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SURVEY

National Legislative System on Surface Water Quality

based on the recommendations of the Project Partners representing

Austria, Slovakia, Hungary, Serbia, Romania, Bulgaria, Ukraine



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Abstract



This document focuses on the waste phenomenon in the Danube and its tributaries, provides a comprehensive overview of the relevant sector-specific legislation and describes the competent organisations in each country.

The aim of the study is to highlight possible inefficient regulatory practices, the organisational structures of the sectors concerned and, where possible, to make recommendations for improvement.

It also aims to contribute to a better understanding of the complexity of the pollution problem in the Danube region.

The authors of the document seek to find appropriate solutions to the challenges related to waste pollution in our rivers, including the recently widespread use of disposable protective equipment against COVID-19 and the resulting new waste flows.

The report has sought to contribute to solving the waste problem in the Danube region and its tributaries through a coordinated, coherent, integrated and consistent approach by presenting an up-to-date legislative framework and list of good practices.

Executive Summary



In order to better understand the water pollution problem, this Survey studies the relevant legal frameworks of the project partners as well as the international legislation of the Danube region. A comprehensive summary has been prepared by each partner, considering the objectives and results of the A.T3.1 activity: *“Research on the legislative background: To understand the reasons of the water pollution problem, we must inspect the details of the relevant legislative system we target to improve at the beginning of the project. A thorough picture will be set up on each participating country’s legislative background...”*.

The study describes the relevant environmental legislation and the organisational structure of the environmental protection bodies, along with the legal sanctions for nature-damaging activities. The survey also focuses on the organisational structure and functioning of water management organisations, their communication channels and their cooperation with other environmental institutions and authorities. Waste and water management regulations also play a key role in the analysis, with partners looking at industrial and municipal waste collection systems and regulations, and at the problem of illegal dumping. The research has considered existing international legislation on water and the marine environment, including regional conventions and European directives (see chapter on **International Legislation**).

The research will provide important data that will take a snapshot of the present moment, identify loopholes in legislation and promote best practice. The project partners' shared knowledge and approach will be considered at national and international (European and global) level. Based on the assessment carried out as a result of the survey, a **Top 10** recommendations have been identified to improve the legal environment and good practices for tackling plastic pollution in the Danube region.

The specific regulatory and organisational solutions of the partners and the different practices in each country provide an interesting insight into the complexity of environmental aspects of littering on the waterways. Highlighting some specificities and problematic cornerstones, the following elements deserve particular attention.

Austria

As a federal republic, **Austria** is comprised of nine independent federal state; executive competences are divided among the federal government and the federal states. The lack of federal regulation of nature conservation poses challenges for law enforcement, especially as nature does not recognise the borders of the federal provinces. Municipal water management and flood warning legislation in **Austria** is subject to state competence. The waste system applies principles such as Precautionary, Sustainability and Extended Producer Responsibility – including for the management of packaging waste. Realising the significance of the problem caused by packaging waste, the Packaging Coordination Agency can take over coordination obligations e.g., for financial compensation and informing end consumers, for cost-efficient organisation of packaging collection and management of the electronic database of commercial packaging waste. Hazardous waste falls exclusively under the jurisdiction of the **Austrian** Federal Government, as well as to issue uniform regulation and to take action if state government fails to use its powers. Landfill waste disposal depends on limit values (the total organic carbon value) of the waste, and in addition to this, landfill taxes were introduced making landfilling more expensive than incineration. In 2015, 71% of plastics wastes in Austria were incinerated, 28% recycled and 1% landfilled (UBA 2017).

Sustainability is regarded as a constitutional value to be considered by public authorities, although in practice, in court decisions, sustainability is not taken into account in an absolute way and thus does not take precedence over other laws, rights and interests.

Awareness-raising and cleaning campaigns are widely organised in Austria by municipalities, district waste associations, NGOs, schools, companies, other organisations – successfully applying the broken window effect. Bright coloured bins and appropriate information displayed are helping people to dispose waste correctly.

Slovakia

The aim of water management, mainly through centralised legislation, is to achieve good water status, with measures taken for "good ecological status" and "good ecological potential" (GEP) in water management plans. In **Slovakia** flood risk management plans should be implemented in coordination with river basin management and other spatial planning instruments, in particular land use plans, forest management plans, which together form an integrated land use instrument for the whole river basin district.

Slovakian waste legislation is quite complex. In principle, municipalities are responsible for the management of municipal waste. Waste collectors are obliged to conclude a contract with the competent producer responsibility organisation (PRO), and the responsibility of the producer of the separately collected waste stream is transferred to the PRO. The PROs are non-profit organisations and obliged to conclude contracts with all municipalities and cities in Slovakia so that municipalities do not have to conclude individual contracts with producers and importers.

Much of the water pollution in **Slovakia** is linked to activities in industry, agriculture, mining, electricity generation and chemical production. Another major problem is illegal dumping of waste, especially as there is insufficient data on this issue due to missing or very limited monitoring and control mechanisms. The state has neither the human nor the financial capacity to systematically monitor and analyse the data. Many companies dealing with waste management, waste treatment and recovery or waste collection are breaching the obligation to separate waste by waste type and ensuring that waste is protected against deterioration or theft. In the meantime, best practices are indicated with several projects implemented by different municipalities, a mobile app called TrashOut facilitates communication between citizens and municipalities to map illegal dumpsites successfully, and since 16.04.2021, 8,731 illegal dumpsites had been reported through this single application.

It has also been revealed that over-regulation of rivers by overtopping dams, constricting watercourses, etc., significantly reduces the self-cleaning capacity of water bodies.

Hungary

The Hungarian Fundamental Law (Constitution) contains several innovations that are significant from an environmental point of view, including the idea of sustainable development, responsibility to future generations and the protection of nature. However, effective solutions and rapid problem solving in the sector of environmental protection are often hampered by the rather convoluted structure of the Government, administrative bodies and their operational procedures. **Hungary** is one of the few EU countries without a separate Ministry of Environment. Complex problems, like waste in rivers, are dealt with by a fragmented organisational system. Moreover, nearly every year there has been a change regarding the national sectoral governance or organisational and territorial division, or changes in terms of tasks and responsibilities for environmental issues, that is affecting the efficiency of the operation.

Hungary's location exposes it to the problem of illegal waste being transported across rivers from neighbouring countries. Bilateral and multilateral agreements to prevent and mitigate transboundary pollution are difficult to enforce and do not always address the source of the problem - such as the lack of an adequate and effective waste management system to prevent waste from entering rivers from non-EU countries (UA). None of the transboundary cooperation agreements deal with the **plastic/communal waste** issue. It is **not viewed as water pollution as it is not influencing the chemical status of the water bodies**. The floating waste problem generates huge collection and elimination costs, funds which are not compensated by the country of origin. Compensation mechanisms were applied in some cases but failed in the long-term.

Current legislation on waste management and its implementation is weak, and therefore does not effectively deter illegal activities. The system itself is not holistic, stakeholders are not incentivised, and although restrictions and rules are included in the legal framework, implementation has not been particularly successful, key elements of success like prevention are still missing. It is important to highlight that

construction and demolition waste – which constitutes the highest amount of waste in the illegal waste stream – is still not regulated as a specific waste flow in Hungary. Furthermore, while speed is important in order to prevent further damage, misunderstandings and inaccuracies around the classification of waste and hazardous waste and in the application of the law make it difficult to maintain a fast and efficient procedure.

Serbia

The Act on Environmental Protection is setting an integrated system for environmental protection. While legislation in Serbia is largely harmonized with the regulations of the European Union in the field of water protection, the Water Management Plan for the Danube River Basin has not been adopted.

Waste management legislation in **Serbia** generally covers all aspects of the sector. However, not all parts of the national or EU legislation satisfactorily comply with the expected enforcement or monitoring standards, nor are sanctions for non-compliance set at a satisfactory level. Within the Extended Producer Responsibility (EPR) packaging producers are obligated to pay taxes to the National Fund. Through the national operators, collected funds are used for incentivizing purchase price of packaging waste in order to meet the set targets for a particular year. Serbia needs to improve the implementation of the polluter pays principle, for example by strengthening capacities at local level to collect environmental fees. Huge quantities of packaging waste are not collected and end up on landfills or other inadequate locations; these sites are in the vicinity of water bodies and cause the pollution of water. Utility companies collect around 80% of municipal solid waste and it is mostly disposed of in landfills without any pre-treatment. Landfilling represents the major type of waste treatment, and only around 5% of waste is recycled. Local Waste Management Plans are established implementing the management of municipal solid waste. Utility Companies are in charge of regular clean-up activities, while the responsibility for clean-up of water courses is not clearly defined and budgets are limited. Informal clean-up actions performed by local NGOs and other groups are sporadic; environmental awareness and awareness raising activities are generally at a low level. Local, national TV stations and other broadcasters are often not allowed to show such content. As a result, only social media remains as a possible communication channel with the public. The contribution of NGOs and citizen's initiatives should be advocacy, and influence on decision-makers before voting. However, such influence is almost non-existent or not sufficiently present.

The main problems in the environmental protection sector in Serbia are the lack of coordination between the water management and environmental protection sectors, the lack of specific strategies to improve investment in wastewater treatment facilities, absence of public participation in policy development, non-compliance of sectoral policies, scarcity of active protection measures, insufficient funds, inconsistent implementation of laws and inadequate control and monitoring. There is a lack of systematic governmental activities regarding awareness-raising on any environmental topic. Particularly worrying are the persistent efforts of the supreme executive and local authorities to prevent civil society organisations from actively defending the public interest.

Romania

Fundamental rights are set and ensured by the constitution of Environmental rights and are defined and guaranteed by the Constitution of **Romania**, by emergency government decrees, and by the legal and institutional frameworks dealing with national surface water quality, environmental protection, water and waste management, nature conservation and other environmental accountability. Waste management in **Romania** is based on the principles of waste hierarchy and the Polluter Pays Principle.

Illegal dumping of waste is a serious problem in Romania, despite the fact that several authorities (National Environmental Guard, Forest Guard, national and local police) have the power to sanction but rarely catch the perpetrators. Another serious problem is the illegal import of waste. Romania has not yet introduced a nationwide organised system for selective waste disposal and ecological storage, with few take-ups by domestic recycling companies, creating demand for legal imports under the guise of which illegal imports are

flourishing. The authorities associate these with the activities of organised crime, which sees illegal waste imports as a business opportunity.

In **Romania**, civic initiatives play a huge role in environmental protection and waste management by organising clean-up actions to collect illegally dumped waste in their municipalities. These actions are usually organised by youth organisations, but also by political parties. There is also scope for further voluntary work in flood protection as the relevant legislation allows for the involvement of volunteers in civil protection. Romania plans to introduce a cash-based return system for plastic bottles by 2022 to reduce plastic pollution. There are also plans to set up a special prosecution unit to deal specifically with illegal logging and waste management offences. Investigative journalism in Romania plays an important role in raising public awareness.

Bulgaria

The first module of this study introduces the basic environmental laws in Bulgaria, explains the national hierarchy defines sector-specific environmental legislation, regulations on water, waste, waste disposal and nature protection, bilateral and multilateral agreements and protocols for cooperation. Water management is carried out in accordance with EU and national legislation in the framework of the implementation of the Environmental Protection Act, the Water Act, the National Strategy for the Management and Development of the Water Sector, the River Basin Management Plans, the Flood Risk Management Plans, the Marine Strategy and the national programmes for the sustainable development and protection of water.

