed. The noise mapping for the most recent reporting round, for the reference year 2011, is only complete for agglomerations and major railways. For major roads, only 43% of the mapping is complete. Action plans for noise management in the current period have been adopted for only 25% of agglomerations, 43% of major roads and 0% of major railways.

Suggested action

- Complete action plans for noise management.

Water quality and management

The EU water policy and legislation require that the impact of pressures on transitional, coastal and fresh waters (including surface and ground waters) is significantly reduced to achieve, maintain or enhance good status of water bodies, as defined by the Water Framework Directive; that citizens throughout the Union benefit from high standards for safe drinking and bathing water; and that the nutrient cycle (nitrogen and phosphorus) is managed in a more sustainable and resource-efficient way.

SDG 6 encourages countries to ensure availability and sustainable management of water and sanitation for all.

The main overall objective of EU water policy and legislation is to ensure access to good quality water in sufficient quantity for all Europeans. The EU water *acquis*[49] seeks to ensure good status of all water bodies across Europe by addressing pollution sources (from e.g. agriculture, urban areas and industrial activities), physical and hydrological modifications to water bodies) and the management of risks of flooding.

River Basin Management Plans (RBMPs) are a requirement of the Water Framework Directive and a means of achieving the protection, improvement and sustainable use of the water environment across Europe. This includes surface freshwaters such as lakes and rivers, groundwater, estuaries and coastal waters up to one nautical mile.

Croatia has provided information to the Commission from its second generation of RBMPs. The 2nd RBMP for the period 2016 – 2021 was adopted in July 2016. However, as the Commission has not yet been able to validate this information for all Member States, it is not reported here.

[45] See The EEA/Eionet Air Quality Portal and the related Central Data Repository

[46] These figures are based on the Impact Assessment for the European Commission Integrated Clean Air Package (2013)

[47] WHO/JRC, 2011, Burden of disease from environmental noise, Fritschi, L., Brown, A.L., Kim, R., Schwela, D., Kephalopoulos, S. (eds), World Health Organization, Regional Office for Europe, Copenhagen, Denmark

[48] The Noise Directive requires Member States to prepare and publish, every 5 years, noise maps and noise management action plans for agglomerations with more than 100,000 inhabitants, and for major roads, railways and airports.

[49] This includes the Bathing Waters Directive (2006/7/EC); the Urban Waste Water Treatment Directive (91/271/EEC) concerning discharges of municipal and some industrial waste waters; the Drinking Water Directive (98/83/EC) concerning potable water quality; the Water Framework Directive (2000/60/EC) concerning water resources management; the Nitrates Directive (91/676/EEC) and the Floods Directive (2007/60/EC)

In its first generation of RBMPs Croatia reported the status of 1231 rivers, 34 lakes, 28 transitional, 22 coastal and 32 groundwater bodies. 61% of natural surface water bodies achieve a good or high ecological status[50] and only 19% of heavily modified or artificial water bodies achieve a good or high ecological potential. 98% of surface water bodies, 98% of heavily modified and artificial water bodies and 88% of groundwater bodies achieve good chemical status[51]. 84% of groundwater[52] bodies are in good quantitative status.

The main pressure on the Croatian surface waters is diffuse pollution[53] that affects 94% of water bodies. River management negatively affects 40% followed by flow regulation and morphological alterations that affect 30% of water bodies. Point sources of pollution affect 24% of water bodies and abstraction 1%.

The Croatian RBMP has some deficiencies that result in uncertainties about the status and effectiveness of Programmes of Measures. In particular there are weaknesses in monitoring, methodologies for status assessment and the link between pressures and Programmes of Measures. Addressing these weaknesses would provide more certainty about the water status.

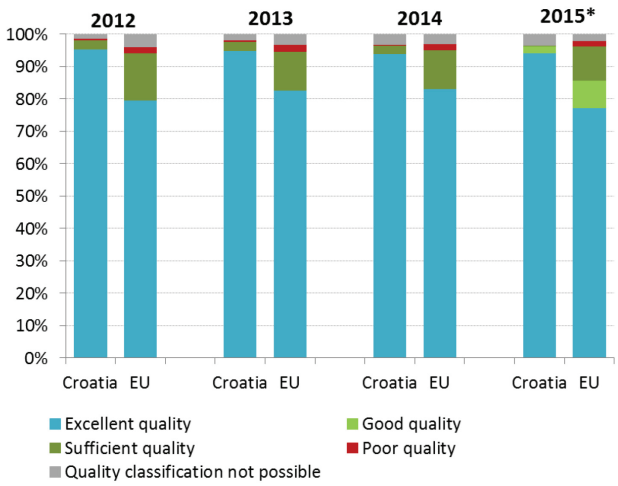
Following Article 10 of the Nitrates Directive, Croatia has submitted in 2016 a report including information pertaining to: codes of good farm practice, designated nitrate vulnerable zones, results of water monitoring and actions programmes.

As regards drinking water, Croatia was not concerned by the latest reporting exercise on the Drinking Water Directive because of the recent Accession to the EU[54]. Croatia benefits from a transitional measure with respect to the requirements of the Drinking Water Directive regarding microbiological and indicator parameters for a number of water supply zones.

As shown in Figure 8, in 2015, in Croatia, out of 935 bathing waters, 94.2% were of excellent quality, 1.9% of good quality, 0.4% of sufficient quality while it was not possible to assess the remaining 32 bathing waters[55].