The second module addresses the relevant organisations, legislative and administrative bodies of the sector which regulate licensing and permissions, control and sanctions. Social engagement, awareness-raising campaigns and opportunities for institutions, civic initiatives, NGOs and volunteers are described. Guided by a long-term vision, Bulgaria is taking a forward-looking approach to the environment, with detailed biodiversity and climate targets to be achieved by 2030 and 2050. Environmental non-governmental organisations (NGOs) play an important role in better informing the public about environmental issues and raising questions about what environmental and climate policy should be about - now and in the future.

In the third module briefly presents best practices.

The fourth module is what is planned to be completed as a result, such as proposals for consideration in regard to plastic waste management, raising the awareness of the general public, halting the production of single-use plastic products, and encouraging behavioural change in favour of using natural materials. A responsibility for the environment is instilled in children from an early age. Early childhood education is a powerful tool for successful learning and development. Public education expects results in terms of awareness of the safety rules to be applied in the event of natural disasters, the need to care for animals and their right to life, the need for conditions for the growth and development of plants, and so on.

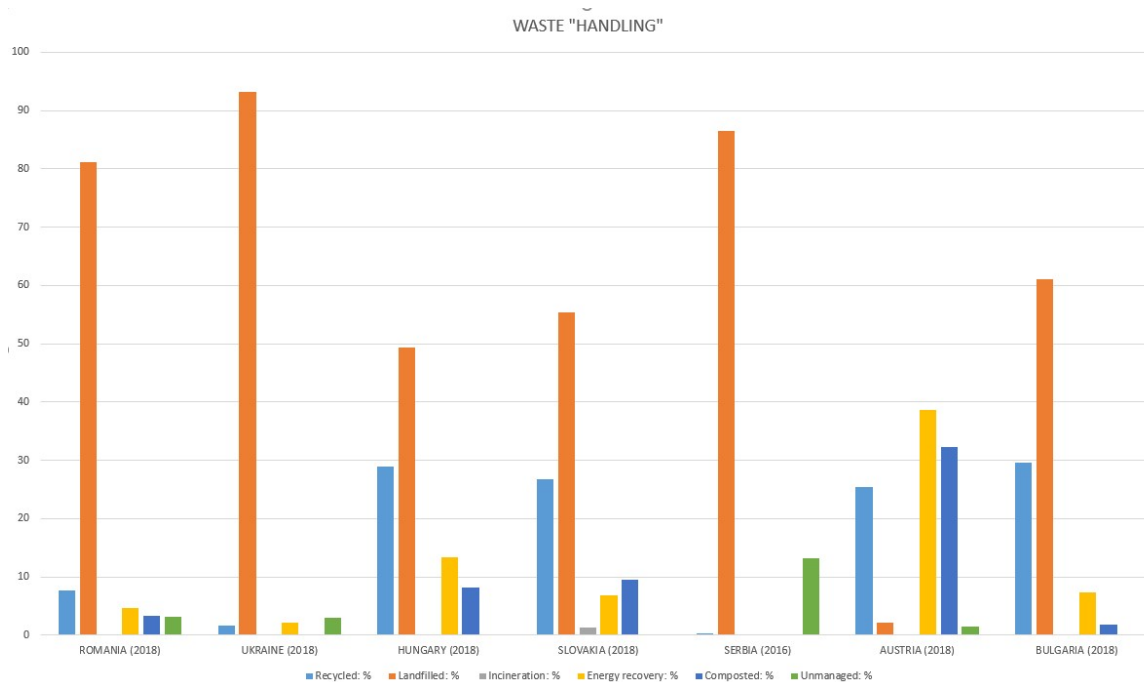
Ukraine

Environmental legislation has a complex structure in **Ukraine** involving regulation of different sectors and levels, and legislative acts that interact with each other and with other legislation. Compared to other areas of law, environmental legislation is relatively stable. Environmental legislation has different legal effects depending on which authority has approved or adopted it. In addition, the effects of legal acts may also vary depending on the environmental value or protection status of the protected object.

For Ukraine, the task of reducing anthropogenic pressure on the environment and achieving a level of environmental safety that would meet **EU standards** is an urgent issue. Successful implementation of such tasks requires a comprehensive solution in a single transboundary system of environmental safety, which is why it is necessary to focus on developing scientific principles of environmental management based on ecosystem approach, as well as the restoration of degraded watersheds. One of Ukraine's environmental policy priorities under the Association Agreement with the European Union is to harmonise water legislation with EU legislation, in particular the Water Framework Directive and the Floods Directive.

The automated information and measurement system for flood forecasting and water management (AIVS-"Tisa") was launched in the Tisza River basin in 2000 as a result of a joint Ukrainian-Hungarian project. The system has enabled a significant increase in the time available to make water management decisions during floods and the development of integrated water management.

As regards waste management, it is worth noting that, in most cases, local communities act autonomously in implementing waste management systems, which are mainly limited to the simple removal and disposal of waste, without taking into account the impact on the environment, public health, economic development or other aspects of waste management. Weak institutional capacity and administrative competence at local level is one of the main obstacles to achieving the priorities set for the sector at national level (e.g., recycling and introducing stricter environmental standards).



1. Figure - The types of waste handling in the Tid(y)Up project partner countries

Top 10



On the basis of the evaluation, the authors made recommendations to improve the legal environment for combating plastic pollution in the Danube Region. These recommendations are presented according to the waste hierarchy.

The main objectives of the legislative analysis and the recommendations below are to implement legislation to prevent illegal dumping more effectively, and to implement measures to facilitate the collection, transport and disposal of river waste while taking into account the potential environmental impacts of the intervention.



Figure 2: Waste hierarchy (Source: European Commission)

The river basin management plans are an important tool for the transnational implementation of some of the proposals below and the Partnership is happy to discuss them in more detail if requested.

Prevention measures

1. Fostering compliance with existing legislation with a focus on preventing the release of macro and micro-plastics into the environment regarding the transposition of Directive (EU) 2019/904 on single-use plastics (e.g., extending plastic collection, recycling rates and producer responsibility, additional obligations in product design, banning plastic products, tightening reuse quotas, stricter penalties for improper disposal, etc.). Updating and improving sectoral policies to ban single-use plastics and introduce a deposit scheme for PET bottles to meet the EU's 90% collection target by 2029. Mandatory labelling of products designating the type of plastic to promote selective collection and recycling.

2. Establish a legal framework for environmental violations, sanction mechanisms and instruments to identify, sanction and prevent illegal landfills. Restricting the release of microplastics and exploring the use of biodegradable plastics in product segments where releases to the environment cannot be avoided.

Removal of pollution and restoration of natural habitats

3. Consideration of the environmental impact of the construction of permanent, large concrete structures that affect the flow and ecosystem of rivers. Instead of permanent structures, it is proposed to explore the possibility of modular temporary structures, which would only be used in rivers when plastic-filled floodwaters are present. It is recommended that a cost-benefit and environmental impact assessment be carried out before implementing physical barriers to contain plastic pollution.

4. Existing best practices in waste collection and disposal should be disseminated, involving as many stakeholders as possible. Promoting best practices on cooperation between different organisations in the operation of such infrastructures is also key, as no one can tackle this problem alone. On the Tisza River, one of the most polluted tributaries of the Danube, special waste treatment points have been set up in cooperation between water authorities, NGOs and companies. These points will start operating in a quick response to the imminent plastic floods and will be able to remove hundreds of tonnes of organic and inorganic river waste. Water authorities are also working with NGOs such as the Plastic Cup initiative to target plastic deposits along the riverside.

5. Establish a harmonised monitoring system for macro- and micro-pollution, including the standardisation of definitions and sampling, testing and assessment procedures.

6. When building a new wastewater treatment plant or upgrading an existing one, it is important to ensure reliable, safe disposal and proper treatment of wastewater, including the removal and treatment of micro- and macro-pollutants.

Legal consequences

7. Establish an enforcement plan and cross-border monitoring system (early warning system) for river water pollution (plastic, municipal, hazardous, etc.). Facilitate transboundary cooperation that regards micro and macro plastic pollution in water as it is influencing the biological status of the water bodies. Camera surveillance systems can be a good solution, as cross-border pollution can be monitored more effectively and authorities have a better chance of timely preparation and proper remediation.

8. To ensure adequate legal protection, water bodies (rivers, large lakes) and their natural values need better representation. By granting legal status to water bodies, these natural values and resources could be represented before public authorities and their legal status could help to better enforce environmental protection. A good example of how a river can be given rights is the Whanganui River in New Zealand, whose rights are based on 140 years of Moorish tradition.

9. A clearer definition of responsibilities for the elimination of water pollution and the management of collected waste is essential. Who is responsible for collection, recycling or disposal? And who bears the costs? The waste collector, the Water Board, the municipality or the waste management service providers? Budgets and resources must be allocated to clean up pollution and manage waste.

Awareness-raising and dissemination

10. Enhanced awareness-raising, education and communication campaigns involving stakeholders (decision-makers, manufacturers, the general public, NGOs, etc.) and dissemination of methods, results and existing infrastructure (community compost points, reuse centers, repair network, recycling points, etc). For more details on the awareness-raising results of the project, please see the relevant Section of this Survey.

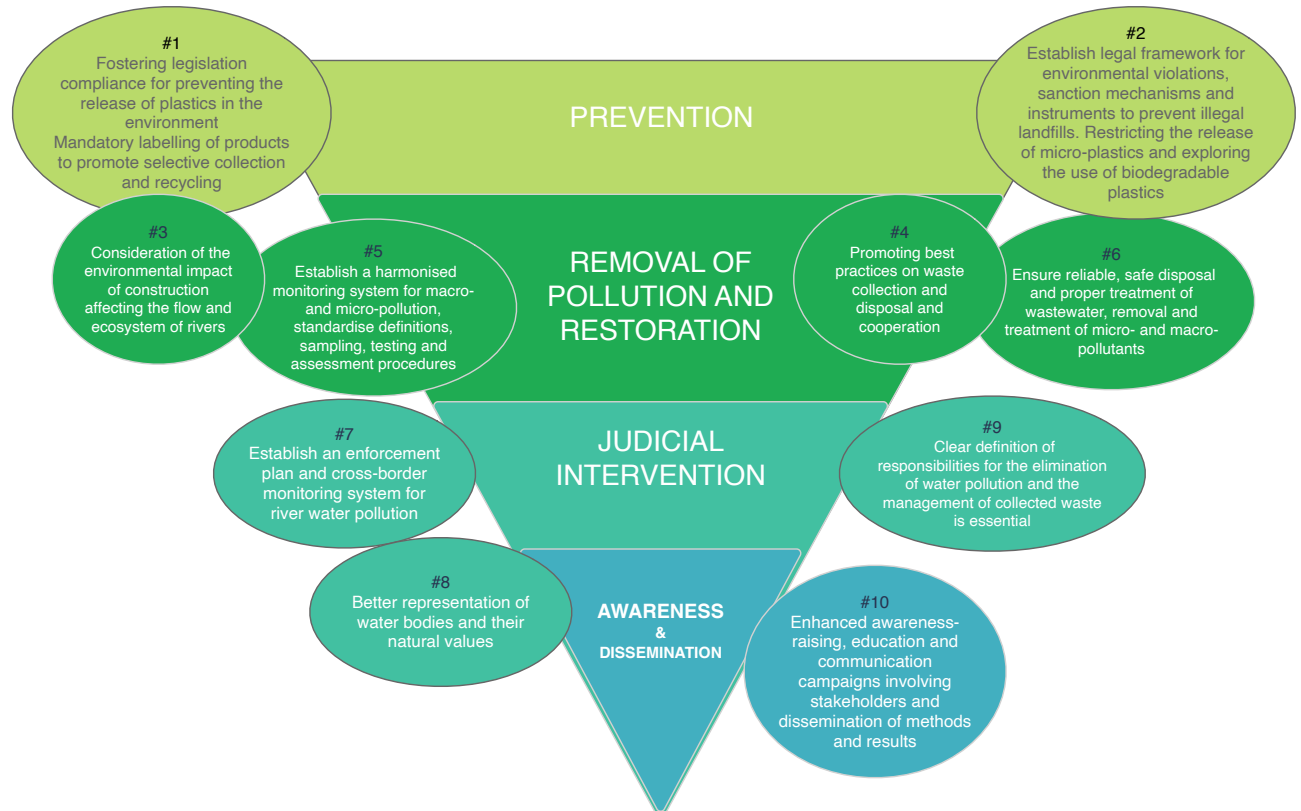


Figure 3: Top 10 proposals (own source)