Croatia's bathing water quality has been above average over the past years.

Figure 8: Bathing water quality 2012 – 2015[56]



**The category 'good' was introduced in the 2015 bathing water report*

The Commission recently assessed the transposition of the Urban Waste Water Treatment (UWWT) Directive in Croatia. Croatia made significant progress in reaching conformity; still some legislatives amendments will be necessary to fully align the national legislation with the Directive. The Accession Treaty provides for gradual compliance with the requirements of the Directive for collecting systems and treatment. The transitional measures are still active[57] for all its agglomerations, and have to be progressively achieved by the end of 2018, 2020 and 2023. Even if it is not compulsory, Croatia has started to report urban waste water information. On the basis of this first reporting, it is already clear that Croatia will need to step up its efforts if it is to meet the Accession treaty deadlines. Croatia belongs to a pilot project which aims to improve dissemination of data[58].

The estimated investment needs (reported by Croatia under Article 17 of the UWWTD Directive) to reach full compliance with the Directive are of EUR 2880 million[59].

Additional efforts have to be put in place to ensure proper management of waste waters in agglomerations that produce a load of less than 2000 population equivalent if health risks have been identified due to waste water pollution (bathing water, shellfish areas, drinking water).

[50] Good ecological status is defined in the Water Framework Directive, referring to the quality of the biological community, the hydrological characteristics and the chemical characteristics.

[51] Good chemical status is defined in the Water Framework Directive referring to compliance with all the quality standards established for chemical substances at European level.

[52] For groundwater, a precautionary approach has been taken that comprises a prohibition on direct discharges to groundwater, and (to cover indirect discharges) a requirement to monitor groundwater bodies.

[53] Diffuse pollution comes from widespread activities with no one discrete source, e.g. acid rain, pesticides, urban run-off, etc.

[54] Commission's Synthesis Report on the Quality of Drinking Water in the Union examining Member States' reports for the 2011-2013 period, foreseen under Article 13(5) of Directive 98/83/EC; COM(2016)666

[55] European Environment Agency, 2016. European bathing water quality in 2015, p. 26

[56] European Environment Agency, State of bathing water, 2016

[57] European Commission, Eighth Report on the Implementation Status and the Programmes for Implementation of the Urban Waste Water Directive (COM (2016)105 final) and Commission Staff Working Document accompanying the report (SWD(2016)45 final).

[58] See: http://uwwtd.oieau.fr/croatia/

[59] European Commission, Eighth Report on the Implementation Status and the Programmes for Implementation of the Urban Waste Water Directive (COM (2016)105 final) and Commission Staff Working Document accompanying the report (SWD(2016)45 final).

Croatia is hit regularly by flooding incidents with serious economic damage costs. Since 2010 it has reported to the EU Solidarity Fund (EUSF) EUR 298 million of damage due to the floods. Total aid granted to Croatia from the EUSF in this period was EUR 22.79 million.

Suggested action

- Croatia could do a more detailed assessment of pressures to improve monitoring to know the status of water bodies and design effective Programmes of Measures that address all the main pressures identified.
- Prompt implementation of projects necessary for the fulfilment of the requirements of the Accession Treaty with respect to Urban Waste Water Treatment Directive and Drinking Water Directive.

Enhancing the sustainability of cities

The EU Policy on the urban environment encourages cities to implement policies for sustainable urban planning and design, including innovative approaches for urban public transport and mobility, sustainable buildings, energy efficiency and urban biodiversity conservation.

SDG11 aims at making cities and human settlements inclusive, safe, resilient and sustainable.

Europe is a Union of cities and towns; around 75% of the EU population are living in urban areas[60]. The urban environment poses particular challenges for the environment and human health, whilst also providing opportunities and efficiency gains in the use of resources.

The Member States, European institutions, cities and stakeholders have prepared a new Urban Agenda for the EU (incorporating the Smart Cities initiative) to tackle these issues in a comprehensive way, including their connections with social and economic challenges. At the heart of this Urban Agenda will be the development of twelve partnerships on the identified urban challenges, including air quality and housing[61]. The European Commission will launch a new EU benchmark system in 2017[62].

The EU stimulates green cities through awards and funding, such as the EU Green Capital Award aimed at cities with more than 100,000 inhabitants and the EU Green Leaf initiative aimed at cities and towns, with between 20,000 and 100,000 inhabitants.

Improved urban environment through renovation and reuse of already used physical and natural resources instead of additional (physical) resource consumption is one of the strategic objectives in relation to the main funding priority and main expected results under the ESI Funds. In order to contribute to the integrated and sustainable urban development, activities under the Thematic objective 6: Protecting the environment and promoting sustainable use of resources will cover the enhancement of the urban environment, primarily with the goal to secure adequate monitoring and improvement of the air quality and usage of already existing physical resources through regeneration and re usage of brown fields.

Cities in continental part of Croatia register increased values of PM and noise exposure, and Action Plans for improvement of Air Quality have been put in place recently. Urban transport is responsible for about 25% of CO2 emissions from transport, and 69% of road accidents occur in cities. To improve the situation it is necessary to increase the efficiency and physical, operational and organisational integration of all the modes[63].

International agreements

The EU Treaties require that the Union policy on the environment promotes measures at the international level to deal with regional or worldwide environmental problems.