International Legislation



The **Convention on the Protection of the Black Sea against Pollution** was signed in Bucharest in April 1992 and ratified by all six legislative assemblies of the Black Sea countries at the beginning of 1994. The basic framework agreement is also referred to as the ‘Bucharest Convention’, includes three specific Protocols on the control of land-based sources of pollution; dumping of waste; and joint action in the case of accidents (such as oil spills). The basic objective of this Convention is to substantiate the general obligation of the parties to prevent, reduce and control the pollution in the Black Sea. The Convention provides a legal framework for co-operation and establishes concerted actions to fulfil this obligation in order to protect and preserve the marine environment.

The **Strategic Action Plan for the Rehabilitation and Protection of the Black Sea (BS SAP)**¹ is a fundamental elements of regional Black Sea cooperation. The Plan was based on the findings of the first Transboundary Diagnostic Analysis (TDA) of the Black Sea (1996) developed with certain principles to include specific policy actions to combat identified threats and problems. This document represents an agreement between the six Black Sea coastal states (Bulgaria, Georgia, Romania, the Russian Federation, Turkey and Ukraine) to act in concert to assist in the continued environmental recovery of the Black Sea.

The **United Nations Convention on the Law of the Sea (UNCLOS)**², defines the rights and responsibilities of nations with respect to their use of the world’s oceans and establishes guidelines for businesses and the management of marine natural resources. UNCLOS came into force in 1994, as of June 2016, 167 countries and the European Union have ratified the Convention.

The **Ballast Water Management Convention**³ (BWM Convention) aims to prevent the spread of harmful aquatic organisms from one region to another by setting standards and procedures for the management and control of ships’ ballast water and sediments. Under the Convention, all international ship traffic will be required to manage their ballast water and sediments according to a ship-specific Ballast Water and Sediments Management Plan and to meet certain standards. All new ships must carry a Ballast Water Record Book and an International Ballast Water Management Certificate. Existing ships will be required to do the same, but after a phase-in period. An Annex includes technical standards and requirements. As an intermediate solution, ships should exchange ballast water mid-ocean. However, eventually most ships will need to install an on-board ballast water treatment system by 2024. Parties to the Convention are given the option to take additional measures which are subject to criteria set out in the Convention and according to International Marine Organization (IMO) guidelines.

The **International Convention for the Prevention of Pollution from Ships (MARPOL73/78)** is the main international convention aimed at preventing or minimising pollution of the marine environment by ships from operational or accidental causes. MARPOL has been updated by several amendments through the years.⁴ Special Areas with strict controls on operational discharges are included in most of the six technical Annexes.

The **Convention on Biological Diversity (CBD)** of 1992⁵, as the first global treaty to provide a legal framework for biodiversity conservation, establishing three main goals – (1) the conservation of biological diversity; (2) the sustainable use of its components; (3) the fair and equitable sharing of the benefits arising from the use of genetic resources. The Convention recognized for the first time in international law that the conservation of biological diversity is “a common concern of humankind” and is an integral part of the development process. The agreement covers all ecosystems, species, and genetic resources. It links traditional conservation efforts to the economic goal of using biological resources sustainably. It sets principles for the

¹ It was adopted in 1992 under the Convention on the Protection of the Black Sea against Pollution and it was updated in Sofia, Bulgaria (17 April 2009).

² The Convention, concluded in 1982, replaced the 1958 Convention on the High Seas. It also called the Law of the Sea Convention or the Law of the Sea Treaty, as an international agreement was a result of the third United Nations Conference on the Law of the Sea (UNCLOS III, 1973 – 1982).

³ The International Convention for the Management of Ship’s Ballast Water and Sediments. It was adopted in 2004, entered into force globally on 8 September .2017.

⁴ The MARPOL Convention was adopted on 2 November 1973 at IMO. The follow-up Protocol of 1978 was adopted in response to a spate of tanker accidents in 1976-1977. As the 1973 MARPOL Convention had not yet entered into force, the 1978 MARPOL Protocol absorbed the parent Convention. The combined instrument entered into force on 2 October 1983. In 1997, a Protocol was adopted to amend the Convention, and a new Annex VI was added which entered into force on 19 May 2005.

⁵ CBD was signed on 5 June 1992 at the 1992 UN Conference on Environment and Development (UNCED) in Rio de Janeiro and ratified in 1993

fair and equitable sharing of the benefits arising from the use of genetic resources, notably those destined for commercial use. It covers the rapidly expanding field of biotechnology through its **Cartagena Protocol on Biosafety**, addressing technology development and transfer, benefit-sharing and biosafety issues. The Cartagena Protocol⁶ aims to ensure the safe handling, transport and use of living modified organisms, resulting from modern biotechnology, that may have adverse effects on biological diversity, taking also into account risks to human health. Subsequently, the **Nagoya Protocol**⁷ is a supplementary agreement to the CBD and provides a transparent legal framework for its effective implementation. The Nagoya Protocol aims to share the benefits arising from the utilization of genetic resources in a fair and equitable way, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, considering all rights over those resources, thereby contributing to the conservation of biological diversity and the sustainable use of its components.

The **Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS)**⁸ is a legal conservation tool based on cooperation⁹. The purpose of ACCOBAMS is to reduce threats to cetaceans, notably by improving current knowledge on these animals. This intergovernmental agreement demonstrates the commitment of coastal countries to preserve all cetacean species and their habitats within the geographical area of the Agreement. More stringent enforcement measures are defined than those in previously adopted texts. The Agreement area consists of all the maritime waters of the Black Sea, the Mediterranean and the contiguous Atlantic area west of the Straits of Gibraltar. The area also includes the Pelagos Sanctuary established by France, Italy and Monaco to protect marine mammals in the northwest Mediterranean. ACCOBAMS is the first binding agreement between countries of these sub-regions to work together for cetacean conservation. One innovative aspect of this agreement is that it includes -inland countries whose maritime activities are likely to jeopardise cetacean conservation. In 2010, parties to ACCOBAMS adopted a Resolution to extend the geographical scope of the Agreement area to the Exclusive Economic Zones of Spain and Portugal. The Agreement has 24 parties: Albania, Algeria, Bulgaria, Croatia, Cyprus, Egypt, France, Georgia, Greece, Italy, Lebanon, Libya, Malta, Monaco, Montenegro, Morocco, Portugal, Romania, Slovenia, Spain, Syria, Tunisia, Turkey and Ukraine.

The **UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention)** is a unique international legal instrument and intergovernmental platform which aims to ensure the sustainable use of transboundary water resources by facilitating cooperation. Initially negotiated as a regional instrument, it has been opened for accession to all UN Member States in 2016. The Water Convention has served as a model for transboundary cooperation arrangements throughout the UNECE region. One early example was the **Danube River Protection Convention (1994)**, which applies the Convention's provisions in a specific subregional context. The Contracting Parties of the Convention on Cooperation for the Protection and Sustainable Use of the Danube River (AT, BA, BG, HR, CZ, DE, MD, ME, RO, RS, SK, SI, UA) and the European Commission agreed to cooperate on basic water management issues using all legal, administrative and technical means. The **International Commission for the Protection of the Danube River (ICPDR)** was established to implement the Danube Protection Convention, as well as coordinate the implementation of the Water Framework Directive and the Floods Directive at the international level. The main objective of the Danube River Protection Convention (DRPC) is to ensure that surface waters and groundwater within the Danube River Basin are managed and used sustainably and equitably, including the reduction of pollution loads entering the river system.

The **EU Blue Growth Initiative** is the long-term strategy to support sustainable growth in the marine and maritime sectors. Seas and oceans are drivers for the European economy and have great potential for

⁶ The Cartagena Protocol was adopted in January 2002 to supplement the provisions of the Convention. It entered into force in September 2003.

⁷ Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the CBD was adopted on 29 October 2010 in Nagoya, Japan. It entered into force on 12 October 2014.

⁸ It was signed on 24 November 1996 and entered into force on 1 June 2001.

⁹ ACCOBAMS results from consultations between the Secretariats of four Conventions: (1) the Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean and its Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean; (2) Bonn Convention on the Conservation of Migratory Species of Wild Animals; (3) Bern Convention on the Conservation of European Wildlife and Natural Habitats; and (4) Bucharest Convention on the Protection of the Black Sea against Pollution.

innovation and growth. It is the maritime contribution to achieving the goals of the Europe 2020 strategy for smart, sustainable and inclusive growth.

The aim of the **EU's Marine Strategy Framework Directive (MSFD, 2008/56/EC)** is EC is the environmental pillar of the EU's Integrated Maritime Policy (IMP), which was set up with a view to enhance the sustainable development of its maritime economy while better protecting its marine environment. Its objective is to reach 'good environmental status' (GES) for the EU's marine waters by 2020, to continue their protection and preservation, and to prevent subsequent deterioration. It establishes European marine regions (the Baltic Sea, the North-east Atlantic Ocean, the Mediterranean and the Black Sea) and sub-regions within the geographical boundaries of the existing Regional Sea Conventions. To achieve GES by 2020, Member States developed their ecosystem-based strategies to be reviewed every six years. A regulation on Integrated Coastal Zone Management (ICZM) defines the principles of sound coastal planning and management to be considered by Member States. Annex III of the Directive was amended in 2017 to better link ecosystem components, anthropogenic pressures and the impacts on the marine environment with the MSFD's 11 qualitative descriptors and with the new Decision on Good Environmental Status. Directive 2014/89/EU of the European Parliament and of the Council of 23 July 2014 establishes a framework for **maritime spatial planning**. The Directive sets out a common approach for EU countries to marine spatial planning. This allows each EU country to plan its own maritime activities. However, this planning process – whether at national, regional or local level – is now more compatible at EU level thanks to the introduction of a common timeframe and the setting of common minimum requirements.

In 1988, the **Frankfurt Ministerial Seminar on Water** reviewed the existing legislation and identified several improvements that could be made and gaps that could be filled. The first results of this were the adoption of the **EU Urban Wastewater Treatment Directive** in 1991, providing for secondary (biological) wastewater treatment, and even more stringent treatment where necessary. The **EU Nitrates Directive (91/676/EEC)**, also in 1991, addressed water pollution by nitrates leaching from agriculture.

The Commission proposed a review of the quality standards and, where necessary, tightening them in a new **Drinking Water Directive** (adopted November 1998). Moreover, a **Directive for Integrated Pollution and Prevention Control (IPPC)** was adopted in 1996 which addressed pollution from large industrial installations. This was later transformed into **the Industrial Emissions Directive**. A complementary regulation requires Member States to send a report to the European Commission every four years, providing details of codes of good agricultural practice, designated nitrate vulnerable zones (NVZs), water monitoring and a summary of action programmes.

Pressure for a fundamental **rethink of EU water policy** came to a head in mid-1995. The Commission, which had already been considering the need for a more global approach to water policy, accepted requests from the European Parliament's Environment Committee, the Council of Environment Ministers, and the outcome of a broad process of consultation to manage water on a river basin scale. The Commission concluded that while considerable progress had been made in tackling individual issues, water policy objectives and means were fragmented. All parties agreed on the need for a single piece of framework legislation to resolve these problems. In response to this, the Commission presented a Proposal for a **Water Framework Directive (WFD 2000/60/ EC)**. Commission presented a Proposal for a **Water Framework Directive (WFD 2000/60/ EC)** with the following key aims:

- (1) expanding the scope of water protection to all surface water and groundwater;
- (2) achieving "good status" for all waters by a set deadline;
- (3) water management based on river basins;
- (4) a 'combined approach' of emission limit values and quality standards and
- (5) getting citizens more involved in streamlining legislation.

The EU **WFD** is arguably the most important, far-reaching, water legislation ever to emerge from the EU. It was transposed into law in EU Member States at the end of 2003. A primary purpose of WFD was to update and consolidate existing piecemeal EU water legislation: it established a new, integrated ecosystem-based approach to water protection, improvement and sustainable use. It aims to prevent and reduce pollution, promote sustainable use, protect and improve the aquatic environment, mitigate the effects of floods and

droughts. The scope of the Directive – applies to all water bodies, including rivers, estuaries, coastal waters, and man-made water bodies (e.g., canals, docks). These water bodies are managed via a series of national or international ‘river basin districts’. A key aim of the WFD is for all water bodies to achieve ‘good ecological and chemical status’. The original target for achieving good status was 2015, but further deadlines are set for 2021 and 2027. For water bodies designated as heavily modified or artificial, the respective targets are good ecological potential and good chemical status. Good ecological potential is a different ecological objective that considers the physical modifications necessary to sustain specified human uses such as navigation. Another important part of the WFD is an extensive program of monitoring of surface and groundwater bodies. The results of this monitoring are being used to assess achievement of the WFD objectives. The WFD also aims to apply a ‘combined approach’ of emission limit values and quality standards and getting citizens more involved in streamlining legislation. Member States create River Basin Management Plans based on natural geographical river basins, and specific programmes, measures to achieve the objectives. First plans were published in most Member States between end 2009 and middle 2010. These plans set out the ‘programmes of measures’(PoM) which are required to achieve good ecological and chemical status in water bodies ‘at risk’ of failing to meet these targets. Progress with WFD implementation is reviewed on a six-yearly basis and the next planning cycle is up to 2027.

Directive 2008/105/EC, the ‘daughter Directive’ to the WFD was adopted by the Environment Council in October 2008 and had to be transposed into law in EU Member States by July 2010. This Directive delivers the requirements of Article 16 of the WFD regarding the need for measures to progressively reduce discharges, emissions and losses of priority substances and to cease or phase out discharges, emissions and losses of priority hazardous substances. The Directive and the list of environmental quality standards (EQS) were amended by Directive 2013/39/EU.

Directive 2004/35/EC on **environmental liability** with regard to the prevention and remedying of environmental damage (ELD) establishes a framework based on the polluter pays principle to prevent and remedy environmental damage.¹⁰ The ELD defines “environmental damage” as damage to protected species and natural habitats, damage to water and damage to soil. Operators carrying out dangerous activities listed in Annex III of the Directive fall under strict liability (no need to prove fault). Operators carrying out other occupational activities than those listed in Annex III are liable for fault-based damage to protected species or natural habitats. The establishment of a causal link between the activity and the damage is always required. Affected natural or legal persons and environmental NGOs have the right to request the competent authority to decide about remedial action.

European environment policy rests on the principles of precaution, prevention, halting pollution at its source, and on the Polluter Pays Principle. Multiannual environmental action programmes set the framework for future action in all areas of environment policy. They are embedded in horizontal strategies and considered in international environmental negotiations. Of course, implementation is crucial. European environment policy dates to the European Council held in Paris in 1972, at which the Heads of State or Government following the first UN Conference on the Environment) declared the need for a European Community environment policy flanking economic expansion and called for an action programme.

The Single European Act of 1987 introduced a new ‘Environment Title’, which provided the first legal basis for a common environment policy with the aims of preserving the quality of the environment, protecting human health, and ensuring rational use of natural resources. Subsequent treaty revisions strengthened the European Community’s commitment to environmental protection and the role of the European Parliament in its development. The Treaty of Maastricht (1993) made the environment an official EU policy area, introduced the co-decision procedure and made qualified majority voting in the Council the general rule. The Treaty of Amsterdam (1999) established the duty to integrate environmental protection into all EU sectoral

¹⁰ The Directive entered into force on 30 April 2004. The EU Member States had three years to transpose it in domestic law and the transposition was completed by July 2010. The ELD was amended four times through Directive 2006/21/EC on the management of waste from extractive industries, Directive 2009/31/EC on the geological storage of carbon dioxide and amending several directives, through Directive 2013/30/EU on safety of offshore oil and gas operations and Regulation (EU) 2019/1010 on the alignment of reporting obligations in the field of legislation related to environment.

policies with a view to promoting sustainable development. 'Combating climate change' became a specific goal with the Treaty of Lisbon (2009), as did sustainable development in relations with third countries.

The EU **Habitats Directive** (92/43/EEC) ensures the conservation of a wide range of rare, threatened or endemic animal and plant species. Some 200 rare and characteristic habitat types are also targeted for conservation. Adopted in 1992, the Habitats Directive aims to promote and maintain biodiversity, taking account of economic, social, cultural and regional requirements. It forms the cornerstone of Europe's nature conservation policy, and with the EU Birds Directive, establishes the EU-wide Natura 2000 ecological network of protected areas which are safeguarded against potentially damaging developments.

The **EU Birds Directive** (2009/147/EC) aims to protect all the 500 wild bird species naturally occurring in the European Union. However, at least 32% of the EU's bird species are currently not in a good conservation status. Habitat loss and degradation are the most serious threats to the conservation of wild birds. Therefore, the Directive places great emphasis on the protection of habitats for endangered and migratory species. Urban sprawl and transport networks have fragmented and reduced their habitats. Intensive agriculture, forestry, fisheries and the use of pesticides have diminished their food supplies. Furthermore, hunting needed to be regulated in order not to damage populations. Often, migratory wild bird species can only be protected through transboundary cooperation. Concerned with their decline, Member States unanimously adopted the Birds Directive in April 1979. It is the oldest piece of EU environmental legislation, and one of its cornerstones. It establishes a network of Special Protection Areas (SPAs) including all the most suitable territories for these species. Since 1994, all SPAs are included in the Natura 2000 ecological network, set up under the Habitats Directive. Amended in 2009, it became Directive 2009/147/EC.

The **Common Fishery Policy** (CFP)¹¹ establishes a community control system for ensuring compliance with the rules of the Common Fisheries Policy.

Directive 2005/35/EC on Ship-source Pollution introduces rules and penalties for infringements in the event of discharges of oil or other polluting substances from ships. The current legislation states that ship-source pollution discharges constitute a principle criminal offence. Minor discharges are not automatically considered as offences, except where repeated discharges lead to a deterioration in water quality. The persons responsible for discharging polluting substances may be subject to criminal penalties if they have acted with intent, recklessly or with serious negligence. The act of inciting or aiding and abetting a person to discharge a polluting substance may also lead to criminal penalties. The Directive applies to all types of vessels, irrespective of their flag. Furthermore, discharges of pollution are forbidden in the internal waters and ports of an EU country; the territorial waters of an EU country; straits used for international navigation subject to the right of transit passage as laid down in the 1982 United Nations Convention on the Law of the Sea; the exclusive economic zone (EEZ) of an EU country; and the high seas.

The **EU Floods Directive** 2007/60/EC aims to reduce and manage the risks posed by floods to human health, the environment, infrastructure and property. Member States must carry out preliminary assessments to identify the river basins and associated coastal areas at risk, and then prepare flood risk maps and management plans focused on prevention, protection and preparedness.

The **Waste Framework Directive** (2008/98/EC) establishes the basic concepts and definitions related to waste management, such as the definitions of waste, recycling and recovery. It explains when waste ceases to be waste and becomes a secondary raw material ('end-of-waste criteria'), and how to distinguish between waste and by-products. The Directive also lays down some basic waste management principles. For example, it requires that waste be managed without endangering human health and harming the environment; and without risk to water, air, soil, plants or animals. This must be done without causing a nuisance through noise or odours, and without adversely affecting the countryside or places of special interest. The Directive introduces the Polluter Pays Principle and Extended Producer Responsibility. It incorporates provisions on hazardous waste and waste oils (old directives on hazardous waste and waste oils were repealed on 12 December 2010) and includes two new recycling and recovery targets to be achieved by 2020 – 50% for re-

¹¹ Commission Implementing Regulation (EU) 2015/1962 of 28 October 2015. It amends Implementing Regulation Nr. 1224/2009/EC of 20 November 2009

use and recycling of certain waste materials from households and other origins similar to households, and 70% for re-use, recycling and other recovery of construction and demolition waste. The Directive requires that Member States adopt waste management plans and waste prevention programmes.

The **Drinking Water Directive** 98/83/EC defines essential drinking water quality standards. It requires Member States to regularly monitor the quality of water intended for human consumption by using a 'sampling points' method. Member States can include additional requirements specific to their territory, but only if this leads to setting higher standards.

The **EU Urban Wastewater Treatment Directive** (91/271/EEC) was adopted on 21 May 1991 to protect the water environment from the adverse effects of discharges of urban and industrial wastewater discharges. The Directive sets minimum standards and timetables for the collection, treatment and discharge, introduces controls on the disposal of sewage sludge, and requires its dumping at sea to be phased out. On 27 February 1998 the Commission issued Directive 98/15/EC amending Directive 91/271/EEC to clarify the requirements of the Directive in relation to discharges from urban wastewater treatment plants into sensitive areas which are subject to eutrophication.¹² It defines the information that Member States should provide the Commission when reporting on the state of implementation of the Directive according to Article 17 and specifies the format in which the information should be provided. This Decision was adopted in accordance with Article 18 of the Directive.

The **Environmental Quality Standards Directive** 2008/105/EC establishes EU limits on concentrations of 33 priority substances presenting a significant risk to, or via, the aquatic environment, and eight other pollutants in surface waters. During a review, 12 new substances were added to the existing list and an obligation was introduced for the European Commission to establish an additional list of substances to be monitored in all Member States (watch list) to support future reviews of the priority substances list.