Most environmental problems have a transboundary nature and often a global scope and they can only be addressed effectively through international co-operation. International environmental agreements concluded by the Union are binding upon the institutions of the Union and on its Member States. This requires the EU and the Member States to sign, ratify and effectively implement all relevant multilateral environmental agreements (MEAs) in a timely manner. This will also be an important contribution towards the achievement of the SDGs, which Member States committed to in 2015 and include many commitments contained already in legally binding agreements.

The fact that some Member States did not sign and/or ratify a number of MEAs compromises environmental implementation, including within the Union, as well as the Union's credibility in related negotiations and international meetings where supporting the participation of third countries to such agreements is an established EU policy objective. In agreements where voting takes place it has a direct impact on the number of votes to be cast by the EU.

Croatia has signed and ratified almost all relevant MEAs. It has signed but not yet ratified the Offshore Protocol of the Barcelona Convention[63].

[60] European Environment Agency, Urban environment

[61] http://urbanagendaforthe.eu/

[62] The Commission is developing an Urban Benchmarking and Monitoring ('UBaM') tool to be launched in 2017. Best practices emerge and these will be better disseminated via the app featuring the UBaM tool, and increasingly via e.g. EUROCITIES, ICLEI, CEMR, Committee of the Regions, Covenant of Mayors and others.

[63] Partnership Agreement

Part II: Enabling Framework: Implementation Tools

4. Market based instruments and investment

Green taxation and environmentally harmful subsidies

The Circular Economy Action Plan encourages the use of financial incentives and economic instruments, such as taxation to ensure that product prices better reflect environmental costs. The phasing out of environmentally harmful subsidies is monitored in the context of the European Semester and in national reform programmes submitted by Member States.

Taxing pollution and resource use can generate increased revenue and bring important social and environmental benefits.

Croatia revenues from environmentally related taxes reached 3.86% of GDP in 2014 against an EU average of 2.46%. Energy taxes amount to 2.33% of GDP, well above the EU average of 1.88%[64]. As shown in Figure 9, in 2014 environmental tax revenues accounted for 10.51% (up from 9.58%) of total revenues from taxes and social-security contributions (EU 28 average: 6.55%). This ranks Croatia second after Slovenia, significantly superseding the EU average.

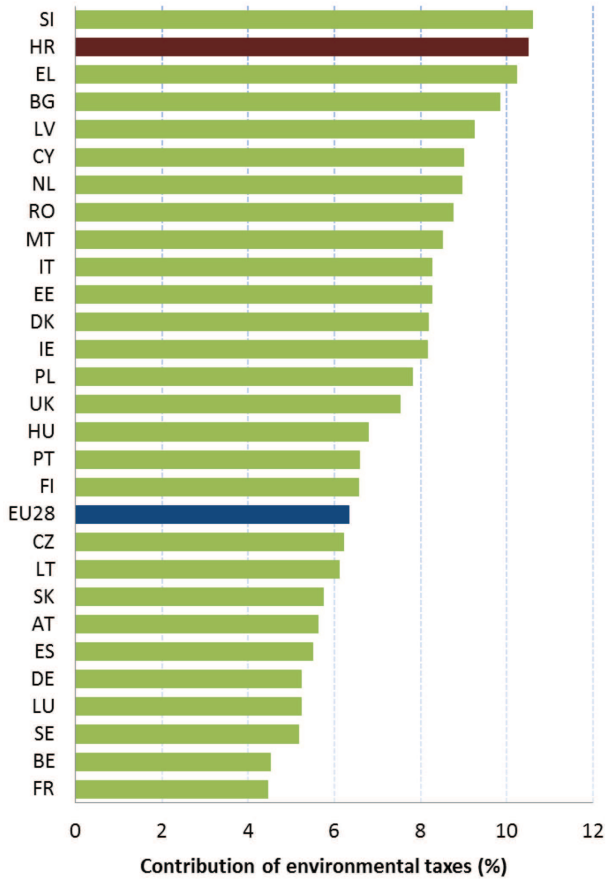
A 2016 study suggests that there is considerable potential for shifting taxes from labour to environmental taxes[65]. Under a good practice scenario[66], it could add as much as HRK 3.55 billion in 2018 (EUR 0.47 billion) to the budget, rising to HRK 6.61 billion in 2030 (EUR 0.87 billion) (both in real 2015 terms). This is equivalent to an additional 1.04% and 1.67% of GDP in 2018 and 2030, respectively. The largest potential source of revenue could come from the increase in vehicle taxes. This accounts for HRK 2.96 billion in 2030 (EUR 0.39 billion) (real 2015 terms), equivalent to 0.75% of GDP. The next largest contribution to revenue might come from the amendments to the taxes on transport fuels. This accounts for HRK 1.2 billion in 2030 (EUR 0.16 billion) (real 2015 terms), equivalent to 0.3% of GDP.

[64] Eurostat, Environmental tax revenues, accessed June 2016

[65] Eunomia Research and Consulting, IEEP, Aarhus University, ENT, 2016. Study on Assessing the Environmental Fiscal Reform Potential for the EU28. N.B. National governments are responsible for setting tax rates within the EU Single Market rules and this report is not suggesting concrete changes as to the level of environmental taxation. It merely presents the findings of recent studies on the potential benefits various environmental taxes could bring. It is then for the national authorities to assess these and their concrete impacts in the national context. A first step in this respect, already done by a number of Member States, is to set up expert groups to assess these and make specific proposals.

[66] The good practice scenario means benchmarking to a successful taxation practice in another Member State.

Figure 9: Environmental tax revenues as a share of total revenues from taxes and social contributions (excluding imputed social contributions) in 2014[67]



Green Public Procurement

The EU green public procurement policies encourage Member States to take further steps to reach the target of applying green procurement criteria to at least 50% of public tenders.

Green Public Procurement (GPP) is a process whereby public authorities seek to procure goods, services and works with a reduced environmental impact throughout their life-cycle when compared to goods, services and works with the same primary function that would otherwise be procured.

The purchasing power of public procurement in the EU

[67] Eurostat, Environmental tax revenues, accessed October 2016

equals to approximately 14% of GDP[68]. A substantial part of this money is spent on sectors with high environmental impact such as construction or transport, so GPP can help to significantly lower the impact of public spending and foster sustainable innovative businesses. The Commission has proposed EU GPP criteria[69].

The first National action plan for green public procurement for the period from 2015 – 2017 was adopted by the Croatian government in August 2015.

The EU GPP criteria are recommended for the following product groups: copying and graphic paper, transport (motor vehicles), electricity, cleaning products and services, telecommunication services and mobile phones, office and IT equipment[70].

Investments: the contribution of EU funds

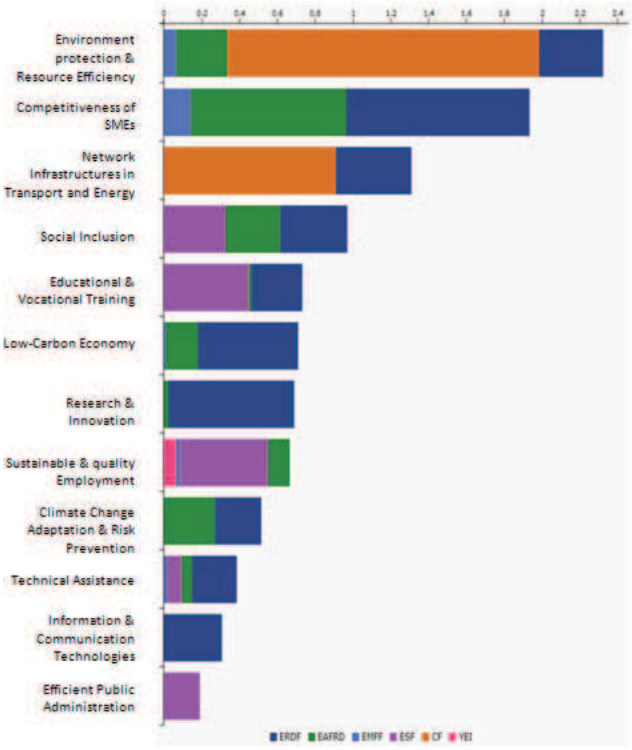
European Structural and Investment Funds Regulations provide that Member States promote environment and climate objectives in their funding strategies and programmes for economic, social and territorial cohesion, rural development and maritime policy, and reinforce the capacity of implementing bodies to deliver cost-effective and sustainable investments in these areas.

Making good use of the European Structural and Investment Funds (ESIF)[71] is essential to achieve the environmental goals and integrate these into other policy areas. Other instruments such as the Horizon 2020, the LIFE programme and the EFSI[72] may also support implementation and spread of best practice.

The European Commission has adopted a Partnership Agreement with Croatia in October 2014. It stablishes a national strategy for the use of ESIF and mechanisms to ensure compliance with the European Union Strategy for Smart, Sustainable, and Inclusive Growth (Europe 2020 strategy).

The total amount of the indicative allocation for all of the ESIF is EUR 10.7 billion (see Figure 10) for the 2014-2020 period. By the end 2015, Croatia spent EUR 120 million (more than 42%) out of EUR 281 million allocation from Operational Programme Environment (OPE), financed under 2007-2013 Cohesion Fund (without pre-financing). Having in mind that Croatia has acceded to the EU in the second half 2013 (last six months of 2007-2013 programming period), pre-accession funds for environment were almost doubled with CF contribution, so Croatia has an extra one year (compared to EU 27 MS) for utilisation of available funds (end 2016). Current estimation[73] of Croatian authorities envisages almost 100% utilisation of available funds by the end of 2016. The actual figures for use will be known later (HR to report by 03/2018), but it seems that all results planned under OPE 2007-2013 will be achieved (some delayed projects will be finished and their results reported under 2014-2020 OP Cohesion and competitiveness for Croatia).

Figure 10: European Structural and Investment Funds 2014-2020: Budget Croatia by theme, EUR billion[74]



The largest amount of ESI Funds investment is focused on the thematic objective "Preserving and protecting the environment and promoting resource efficiency", accounting for over 20% of all the investments under ESI Funds. The biggest amount is allocated under the Cohesion Fund, EUR 1.65 billion, followed by the European Regional Development Fund, EUR 338 million. Under the European Agricultural Fund for Rural Development EUR 270 million are allocated for

[68] European Commission, 2015. Public procurement

[69] In the Communication "Public procurement for a better environment" (COM /2008/400) the Commission recommended the creation of a process for setting common GPP criteria. The basic concept of GPP relies on having clear, verifiable, justifiable and ambitious environmental criteria for products and services, based on a life-cycle approach and scientific evidence base.