The 'new' **EU Water Bathing Directive** (2006/7/EC) replaced Directive 76/160/EC. It aims to enhance public health and environmental protection by laying down provisions for the monitoring and classification (in four categories) of bathing water and informing the public about it. During bathing season, Member States take samples and assess the concentration of at least two specific bacteria once a month at each bathing water site. The Directive applies to surface waters that can be used for bathing, except for confined waters subject to treatment or used for therapeutic purposes, and confined waters artificially separated from surface water and groundwater such as swimming pools spas and thermal baths. The Directive is intended to protect human health and the environment, as well as provide better and earlier information to citizens about bathing water quality. This represents a move away from simple sampling and monitoring of bathing waters to bathing water quality management. The Directive is integrated into all other EU measures protecting the quality of all our waters (rivers, lakes, ground waters and coastal waters) through the Water Framework Directive.

The **EU Blue Economy**, aims to promote sustainable growth of maritime economies, the development of maritime areas and the use of marine resources. In 2012, the European Commission launched the **Blueprint to Safeguard Europe's Water Resources**, a long-term strategy which aims to ensure the availability of a sufficient level of quality water for all legitimate uses by better implementing current EU water policy, integrating water policy objectives into other policy areas, and filling gaps in the current framework. It envisages the establishment by the Member States of water accounts and water efficiency targets, as well as the development of EU standards for water reuse.

The **European Strategy for Plastics** in a Circular Economy will transform the way plastic products are designed, used, produced and recycled in the EU. Better design of plastic products, higher plastic waste recycling rates and better-quality recycling will help boost the market for recycled plastics. It will deliver greater added value for a more competitive, resilient plastics industry. By 2030, all plastic packaging should be recyclable. Plastic strategy – The EU adopted a European strategy for plastics in January 2018. It is part of the EU's circular economy action plan, and builds on existing measures to reduce plastic waste. The plastics strategy is a key element of Europe's transition towards a carbon neutral and circular economy. It will contribute to reaching the 2030 Sustainable Development Goals, the Paris Climate Agreement objectives and

¹² Commission Decision 2014/413/EU was adopted on 26 June 2014 and replaces Commission Decision 93/481/EEC on 28 July 1993.

the EU's industrial policy objectives with the aim to protect environment and reduce marine litter, greenhouse gas emissions and our dependence on imported fossil fuels. It will support more sustainable and safer consumption and production patterns for plastics. The plastics strategy also aims to transform the way plastic products are designed, produced, used and recycled.

The **Directive on single-use plastics** (EU) 2019/904 (on the reduction of the impact of certain plastic products on the environment) aims EU to reduce the volume and impact of certain plastic products on the environment. Measures being applied to different products are proportionate and tailored to get the most effective results for more sustainable alternatives. The 10 items being addressed by the Directive are (1) Cotton bud sticks, (2) Cutlery, plates, straws and stirrers, (3) Balloons and sticks for balloons, (4) Food containers, (5) Cups for beverages, (6) Beverage containers, (7) Cigarette butts, (8) Plastic bags, (9) Packets and wrappers, (10) Wet wipes and sanitary items. Where sustainable alternatives are easily available and affordable, single-use plastic products cannot be placed on the markets of EU Member States. This applies to cotton bud sticks, cutlery, plates, straws, stirrers, and sticks for balloons. It will also apply to cups, food and beverage containers made of expanded polystyrene, and on all products made of oxo-degradable plastic. For other single-use plastic products, the EU is focusing on limiting their use by reducing consumption through awareness-raising, introducing design and labelling requirements (e.g., connect caps to bottles) information on plastic content of products and harm done to nature if the products are littered in the environment as well as Extended Producer Responsibility (EPR) schemes.

Comprehensive legislation for environmental and nature protection



Austria

There is no unified system of environmental laws in Austria, the wide range of cross-sectoral legislation is the result of the gradual increase over time in the emphasis placed on environmental regulation. Executive competences are divided among the federal government and its nine federal states. The **Federal Constitution** (FCL) enumerates the responsibilities of the federal government, responsibilities not explicitly mentioned here are the prerogative of the legislative and executive authority of the federal states. This division of competencies is the only section of the FCL that mentions environmental protection/conservation. According to the FCL, the following environmental issues are federal competencies – matters of business and industry, forestry, water, mountain stream control, environmental and air pollution (except for emissions from domestic energy plants) and waste management (hazardous waste and individual fractions of non-hazardous waste).

Environmental Impact Assessment is divided between federal (legislation) and state (execution) competences. Nature conservation (incl. biodiversity and nature reserve areas), soil conservation, building codes, spatial planning, laws on agriculture, game and fishery codes are dealt by the federal states.

Furthermore, there is an additional law with constitutional status which defines **sustainability** as a national objective (Bundesverfassungsgesetz Nachhaltigkeit, BVG-N). There is no established fundamental right to environmental protection for the individual. Instead, it is considered as constitutional value, which shall be accounted for in any decision made and/or action taken by public authorities. However, courts have ruled that the definition of sustainability as a national objective does not prevail over other laws, rights and interests in an absolute manner (e.g., in a decision about the expansion of Vienna international airport). Related environmental rights, duties, and responsibilities are regulated in different, partially highly specific acts or regulations. The Rights of environment *users* are granted with regard to specific issues.

Nature conservation is the competence of the federal states. **Nature Conservation Act of Lower Austria** specifies that everyone must contribute to environmental protection and act in a way that, as far as possible, does not negatively impact wildlife (Duties of environment users). Furthermore, everyone is obliged to use nature only as far as its value is maintained for future generations. Implementation of the individual EU Directives such as the Habitats Directive, the Birds Directive and the Water Framework Directive take place within the **Provincial Nature Conservation Acts**.

The **Regulation on Industrial Accidents** (Industrieunfallverordnung) obliges factory operators to immediately report accidents to the competent authority in detail. For industrial accidents involving wastes, there is a separate regulation (Abfall-Industrieunfallverordnung) with similar content. The federal **Environmental Liability Act** (Bundes-Umwelthaftungsgesetz, B-UHG) requires operators of certain industries to implement prevention and remediation measures, and to bear the cost of the respective remediation efforts. This act applies to (potential) damages to water and soil caused by certain industrial plants.

Slovakia

The primary legal environmental protection is the **Act on Environment**¹³. Environmental protection is defined as activities that prevent, reduce or eliminate pollution or damage the environment, including the protection of its components or specific ecosystems and their interrelationships and the protection of the environment. Environmental pollution is the introduction of physical, chemical or biological agents into the environment due to human activity. Duties of environment users include taking the precautionary approach by implementing measures at the source with an objective to prevent pollution or damage, and to minimise adverse effects of their activities to the environment.

The **Act on Nature and Landscape Protection**¹⁴ further regulates the competences of state administration bodies and municipalities, and the rights and obligations of legal entities and individuals concerned. The objectives are to ensure the long-term preservation of the natural balance, the protection of biodiversity and

¹³ Act no. 17/1992 Coll. on Environment

¹⁴ no. 543/2002 Coll.

natural values, and to create conditions for sustainable development. Furthermore, the use of natural resources and the provision of ecosystem services should consider the economic, social and cultural needs, as well as regional and local conditions.

The general rules for nature protection are including inter alia obligations on nature and landscape protection from threat, damage and destruction, caring for the components and elements of nature with a view to preserving and protecting them, improving the state of the environment and establishing and maintaining a spatial system of ecological stability.

The protection of wetlands and natural habitats defines environmental protection as a set of measures needed to maintain or restore favourable conditions for natural habitats and habitats of European or national importance. The nature protection authority (Regional District Authority) is charged to enforce this law and authorised to impose appropriate measures. Legal entities whose activities interfere with ecosystems are obliged to take measures at their own expense aimed at preventing and limiting their damage and destruction. Operators and legal entities whose activities interfere with ecosystems, their elements or components shall be required to take measures, at their own expense, to prevent and limit damage and degradation.

Hungary

At the top of the hierarchy of environmental protection laws is the **Fundamental Law** of Hungary. It assigns responsibilities to the State, as well as all citizens, to protect and conserve nature and the sustainability of its resources for future generations, also declaring that everyone has the right to a healthy environment and that 'Anyone who causes damage to the environment shall be obliged to restore it or to bear the costs of restoration'. The Hungarian Constitutional Court's case law refers to the **right of non-regression**; that is avoiding new competition distortion, as a result of weakening already existing environmental standards. The Constitutional Court declared¹⁵ that the State may only reduce the level of nature conservation and environmental protection if it is unavoidable to ensure other fundamental rights or constitutional values. This **necessity-proportionality** test and **non-derogation principle** are essential for the sake of maintaining biodiversity. The explicitly expressed right to a healthy environment requires active state behaviour (e.g. forming of legislation and organisational systems).¹⁶ Some examples of natural resources which form part of the 'common national heritage' are listed such as arable land, water resources, forests and biological diversity.

The second in the hierarchy of **environmental and nature conservation-related legislation** is the **Environmental Protection Act**.¹⁷ It declares basic environmental terminologies and **principles** in relation to environmental protection e.g. the **Precautionary Principle, prevention, remediation of environmental damages, cooperation, information** and allocating **responsibility** for environmentally damaging activities. The Environmental Protection Act gives a basic framework for water management and water quality management for hazardous chemicals and technologies. Since 1997, comprehensive 5-year environmental plans for Hungary's policy goals and measures have been set in the **National Environmental Protection Programmes** (NAPs), including the regulation related to the elaboration, content and implementation of these NAPs.

The **Water Management Act**¹⁸ deals with surface and groundwater, natural aquifers, surface water channels and riparian zones. It also regulates all those activities that impact or alter the water quality or the structure of aquifers, water utilisation, protection of water sustainability and water resource management.

¹⁵ Decision 28 of 1994 of the Constitutional Court

¹⁶ The Constitutional Court declared¹⁶ that the State may only reduce the level of nature conservation and environmental protection if it is unavoidable to ensure other fundamental rights or constitutional values. This **necessity-proportionality** test and **non-derogation principle** are essential for the sake of maintaining biodiversity.

¹⁷ Act LIII of 1995 on the General Rules of Protection of the Environment

¹⁸ Act LVII of 1995 on Water Management

Several other pieces of legislation contain sector-specific but environmental and nature conservation-related provisions, e.g., the Water Utility Service Act¹⁹ and the Agricultural Soil Protection Act.²⁰

At the next level of the hierarchy are **government and ministerial decrees** that can only be made with legal permission granted by the Environmental Protection Act and other relevant Acts.

Local government decrees issued by local authorities are at the lowest legal hierarchical level. However, they play an important role in local environmental and nature protection, and waste management.

Serbia

The **Law on Environmental Protection**²¹ at the top of the legislation hierarchy, sets forth an integrated system of environmental protection ensuring the right to a healthy environment and economic growth balanced with the environment. The Act establishes the Environmental Protection Agency, conditions and instruments for sustainable nature management and conservation with the aim to preserve the balance of nature, the integrity, diversity and quality of natural values and to ensure the conditions for the survival of living organisms. The Law also aims to prevent, control, reduce and rehabilitate all forms of pollution; promote and utilise less harmful products, processes, technologies, and practices. The Act describes codes of conduct for waste management, including prevention or reduction, re-use and recycling, separation of secondary raw materials, use of waste as fuel, import, export and transit of waste and applying the Polluter Pays Principle. The User Pays Principle states that any person who utilises natural values/resources shall pay the real cost for their utilisation as well as for the re-cultivation of the area. The Principle of Subsidiary Liability which designates state authorities charged with eliminating the consequences of environmental pollution to rectify damages when the polluter is unknown and when pollution originates from the sources outside the territory of the Republic of Serbia. Polluters are defined as any legal or natural entity involved in environmental pollution through its illegal or improper activities.