[70] European Commission, 2015. Documentation on National GPP Action Plans

71 ESIF comprises five funds – the European Regional Development Funds (ERDF), the Cohesion Fund (CF), the European Social Fund (ESF), the European Agricultural Fund for Rural Development (EAFRD), and the European Maritime and Fisheries Fund (EMFF). The ERDF, the CF and the ESF together form the Cohesion Policy funds.

72 European Investment Bank, 2016 European Fund for Strategic Investments

[73] Monitoring Committee Meeting for OP Environment 2007-2013, held in Zagreb on 23 November 2016

[74] European Commission, European Structural and Investment Funds Data By Country

environmental measures and EUR 66 million under the European Maritime and Fisheries Fund.

These allocations will mostly be used for investments in the waste management, water supply and waste water collection and treatment infrastructure, nature and biodiversity protection and development of the tourism potential of natural areas. In the waste sector, investments are envisaged for the construction of waste management centres (WMCs), remediation of the locations highly polluted by waste ("hot spot"), remediation of the municipal waste landfills, and projects in the field of waste prevention and recycling. In the water sector several major projects are planned related to development/ construction/ reconstruction of water supply and/or wastewater systems. Additional attention will be paid to the protection and enhancement of biodiversity, nature protection and green infrastructure, and for the protection, restoration and sustainable use of Natura 2000 sites.

The expected impact of the investments in environmental sectors is the achievement of targets such as:

- 10 new waste management centres established and fully operational (2023);
- Share of municipal waste deposited onto or into land reduced from 83% (2012) to 35% (2023);
- Additional waste recycling capacity of 30.000 tonnes per year;
- Additional 1 million inhabitants served by improved water supply and improved wastewater treatment (2023);
- 40% of the Natura 2000 management framework in place Natura 2000 management framework in place as a basis for conservation actions according to the obligations in the acquis (2023);
- 358 hectares surface area of habitats supported to attain a better conservation status (2023).

The criteria of the ex ante conditionalities[75] for all three environmental areas[76] - Water, Waste, EIA and SEA - are partially or not fulfilled. The appropriate Action Plans have been prepared by the competent authorities and have to be implemented so that access to EU funding is ensured. While a progress has been made in certain areas, the Action Plan on waste is seriously lagging behind.

The National Rural Development Program (RDP) of Croatia, its EARDF part, amounts to 2,026,222,500.00 EUR (after the 1st modification).

The budget for agri-environmental-climate measure represents 5.8% of the total EAFRD budget. The measure on natural constraints takes up 13.5% of the total EAFRD (and does not need to present its link to biodiversity conservation). Croatia needs to tackle specific need of demining its area, for which (demining of agricultural land) also the RDP resources are used.

Small agri-environment climate measure offers support for targeted schemes. According to the Ministry of Agriculture, the uptake was very low in 2015 and they are going to step in proactively contacting potential beneficiaries with particular natural assets to take a contract-the approach is appreciated.

Ca 1% of the total EAFRD budget is dedicated to non-productive investments, among them restoration of habitats and provision of Tornjak dogs and mechanical tools in areas of presence of large carnivores-as well appreciated. Croatia for the action on modernisation of irrigation proposed min potential water savings of 25%.

With regard to the integration of environmental concerns into the Common Agricultural Policy (CAP), the two key areas for Croatia (as for all Member States) are, first, using Rural Development funds to pay for environmental land management and other environmental measures, while avoiding financing measures which could damage the environment; and secondly, ensuring an effective implementation of the first pillar of the CAP with regard to cross compliance and 1st pillar 'greening'. 30% of direct payment envelope (out of total EUR 1.22 billion for 2015-2020, source: Commission delegated regulation (EU) 2015/851)) is allocated to greening practices beneficial for the environment. An environmentally ambitious implementation of 1st pillar greening would clearly help to improve the environmental situation in areas not covered by rural development, including intensive area, and if appropriate Croatia could review its implementation of this.

For the year 2015 Croatia made it possible to use 13 elements laid down by the regulation as ecological focus area (EFA) (out of possible 19 elements). Croatia activated short rotation coppice as EFA with ban on use of fertilisers and pesticides. Catch crops and unambitious nitrogen fixing crops (also soybean- with no biodiversity benefits) are possible choices. 80% of Natura 2000 grasslands were designated as environmentally sensitive, 0 ha designated outside Natura 2000.

[75] The Fifth Cohesion Report identified the main purpose of ex ante conditionalities (ExACs) as helping "countries and regions to tackle the problems that past experience has shown to be particularly relevant to policy implementation. These principles could be linked to, for example, transposition of specific EU legislation, the financing of strategic EU projects, or administrative, evaluation and institutional capacity."

[76] The existence of arrangements for the effective application of Union environmental legislation related to EIA and SEA, Water and Waste.

5. Effective governance and knowledge

SDG 16 aims at providing access to justice and building effective, accountable and inclusive institutions at all levels. SDG 17 aims at better implementation, improving policy coordination and policy coherence, stimulating science, technology and innovation, establishing partnerships and developing measurements of progress.