Freedom of Information and the Right to Public Participation ensures that everyone shall be entitled to information on the state of the environment and to participate in the decision-making process on environmental issues.

After the adoption of the Law on Environmental Protection, the ecological legislation in Serbia underwent important and profound changes. Two major characteristics of this transformation were the adoption of numerous special laws, and the progressive harmonisation of national legislation with EU legislation. However, EU legislation is only partially transposed in many areas, especially in cases where the application of legal provisions depends on governmental decrees and/or ministerial decisions. Amongst sector specific regulation, the **Law on Strategic Environmental Impact Assessment**²² establishes the relations between environmental protection policy and other departmental policies (e.g. spatial and urban planning or land use, agriculture, forestry, fisheries, hunting, energy, industry, transport, waste management, water management, nature conversation). The **Law on Environmental Impact Assessment**²³ (EIA) permit is required in certain cases e.g. the development or reconstruction of buildings, a change of technologies, or other interventions taking place in nature and the natural environment. Public participation in project development and approval are important elements of the EIA process. The **Law on Integrated Pollution Prevention and Control**²⁴ creates the conditions and procedures necessary to issue an integrated operating permit for factories. The **Water Law**²⁵ regulates water management conditions and water management permits for specific industrial facilities discharging wastewaters, regulates wastewater treatment as well as the disposal and discharge of wastewater.

19 Act CCIX of 2011 on Water Utilities

20 Act CXXIX of 2007 on the Protection of Agricultural Soil

21 Official Gazette of the Republic of Serbia, No. 135/04, 36/09, 72/09 (state law), 43/11 (CC), 14/16

22 Official Gazette of the Republic of Serbia, No. 135/04, 88/10

23 Official Gazette of the Republic of Serbia, No. 135/04 and 36/09

24 Official Gazette of the Republic of Serbia, No. 135/04, 25/15

25 Official Gazette of the Republic of Serbia, No. 30/10, 93/12, 101/16

The **Act on Nature Protection**²⁶ governs protection and conservation of nature and biological, geological and landscape diversity, sustainable use and/or management of natural resources and goods, securing their function along with the conservation of natural values and the balance of natural ecosystems. The **Act on Packaging and Packaging Waste Management**²⁷ describes the environmental requirements which packaging must meet to be marketed; packaging and packaging waste management, reporting on packaging and packaging waste, economic instruments, as well as other relevant issues regarding packaging and packaging waste management. Particularly worrying are the persistent efforts of the supreme executive and local authorities to prevent civil society organisations from actively defending the public interest.

Romania

The **Romanian Constitution**, the highest law in hierarchy guarantees fundamental rights to a healthy environment as an obligation for the State. It establishes legal framework for exercising this right and obligations to natural and legal persons to protect and improve the environment.²⁸ The next element in the legal hierarchy is the laws passed by Parliament, followed by two types of government decree. Ordinary government decrees are made during the recess of Parliament and are based on a mandate from Parliament. Emergency government decrees do not require prior authorisation but are later submitted to Parliament for approval or rejection. Below laws and regulations are government decrees, which are acts of lesser legal force regulating the specific application of laws passed by Parliament. At the bottom of the hierarchy are the various ministerial, sector-specific decrees.

Emergency Governmental Order nr. 195/2005 on the Protection of the Environment (EGO) states that environmental protection (EP) is an object of major public interest. By its normative definition, the environment is the totality of the Earth's conditions and interacting natural systems, including values that are important for quality of life and conditions that influence well-being and health. Main principles are the integration of EP in other sectors, the Precautionary Principle, prevention, containing pollutants at source, Polluter Pays Principle, conservation of biodiversity and ecosystems, sustainable use of natural resources, public right for information and participation in the decision-making process and to address the courts in matters pertaining to environmental protection, and the development of international collaboration. This EGO set forth broader rules and regulations on waste management, conservation of biodiversity and protected areas, protection of waters and aquatic ecosystems, protection of the atmosphere, protection of the soil, subsoil and terrestrial ecosystems as well as administrative and criminal sanctions for those who break its provisions.

EGO nr. 57/2007 on the Regime of Protected Natural Areas, Conservation of Natural Habitats, Flora and Wild Fauna deals with nature conservation, classifies protected areas and species, and establishes the rules for implementation.

EGO nr. 68/2007 on Environmental Accountability, Preventing and Remedying Damage to the Environment is based on the Polluter Pays Principle and determines liability rules for imminent danger or damages caused to the environment, protected species and habitats. Specific activities in EGO Annex 3 carry strict liability, e.g. actions taken by different industry branches, waste management, emissions into surface or groundwater requiring authorisation. Other environment damaging activities establish the intention or negligence of the person(s) responsible. The right to use nature is regardless of nationality, but it must be in accordance with relevant legislations.

Bulgaria

A main principle of the Bulgarian Constitution is that the State must ensure environment protection and sustainability, rational utilisation of its natural resources and protect biodiversity. The sector-specific legislations further develop this principle.

²⁶ Official Gazette of Republic of Serbia, no. 36/2009, 88/2010, 91/2010, 14/2016, 95/2018)

²⁷ Official Gazette of the Republic of Serbia, No. 36/09

²⁸ Article 35 of the Romanian Constitution

The general hierarchy of national environmental legislation is as follows:

1. Constitution of the Republic of Bulgaria;
2. International treaties meeting the conditions of Article 5, paragraph 4 of the Constitution of the Republic of Bulgaria and acts of primary EU law;
3. EU regulations;
4. EU directives;
5. EU decisions;
6. Acts;
7. By-laws of the Council of Ministers;
8. By-laws of ministers and heads of departments; and
9. By-laws of the municipal councils.

Basic rights, duties and responsibilities of environment users are regulated in the **Environmental Protection Act**²⁹ (EPA) which addresses the protection of environment for present and future generations regarding biodiversity and conservation. It addresses the use of all components of the environment, protection for present and future generations, as well as human health, biodiversity and conservation. The EPA regulates the rights and obligations of the state, municipalities, legal entities and individuals concerning the prevention and minimisation of pollution and access to environmental information. The Act also controls and manages the factors which damage the environment. implementing environmental impact assessments (EIA); issuing permits for preventing, restricting and control of pollution; declaring and managing specially protected areas; developing an environmental monitoring system; introducing economic regulators and financial mechanisms for environmental management; and regulating the State's rights and obligations to municipalities, companies and individuals concerning environmental issues.

Significant environmental damages, including cross-border damages, are regulated by environmental liability defined under the **Prevention and Remedying of Environmental Damage Act** (ELPRED). The Polluter Pays Principle is applied to prevent and remedy environmental damage. ELPRED determines the power of the competent authorities, the rights and obligations of operators, and the requirements for cooperation and exchange of information on environmental damage with other countries and the European Commission.

Waste Management Act³⁰ implements the EU Waste Framework Directive (2008/98/EC). It involves creating conditions for improving waste management in Bulgaria without risking damage to human health or the environment, as well as increasing volumes of recycled and recovered waste. The Waste Act regulates the measures and controls for protection of the environment and human health by preventing or reducing the harmful effects of the formation and management of waste, reducing the overall impact of resource use, and by increasing the efficiency of this use. It determines the requirements for products, which during the production process or after their final use, generate hazardous and/or widespread waste. Extended Producer Responsibility is introduced in order to promote reuse, prevention, recycling and other types of recovery waste. The purpose of waste management is to prevent or reduce its harmful impact on human health and the environment, and such activities are carried out in accordance with EU legislation.

Biological Diversity Act³¹ This Act orders the relations among the State, municipalities, and the legal and natural persons in respect to the conservation and sustainable use of biodiversity in Bulgaria. Its aims include conservation of natural habitat types representative of Bulgaria and Europe, and habitats of endangered, rare and endemic plant and animal species within a National Ecological Network; conservation of protected flora and fauna, as well as of those that are subject to use and trade; conservation of the genetic resources and the diversity of plant and animal species outside the natural surroundings thereof; regulation of the introduction of non-native, and the reintroduction of native plant and animal species into the wild; regulation of trade in specimens of endangered species of wild flora and fauna; and conservation of old-growth forests.

²⁹ State Gazette 91/2002, last amended by State Gazette 21/2021

³⁰ State Gazette 53/2012, in force as of 13 July 2012, last amended SG 19/2021

³¹ State Gazette 77/2002, last amended by State Gazette 98/2018

Protected Areas Act (State Gazette 133/1998, last amended by State Gazette 21/2021). This Act stipulates the categories of protected areas, their designation and management, their regime of protection and assigned use. Furthermore, it conserves and preserves protected areas as a national and universal treasure. Protected areas are assets considered conducive to the advancement of Bulgarian culture, science and public welfare.

The **Waters Act**³² provides integrated water management including human health protection. It guarantees sustainable and sufficient surface and groundwater by balanced and reasonable water use; reduced water contamination; protects surface and groundwater, and the Black Sea as well as halting pollution of the aquatic environment with natural or synthetic substances, reducing water leaks, emissions and discharge of priority substances and prevents and reduces the harmful effects of water to human well-being, environment, cultural heritage and economic activity.

The **Act on the Protection against the Harmful Effects of Chemicals**³³ regulates manufacturing, usage, storage and export of chemicals, in order to protect human health and the environment. This act regulates the rights and obligations of physical persons and legal entities who manufacture, place on the market, use, store and export chemicals in their own form, in mixtures or in articles and mixtures in order to protect human health and protect the environment. It also designates the powers of state bodies to exercise control over the production, placing on the market, use, storage and export of chemical substances on their own, in mixtures or in articles and mixtures.³⁴

Fisheries and Aquaculture Act³⁵ regulates This Act regulates the ownership, organisation, management, use and conservation of fishery resources in Bulgarian waters (marine and freshwater), including the trade of aquatic organisms.

Adopted in 1992, Council Directive 92/43/EEC of 21 May 1992 aims to conserve natural wild fauna and flora habitats and promote the maintenance of biodiversity while taking account of economic, social, cultural and regional requirements. Some 200 rare and characteristic habitat types are also targeted for conservation. Along with the Birds Directive, it forms the cornerstone of Europe's nature conservation policy and establishes the EU-wide Natura 2000 ecological network of protected areas meant to safeguard against potentially damaging developments.

Convention on Cooperation for the Protection and Sustainable Use of the Danube (the 'Danube River Protection Convention' or DRPC) was signed on 29 June 1994 in Sofia, Bulgaria. The DRPC, which entered into force in October 1998, is the overall legal instrument for cooperation and transboundary water management in the Danube River Basin. The main objective is to ensure that surface water and groundwater within the Danube River Basin are managed and used on a sustainable and equitable basis. To accomplish these objectives, the DRPC established the International Commission for the Protection of the Danube River (ICPDR).

The Environmental Protection Programme for the Danube River Basin (EPDRB) provides for uniform monitoring systems, legislation on liability for transboundary pollution, rules for the protection of wetlands and guidelines for the conservation of areas of ecological or aesthetic importance or value. A Strategic Action Plan (SAP) has been developed under the programme with concrete actions and short-term objectives.

Ukraine

Environmental legislation is a complex structure, combining environmental legislation with different orientations and at different levels. Such norms include constitutional, ordinary and socially focused norms

³² State Gazette 67/1999, last amended by State Gazette 17/2021

³³ State Gazette 10/2000, last amended by State Gazette 17/2019

³⁴ This Act transposes and implements measures for Regulation (EC) № 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), and Regulation (EC) № 1272/2008 of the European Parliament and of the Council of 16 December 2008 on Classification, Labelling and Packaging of Substances and Mixtures (CLP).

³⁵ State Gazette 41/2001, last amended by State Gazette 52/2020

as far as they relate to the protection of natural objects. Environmental legislation consists of legislative acts that are interdependent with each other and with other non-environmental legislation. The norm is the primary element that plays a fundamental role in the system of legislation, given that it is at the lowest fundamental level of the system. Environmental regulations have different legal force depending on which authority has approved or adopted them. In addition, the legal force of adopted acts depends on the environmental value or protected status of the protected object. The legal force of the protection of natural objects depends on their place and status in the system of the natural environment, i.e. it is the system of nature that determines the system of environmental legislation.

Environmental protection is implemented through legal instruments and protection primarily covers all components that make up the natural environment.

The main regulations regarding environmental protection are

- "On Environmental Protection" of June 25, 1991.
- "On the protection of atmospheric air" of October 16, 1992.
- "On the nature reserve fund of Ukraine" of June 16, 1992
- "On the animal world" of March 3, 1993
- "On plant quarantine" of June 30, 1993 and others.

In addition, some relations in the field of use and protection of the environment are regulated by codes (land, water, forest, subsoil), as well as the Laws of Ukraine "On Payment for Land" of July 3, 1992, "On Veterinary Medicine »From June 25, 1992. The Procedure for Restriction, Temporary Prohibition (Suspension) or Termination of Activities of Enterprises, Institutions, Organizations and Facilities in Case of Violation of Environmental Protection Legislation Approved by the Resolution of the Verkhovna Rada deserves special attention.

The right to use nature is the process of rational use of natural resources to meet various needs and interests. The distinction must be made between the right to **general and specific use** of natural resources. The right of general use of natural resources is free and unlicensed e.g., citizens can use parks, forests, collect wild berries, mushrooms, etc. The right of general use of nature is defined³⁶: 'Every citizen has the right to use natural objects that are the property of the people in accordance with the law'. The provision of natural resources for special use is based on special permits. Under the legislation in force, special nature-use entities are required to pay certain amounts for discharges of pollutants into the atmosphere, surface water, groundwater, territorial waters and marine waters, and groundwater. The main principles of nature management are purpose, planning, duration, permitting, special status in people's lives, etc.

Under the **Constitution of Ukraine**, everyone has the right to an environment that is safe for life and health, and to compensation for damage caused by the violation of this right. Everyone has the right to free access to and dissemination of information on the state of the environment and the quality of food and household goods. This right corresponds to the State's obligation to implement sanitary and hygienic measures to improve and restore the environment. Citizens can protect and/or restore environmental rights through legal action.

The **Act On Environmental Protection** also provides for **the responsibilities** of citizens. According to the law, citizens, regardless of whether they are users of nature, are obliged to use natural resources and reserves rationally, so that their actions do not damage natural objects. The fee for special use of nature is set according to the relevant standards and restrictions. The charge shall be established taking into account the distribution, quality, usability, location, processing and storage of natural resources. Specific nature users are liable to pay for pollution, which is assessed with regard to the release of pollutants into the atmosphere; the release of pollutants into surface, territorial and marine waters and underground.

Control in the field of nature management and environmental protection is implemented through inspection, supervision, survey, inventory and expertise. Liability for violation of environmental legislation

³⁶ Article 13 of the Constitution of Ukraine

shall entail disciplinary, administrative, civil and criminal liability as provided for in this Law and other legislation of Ukraine.

Sector-specific legislation



Austria

Surface water conservation

Austria's geographical location in the heart of Europe and the country's abundant water resources have traditionally made water management a priority. The **Core Water Act**³⁷ (*WRG*) governs federal legislation and activities concerning water resource management, water quality management and protection from threats posed by water. The following section provides a rudimentary overview of its contents regarding emissions and water quality. Besides the general *WRG* and subsequent regulations, the matter of (municipal) water supply/management is subject to state legislation. The *WRG* serves as the national implementation of the EU Water Framework Directive (WFD) and defines further water rights for the public. It defines the legal concept of public water assets, and explicitly mentions that they serve public interest. Public interest is defined as preservation of the ecological state of water bodies, protection of groundwater reservoirs in proximity to riparian areas, protection against floods and common public use. Municipalities are granted subjective rights to qualitative and quantitative water protection. *WRG* contains the obligations for anyone whose actions potentially, or in the case of an incident, or during operations, may inflict negative impacts on water bodies. Permit requirements, obligations for pre-emptive/remediating actions, notification of competent authorities, and the authorities' ability to carry out forced intervention at the expense of the violating party are defined. Permits are required for facilities involving storage/piping of hazardous materials and, more generally, for any activity with expected sustained/pejorative effects on the condition of water bodies (incl. groundwater). Designation of water protection areas can be enacted by competent water authorities at the federal and state level. The law mentions the following reasons for such a designation: protection of water supply systems against pollution or impairment of their yield (federal level), safeguarding the general water supply (state level), securing future water demand, and protection of medicinal springs.

Drinking water is subject to the **National Food Act**³⁸ (*LMVSG*) and the Regulation on Drinking Water³⁹ (*TWV*) which specifies qualitative requirements and contamination limits. As a consequence of the general water quality targets laid out in *WRG*, there are three regulations that define quality targets for ground and surface water (Live water quality). For groundwater, there is a regulation regarding quality targets with respect to chemical contamination. For surface waters, two relevant regulations cover chemical contamination as well as ecological conditions. All three regulations provide pollution/contamination limits and/or reference values for the evaluation of water quality. The Regulation on the Monitoring of Water Bodies⁴⁰ (*GZÜV*) establishes rules for the creation of a sampling infrastructure, sampling intervals, etc. Furthermore, rules regarding the methodological requirements of water quality sampling and (laboratory) analysis are presented in a separate regulation⁴¹ (*MVW*).

Under the **Regulation on the Registry of Emissions**⁴² (*EMREGV-OW*), all significant polluting impacts on surface water bodies originating from point sources authorised under water legislation must be measured and recorded by the operator in a dedicated registry. This registry constitutes the basis for the creation of the National River Basin Management Plan (see below) and for the fulfilment of reporting obligations under EU law.

Based on the general water quality requirements of the *WRG*, the principal legislation for sewage is given in the General Regulation on Sewage Emissions⁴³ (*AAEV*). It specifies general qualitative emission limits and requires the enactment of individual sewage treatment regulations for a vast, highly fragmented array of industries. These specific regulations (*AEVs*) provide individual emission limits for the respective industrial sectors. Each wastewater stream is tracked individually, even if they originate from different operational segments within one production facility. One of the specific *AEVs* concerns wastewater from livestock farming, and explicitly prohibits the discharge of liquid manure into running waters or municipal sewers. In

³⁷ Wasserrechtsgesetz

³⁸ Lebensmittel- und Verbraucherschutzgesetz

³⁹ Trinkwasserverordnung

⁴⁰ Gewässerzustandsüberwachungsverordnung

⁴¹ Methodenverordnung Wasser

⁴² Emissionsregisterverordnung

⁴³ Abwasseremissionsverordnung

compliance with emission limits and potentially necessary pre-treatment measures, wastewater from commercial, industrial, agricultural or other facilities shall be treated together with municipal wastewater. Furthermore, emissions from municipal sewage treatment plants are covered in separate regulation⁴⁴.

The WRG specifies that bodies of water are classified along the river basins that are responsible for the drainage of national water bodies: the Danube, Rhine, and Elbe Rivers. For purposes of planning and coordination, these river basins are further divided into planning areas. The WRG provisions and subsequent regulations require the competent ministry to publish a new River Basin Management Plan⁴⁵ (NGP) once every six years. The scope of an NGP is to balance the interests regarding the development of living and economic conditions in river basin areas in the best possible way, satisfy diverging interests, and to enable water planning to institute fair, cost-effective access to conservation and melioration of water bodies. Water users are charged according to the Polluter Pays Principle.

Water management – water conservation

The basic laws for protection against threats emanating from bodies of water are found in sections 4 and 6 of the WRG. Based thereon, the relevant regulations are the **Regulation on National Flood Risk Management Plan (FRMP)** and its annexes, including a list of areas of potentially significant flood risk (APsFR), the **Regulation on Water-specific Hazard Zoning, Technical Guidelines for the Federal Hydrological Engineering Administration (R/WA-T)**, and **Technical Guidelines for Mountain Stream and Avalanche Defence (TRL-WLV)**. Furthermore, the **Hydrologic Engineering Promotion Act** is relevant for funding protective structures.

Beyond the competence of the federal government, state governments are responsible for matters of **disaster control**, construction of protective structures etc.

Based on the federal legislation, in the case of international river basins, the competent minister shall pursue collaboration with other affected nations by means of bi- or multilateral water body commissions to create a single, internationally accepted **National Flood Risk Management Plan (FRMP)**. If an agreement is not reached, the individual FRMPs should at least maintain some degree of international coordination. If the measures proposed in the FRMP significantly increase the risk of flooding in other riparian nations of the specific river basin in question, they shall only be included if a mutually agreeable solution is reached. There is only one provision that partially touches on the issue of measures that reduces the magnitude of a flood waves in order to protect downstream areas. The **FRMP** mentions the possible benefits of an early water level reduction in reservoirs when developing operating rules for hydropower plants, including periodical coordination with the relevant disaster control plan. For areas of potentially significant flood risk, an **FMRP** has to be created by the competent ministry. A regulation on water-specific hazard zoning determines the requirements regarding content, form and design of hazard zoning measures that must be taken for any APsFRs not yet covered by the **FRMP**. It must be updated once every six years. It provides an overview of the implementation status of a set of 22 constructive and awareness-raising measures for the prevention of floods in all APsFRs.

Harvesting flood waves is also part of the federal legislation. There is only one provision that partially touches on the issue of measures that reduces the magnitude of flood waves in order to protect downstream areas. Measure M13 A) of the FRMP mentions the possible benefits of an early water level reduction in reservoirs when developing operating rules for hydropower plants, including periodical coordination with the relevant disaster control plan. The competent authority is empowered to require the owners of riparian properties to make certain interventions to protect a water body or implement flood prevention measures on their section of the shoreline. Flood monitoring, predicting and warning systems, as well as flood disaster protection plans must be established that also consider drainage studies and hazard zoning⁴⁶.

For cases of immediate danger, **WRG** specifies that if the prevention of dam or riverbank failure requires immediate action, the competent authority is enabled to engage any capable individual available within the

⁴⁴ 1. AEV kommunales Abwasser

⁴⁵ Nationaler Gewässerbewirtschaftungsplan

⁴⁶ Measures M17 and M18 of the FRMP

municipality without compensation. Moreover, any necessary equipment and materials may be sequestered under the obligation of appropriate compensation.