Effective governance of EU environmental legislation and policies requires having an appropriate institutional framework, policy coherence and coordination, applying legal and non-legal instruments, engaging with non-governmental stakeholders, and having adequate levels of knowledge and skills[77]. Successful implementation depends, to a large extent, on central, regional and local government fulfilling key legislative and administrative tasks, notably adoption of sound implementing legislation, co-ordinated action to meet environmental objectives and correct decision-making on matters such as industrial permits. Beyond fulfilment of these tasks, government must intervene to ensure day-to-day compliance by economic operators, utilities and individuals ("compliance assurance"). Civil society also has a role to play, including through legal action. To underpin the roles of all actors, it is crucial to collect and share knowledge and evidence on the state of the environment and on environmental pressures, drivers and impacts.

Equally, effective governance of EU environmental legislation and policies benefits from a dialogue within Member States and between Member States and the Commission on whether the current EU environmental legislation is fit for purpose. Legislation can only be properly implemented when it takes into account experiences at Member State level with putting EU commitments into effect. The Make it Work initiative, a Member State driven project, established in 2014, organizes a discussion on how the clarity, coherence and structure of EU environmental legislation can be improved without lowering existing protection standards.

Effective governance within central, regional and local government

Those involved in implementing environment legislation at Union, national, regional and local levels need to be equipped with the knowledge, tools and capacity to improve the delivery of benefits from that legislation, and the governance of the enforcement process.

Capacity to implement rules

It is crucial that central, regional and local administrations have the necessary capacities and skills and training to carry out their own tasks and co-operate and co-ordinate effectively with each other, within a system of multi-level governance.

The transposition of the revised EIA Directive[78] will be an opportunity to streamline the regulatory framework on environmental assessments. The Commission encourages the streamlining of the environmental assessments to avoid overlaps in environmental assessments and accelerate decision-making, without compromising the quality of the environmental assessment procedure. The Commission has issued a guidance document in 2016 regarding the setting up of coordinated and/or joint procedures that are simultaneously subject to assessments under the EIA Directive, Habitats Directive, Water Framework Directive, and the Industrial Emissions Directive[79].

As part of the ex-ante conditionalities for the programming period 2014 - 2020, Croatia has assessed the administrative capacity in the Ministry of Environmental and Nature Protection (MENP) as adequate. However, the accession to the EU has brought new challenges which require more capacity. Since Croatia's accession, the number of civil service employees has been increased but not sufficiently to deal with the increased workload related to the implementation of EU projects and the alignment with the EU environmental legislation.

Under the Operational Programme Competitiveness and Cohesion for the period 2014-2020 Croatia can use funds for strengthening the administrative and technical capacities of institutions responsible for implementation and enforcement of environmental related policies.

There is a specialized Sector of Environmental Assessment and Industrial Pollution in the MENP. It consists of two specialized services, one of which is in charge of the environmental assessments. The Service of

[77] The Commission has work ongoing to improve the country-specific knowledge about quality and functioning of the administrative systems of Member States.

[78] The transposition of Directive 2014/52/EU is due in May 2017

[79] European Commission, 2016

Environmental Assessment has separate departments for the strategic environmental assessment and the environmental impact assessment. They have an adequate administrative capacity to give practical and legal advice on applicability of the EIA/SEA Directives which are being continuously strengthened. Strategic environmental assessment is carried by sectoral competent authorities on central, regional and local level. Environmental impact assessment is carried out by MENP and by regional environmental authorities. Having in mind a limited experience with carrying out the strategic environmental assessments, several trainings have been carried out for the employees of the MENP and other competent authorities on central, regional and local level. At MENP website several guidelines documents are available to the authorities applying the EIA/SEA.

Some of the institutions responsible for public procurement are facing insufficient administrative capacity and a need for additional training. This often leads to faulty tender documentation, resulting in lengthy appeals and even cancellations of tenders. This is a bottleneck for the use of ESI Funds, in particular in heavy-infrastructure sectors such as waste and water management.

The capacity of the administrative bodies that are implementing nature directives is very limited on both national and local levels and not sufficient in view of the required work to fulfil the legal obligations, in particular with regard to the capacities to ensure smooth and quality appropriate assessments of plans and projects' implications for the site.

Competences are divided among several Ministries and among national, regional and local level.

Under the Accession Treaty, Croatia benefits from a number of environmental transitional measures, most of them still active. Current progress with meeting the transitional targets raises doubts as to whether Croatia will be ready to comply fully with the requirements of the environmental legislation, after the expiry of the transitional measures. This is especially the case for:

- reaching the final goal that maximum 35% of biodegradable municipal waste is landfilled, by 31 December 2020;
- gradual reduction of waste landfilled in non-compliant (substandard) landfills, all landfills to comply by 31 December 2018.
- Urban Waste Water Treatment Directive 91/271, gradual compliance with the requirements for collecting systems and treatment, final compliance by 1 January 2024.
- Industrial Emissions Directive 2010/75 (replacing Directive 1999/13 on VOC limitations, Large Combustion Plant Directive 2001/80, and IPPC Directive 2008/1): transition periods for certain installations to comply with limitation of VOC emissions and usage of BAT-s by 1 January 2016; 1 January 2018 as a final date for certain large combustion plants regarding emission limits of sulphur dioxide, nitrogen oxides and dust, as well as for certain installations regarding permitting in line with IPPC Directive.

Croatia's transposition record is good. A small number of late transposition cases are solved at the early stage of the infringement procedure. The pressure from complaints and petitions is relatively low.

Conformity checking is the Commission's priority. In that respect, more investigations and potential non-conformity infringements can be expected.

Croatia engages in constructive cooperation with the Commission with the goal of rectifying the non-conformities of national legislation and shows readiness to amend the legislation. However, Croatia often does not respect its own deadlines. The delays might be partly due to scarce administrative capacities of the ministries and burdensome and lengthy national legislative procedure. The recent governmental changes created additional delays in reaching conformity.

Suggested action

- Croatia could benefit from strengthening the administrative capacity in the Ministry of Environmental and Nature Protection, as this would affect positively the use of EU Funds and speed up the alignment with the EU environmental policies and legislation.

Coordination and integration

Impact assessments are important tools to ensure environmental integration in all government policies[80].

The Commission assessed the transposition of the Environmental Impact Assessment (EIA) Directive and the Strategic Environmental Assessment (SEA) Directive in Croatia. While Croatia has aligned the national legislation with the SEA Directive, additional efforts are necessary to reach the full conformity with the EIA Directive. It is of a great importance to reach the full conformity with the EIA Directive promptly. EIA Directive represents a fundamental environmental piece of legislation, applicable to a wide range of projects and its proper transposition and implementation is an important contributor to sustainable development. The revised EIA Directive 2014/52/EU, which Croatia plans to transpose in the first quarter 2017, could be used as an opportunity to further streamline different environmental

[80] Article 11 of the TFEU provides that "Environmental protection requirements must be integrated into the definition and implementation of the Union's policies and activities, in particular with a view to promoting sustainable development."

assessments and consequently to enhance the efficiency of the environmental pillar of project development.

Compliance assurance

EU law generally and specific provisions on inspections, other checks, penalties and environmental liability help lay the basis for the systems Member States need to have in place to secure compliance with EU environmental rules.

Public authorities help ensure accountability of duty-holders by monitoring and promoting compliance and by taking credible follow-up action (i.e. enforcement) when breaches occur or liabilities arise. Compliance monitoring can be done both on the initiative of authorities themselves and in response to citizen complaints. It can involve using various kinds of checks, including inspections for permitted activities, surveillance for possible illegal activities, investigations for crimes and audits for systemic weaknesses. Similarly, there is a range of means to promote compliance, including awareness-raising campaigns and use of guidance documents and online information tools. Follow-up to breaches and liabilities can include administrative action (e.g. withdrawal of a permit), use of criminal law[81] and action under liability law (e.g. required remediation after damage from an accident using liability rules) and contractual law (e.g. measures to require compliance with nature conservation contracts). Taken together, all of these interventions represent "compliance assurance" as shown in Figure 11.

Figure 11: Environmental compliance assurance

Best practice has moved towards a risk-based approach at strategic and operational levels in which the best mix of compliance monitoring, promotion and enforcement is directed at the most serious problems. Best practice also recognises the need for coordination and cooperation between different authorities to ensure consistency, avoid duplication of work and reduce administrative burden. Active participation in established pan-European networks of inspectors, police, prosecutors and judges, such as *IMPEL*[82], *EUFJE*[83], *ENPE*[84] *and EnviCrimeNet*[85], is a valuable tool for sharing experience and good practices.

Currently, there exist a number of sectoral obligations on inspections and the EU directive on environmental liability (ELD)[86] provides a means of ensuring that the "polluter-pays principle" is applied when there are accidents and incidents that harm the environment. There is also publically available information giving insights into existing strengths and weaknesses in each Member State.

For each Member State, the following were therefore reviewed: use of risk-based compliance assurance; coordination and co-operation between authorities and participation in pan-European networks; and key aspects of implementation of the ELD based on the Commission's recently published implementation report and REFIT evaluation[87].

Information is lacking for the period since Croatia's accession to the EU in 2013, but in the period prior to accession Croatia had already put in place some risk assessment tools to prioritise and target inspections of industrial installations. However, these were incomplete[88] and a need for a more strategic approach as well as for a more systematic performance evaluation was identified[89].

Up-to-date information is lacking in relation to the following:

- data-collection arrangements to track the use and effectiveness of different compliance assurance interventions;
- the extent to which risk-based methods are used to direct compliance assurance at the strategic level and in relation to specific problem-areas highlighted elsewhere in this Country Report, i.e. air quality breaches and the pressures on water quality from diffuse water pollution;
- how the Croatian authorities ensure a targeted and proportionate response to different types of non-compliant behaviour, given indications that there is a low probability of being prosecuted and sentenced for environmental offences[90].

[81] European Union, Environmental Crime Directive 2008/99/EC

[82] European Union Network for the Implementation and Enforcement of Environmental Law

[83] European Union Forum of judges for the environment

[84] The European Network of Prosecutors for the Environment

[85] EnviCrimeNet

[86] European Union, Environmental Liability Directive 2004/35/CE

[87] COM(2016)204 final and COM(2016)121 final of 14.4.2016. This highlighted the need for better evidence on how the directive is used in practice; for tools to support its implementation, such as guidance, training and ELD registers; and for financial security to be available in case events or incidents generate remediation costs.

[88] IMPEL IRI Report Croatia, 2011, p. 33-34.

[89] IMPEL IRI Report Croatia, 2011, p. 42-43.

[90] IMPEL IRI Report Croatia, 2011, p. 42.

Pre-accession, a detailed agreement on cooperation between inspection services in the field of environment' was in place to guide coordinated joint inspections and resolve competence questions, with a separate annual plan and an annual report on coordinated inspections published online[91]. Croatia is active within IMPEL and hosted in 2011 an IMPEL peer review.

Given its 2013 accession, Croatia was not required to submit an implementation report on the Environmental Liability Directive. It is understood that Croatia has not yet applied the Directive to a case of environmental damage and that an effective system of financial security has still to be established.

Suggested action

- Improve transparency on organisation and functioning of compliance assurance system and on how significant risks are addressed, as outlined above.
- Encourage greater participation of competent authorities in the activities of ENPE, EUFJE and EnviCrimeNet.
- While more time is needed for Croatia to implement the Environmental Liability Directive due to its later accession to the EU, Croatia should step up efforts in the implementation of the Environmental Liability Directive (ELD) with proactive initiatives, in particular by setting up a national register of ELD incidents and drafting national guidance. It should moreover take further steps to ensure an effective system of financial security for environmental liabilities (so that operators not only have insurance cover available to them but actually take it up).

Public participation and access to justice

The Aarhus Convention, related EU legislation on public participation and environmental impact assessment, and the case-law of the Court of Justice require that citizens and their associations should be able to participate in decision-making on projects and plans and should enjoy effective environmental access to justice.

Citizens can more effectively protect the environment if they can rely on the three "pillars" of the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters ("the Aarhus Convention"). Public participation in the administrative decision making process is an important element to ensure that the authority takes its decision on the best possible basis. The Commission intends to examine compliance with mandatory public participation requirements more systematically at a later stage.

Access to justice in environmental matters is a set of guarantees that allows citizens and their associations to challenge acts or omissions of the public administration before a court. It is a tool for decentralised implementation of EU environmental law.

For each Member State, two crucial elements for effective access to justice have been systematically reviewed: the legal standing for the public, including NGOs and the extent to which prohibitive costs represent a barrier.

The general system of access to courts in Croatia for the purpose of judicial review is interest-based and rights-based which generally offers a wider access. Although the Environmental Protection Act grants a wide access to justice to environmental NGOs, they seem to have no access to justice at the later stages of a project authorisation (e.g. at the stage of issuance of a location permit and a construction permit).The costs of environmental proceedings are also not considered as prohibitively high[92].

Access to information, knowledge and evidence

The Aarhus Convention and related EU legislation on access to information and the sharing of spatial data require that the public has access to clear information on the environment, including on how Union environmental law is being implemented.

It is of crucial importance to public authorities, the public and business that environmental information is shared in an efficient and effective way. This covers reporting by businesses and public authorities and active dissemination to the public, increasingly through electronic means.

The Aarhus Convention[93], the Access to Environmental Information Directive[94] and the INSPIRE Directive[95] together create a legal foundation for the sharing of environmental information between public authorities and with the public. They also represent the green part of the ongoing EU e-Government Action Plan[96]. The first two instruments create obligations to provide information to the public, both on request and actively. The INSPIRE Directive is a pioneering instrument for electronic data-sharing between public authorities who can vary in their data-sharing policies, e.g. on whether access to data is for free. The INSPIRE Directive sets up a

[91] IMPEL IRI Report Croatia, 2011, p. 27.

[92] European Commission, 2012/2013 access to justice in environmental matters

[93] UNECE, 1998. Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters

[94] European Union, Directive 2003/4/EC on public access to environmental information

[95] European Union, INSPIRE Directive 2007/2/EC

[96] European Union, EU eGovernment Action Plan 2016-2020 - Accelerating the digital transformation of government COM(2016) 179 final

geoportal which indicates the level of shared spatial data in each Member State – i.e. data related to specific locations, such as air quality monitoring data. Amongst other benefits it facilitates the public authorities' reporting obligations.

For each Member State, the accessibility of environmental data (based on what the INSPIRE Directive envisages) as well as data-sharing policies ('open data') have been systematically reviewed[97].

Croatia's performance on the implementation of the INSPIRE Directive as enabling framework to actively disseminate environmental information to the public leaves room for further improvement. Croatia has indicated in the 3-yearly INSPIRE implementation report[98] that the necessary data-sharing policies allowing access and use of spatial data by national administrations, other Member States' administrations and EU institutions without procedural obstacles are still under development. Initiatives for setting up data sharing arrangements have been initiated trying to overcome identified barriers such as: public use limitations/restrictions, lack of human capacity, lack of licensing policy, pricing and funding policies.

Assessments of monitoring reports[99] issued by Croatia and the spatial information that Croatia has published on the INSPIRE geoportal[100] indicate that not all spatial information needed for the evaluation and implementation of EU environmental law has been made available or is accessible. The larger part of this missing spatial information consists of the environmental data required to be made available under the existing reporting and monitoring regulations of EU environmental law.

Suggested action

- Critically review the effectiveness of its data policies and amend them, taking 'best practices' into consideration.
- Identify and document all spatial data sets required for the implementation of environmental law, and make the data and documentation at least accessible 'as is' to other public authorities and the public through the digital services foreseen in the INSPIRE Directive.

[97] Upon request by the Commission, most Member States provided an INSPIRE Action Plan addressing implementation issues. These plans are currently being assessed by the Commission.
[98] European Commission, INSPIRE reports
[99] Inspire indicator trends
[100] Inspire Resources Summary Report