The **Regulation on the Registry of Emissions** (Emissionsregisterverordnung, EMREGV-OW), all significant polluting impacts on surface water bodies originating from point sources authorised under water legislation must be measured and recorded by the operator in a dedicated registry.

General Regulation on Sewage Emissions (Allgemeine Abwasseremissionsverordnung, AAEV). The code specifies general qualitative emission limits and requires the enactment of individual sewage treatment regulations for a vast, highly fragmented array of industries. These specific regulations (AEVs) provide individual emission limits for the respective industrial sectors. Each wastewater stream is tracked individually, even if they originate from different operational segments within one production facility. One of the specific AEVs concerns wastewater from livestock farming, and explicitly prohibits the discharge of liquid manure into running waters or municipal sewers. In compliance with emission limits and potentially necessary pre-treatment measures, wastewater from commercial, industrial, agricultural or other facilities shall be treated together with municipal wastewater. Furthermore, emissions from municipal sewage treatment plants are covered in separate regulation (1. AEV kommunales Abwasser).

The flood prevention and notification system

Flood warning is a matter of state competence. Water levels are monitored by individual state hydrographical agencies. In case of imminent flood danger, the agencies provide information to the states warning centres who are responsible for the notification of the local population and the initiation of emergency operations. If an international border is affected, the Federal Environmental Liability Act requires notification of the affected EU member state by the competent district administrative authority. State Warning Centres are responsible for immediately forwarding information about potential transboundary disasters to the Federal Warning Centre (located at the Ministry of Interior) and neighbouring nations (e.g., § 6 Disaster Relief Act of Lower Austria).

Both the State and the Federal Warning Centres are available 24/7. In case of disasters, the Federal Warning Centre acts as the primary information hub for national disaster management, as well as for supra-regional and international civil defence and disaster control. Some states require the competent district administrative authority to prepare special emergency plans for industrial plants that exceed the threshold quantities for dangerous materials⁴⁷. For example, the Disaster Management Act of Tyrol requires such special emergency plans to include measures on the notification of foreign fire departments and organisations in case of accidents with potential cross-border effects.

Waste management

The **Federal Constitutional Act** declares that legislation on hazardous waste falls under the jurisdiction of the Federal Government. Regarding other, non-hazardous waste, the Federal Government's jurisdiction only applies if there is a need to issue uniform requirements (also termed as 'authority in case of need'). When the state government fails to use its powers, when necessary, the federal government steps in. The **Waste Management Act** of 2002 (WM) and the regulations thereunder summarise the basic areas of regulation of hazardous and non-hazardous waste. The WM is based on the Precautionary Principle and Principle of Sustainability with objectives to protect humans and the natural environment, minimise air pollution and gases relevant to climate change, conserve resources, ensure that recovered materials are not more hazardous than the primary raw materials, and to deposit the waste from waste treatment in a manner that is safe for future generations. The WM Act is based on the waste hierarchy of the EU Waste Framework Directive. Ecological and economic factors need to be considered when applying this hierarchy. The WM Act sets requirements about the development of a Federal Waste Management Plan and a Waste Prevention

⁴⁷ It defined in Annex I of the EU Directive 2012/18 on the Control of Major Accident Hazards Involving Dangerous Substances (Seveso-III Directive.)

Programme every six years. It also regulates obligations for the collection, processing, storage and transportation as well as import, export and transit of waste.

The *WM* defines Extended Producer Responsibility principles and obligations for the management of packaging waste according to the EU Packaging and Packaging Waste Directive (PPWD), as well as obligations regarding the management of industrial and commercial waste. Household packaging waste⁴⁸ is generated in private households, or in institutions e.g., restaurants, hotels, administration buildings, hospitals, educational institutions, sports facilities that generate similar packaging waste streams. *WM* also defines legal bodies responsible for the management of packaging waste — producers and importers of packaging waste and packed goods — and requires them to participate in the approved collection and recovery system for household packaging (except for returnable/deposit-return packaging). Producers and importers of disposable dishes take part in the licensed collection and recovery system for household packaging. *WM* foresees a ban on the free supply of plastic carrier bags to final consumers, minimum charges for the supply of plastic carrier bags, as well as recording and reporting requirements on the quantity of plastic carrier bags placed on the market.

WM also states that the operation of waste collection and recovery systems is subject to approval by the Federal Ministry of Sustainability and Tourism (10-year permit period). Among other requirements, collection and recovery systems must spend 0.5% of their income fees for waste prevention projects.

The most relevant provisions for the operation of household and commercial packaging waste collection and recovery systems (collection systems) are as follows. A collection system must ensure full area coverage in each political district within a reasonable distance for consumer access (for household waste — since 01 January 2018 each municipality must have at least one separate collection possibility for each separately collected type of waste); a collection system for household packaging must conclude agreements with municipalities for the compensation of costs to municipal operators for collection and recovery of collected packaging waste; collection systems for household and commercial packaging are required to electronically submit monthly data about the amount of packaging introduced on the market by system participants; and analysis of the amount of market-input of plastic waste and the share of plastic waste in the household waste must be carried out in all federal states every three years.

Other section of *WM* contains provisions about the **Packaging Coordination Agency**⁴⁹ (VKS) that can take over coordination obligations for financial compensation and informing end consumers, cooperation on cost-efficient organisation of packaging collection, management of the electronic database of commercial packaging waste, conducting waste analyses, and legal control and oversight.

Regulations concerning waste disposal

The **Landfill Ordinance**⁵⁰ introduces limits for the contents of municipal, commercial, industrial, and construction and demolition waste to be allowed for disposal in a landfill. In order to be allowed in a landfill, wastes must present a **TOC value** (total organic carbon) of 5 % or less by weight in order to reduce the production of methane and acid leachate during organic decomposition. This landfill restriction subsequently became referred to as the 'TOC ban'. Organic wastes must be treated prior to landfill, either via thermal treatment or mechanical-biological treatment (MBT). The output from an MBT may only be landfilled if its calorific value is 6,600 kJ/kg or less. In practice, this means that the higher calorific portion of the waste (especially plastic) that enters an MBT plant must be mechanically separated and sent to thermal treatment for energy recovery. In addition to the limit values, landfill taxes were introduced that are making landfilling a more expensive option than incineration. In 2015, 71% of plastics wastes in Austria were incinerated, 28% recycled and 1% landfilled (UBA 2017).

⁴⁸ Size criteria: area $\leq 1.5 \text{ m}^2$: in the case of hollow containers, a nominal filling volume ≤ 5 litres; in the case of expanded polystyrene packaging (EPS) a mass $\leq 0.15 \text{ kg}$ per sales unit

⁴⁹ Verpackungskoordinierungsstelle

⁵⁰ Landfill restrictions were established in Austria in 1996 via the Landfill Ordinance, entered into force in 1997. Seven years were given for total compliance with the new landfill infrastructure (2004). The latest amendment to the Landfill Ordinance was passed in 2016 (BGBl. II Nr. 291/2016)

Only treated waste may be landfilled⁵¹. This does not apply to inert waste or other waste whose proper management, taking into account the principle of proportionality, does not contribute to reducing the quantity of waste or the risk to human health or the environment. The mixing or blending of a waste with other wastes or objects is impermissible if the investigations required pursuant to this Ordinance or the required treatment are impeded or hindered, or if the waste acceptance criteria are only met by the mixing process.

Regulations restricting/sanctioning illegal dumping

The **Criminal Code**⁵² (StGB) provides information on sanctioning of intentional environmentally hazardous treatment and transfer of waste. Any person who, in contravention of a statutory provision or an official order collects, transports, recovers, disposes of waste, or supervises these activities or controls them in such a way that is poses serious bodily harm or endangers the life of another person (section 84(1); otherwise endangers the health or physical safety of many people; or if the cost of removal exceeds 50,000 Euro, they shall be punished by imprisonment for a term of up to two years. If the offence causes substantial damage to the animal or plant population; a long-term deterioration of the condition of a body of water, the soil or the air; or disposal costs exceed 50,000 Euro, the offender shall be punished with imprisonment for up to three years.

Which organisations can act, and what tools can they use if considerable amounts of waste enter a river?

Unless the Water Rights Act contains other provisions on jurisdiction, the district administrative authority is responsible in the first instance. In Vienna, these tasks are performed by the Water Law Department (MA 58).

The Sea and River Service (also Sea and River Police, in Vienna the Water Police) of the Austrian Federal Police is responsible for maintaining public safety and order on the waters of the Republic of Austria. In particular, the tasks of the sea and river service include hazard investigation and assistance on water, as well as investigations of ship and boat accidents. There are currently 33 offices of the Federal Police throughout Austria, which, in addition to their general duties, also perform maritime police tasks. Six of these stations are located on Austria's largest river, the Danube. In total, the police officers of the maritime and river service throughout Austria have access to about 50 different watercrafts.

In case of imminent danger to water or groundwater, the fire brigade may also be called in. Measures may only be taken by order of the Water Authority. In order to assess which measures are necessary, the Water Authority generally makes use of the Water Supervisory Authority and official experts.

Nature conservation

In Austria, nature conservation is the responsibility of the nine federal states. They are responsible for the management of protected areas, monitoring of generally protected habitats and the implementation of conservation programmes for species and biotope protection. However, hunting, fishing, national parks and spatial planning are also within their remit. European Union Directives (e.g. the Birds Directive and the Habitat Directive) have been transposed in many provincial laws in each of the nine provinces.

In Austria, many valuable habitats are also generally protected, i.e., without special designation. In large parts of Austria these include wetlands, water bodies and their riparian areas, as well as alpine biotopes and glaciers. There are protected areas prescribed by law on 25% of Austria's national territory. The most common types of protected areas are 'nature reserve', 'landscape conservation area' and 'natural monument'.

International protected area categories

International Union for Conservation of Nature (IUCN) Conservation Categories Ia and Ib – IUCN category Ia is the strictest protection category. An area in this category must remain free from human interference of any kind and may only be entered for research purposes. IUCN category Ib areas are large, protected areas,

⁵¹ § 6 of the Landfill Ordinance subsection (1)

⁵² Strafgesetzbuch, Section 181b

mostly surrounding Ia areas, which should largely remain free from human interference of any kind. Although they may be entered, they are not suitable for tourist recreation areas because of the strict regulations. **National park** is a large-scale protected area with particularly valuable natural habitats that are barely influenced by humans. International nature conservation obligations and nature conservation conventions binding under international law apply in national parks. They are permanently established as protected areas by the federal and state governments according to IUCN criteria. In contrast to the protection category above, the focus here is on recreation and environmental education. There are six national parks in Austria, covering 2,382 km² or 2.8 % of the country.

Ramsar sites are protected areas for wetlands of international importance according to the Ramsar Convention (1971). The intention of this international treaty is to protect waterfowl and wading bird habitats. A declaration of a Ramsar site is not a concrete legal instrument, but a 'seal of quality'⁵³. In Austria, 22 sites covering 1,200 km² have been designated Ramsar sites, or 1.5 % of the area of Austria. Floodplains of the Morava–Dyje–Danube Confluence are covered by this convention.

Biosphere reserves or biosphere parks are model regions for sustainability. They are recognised by UNESCO as exceptional natural and cultural landscapes. People are a central element in biosphere parks. This is an essential difference to other protected areas such as national parks. In Austria, there are currently 6 biosphere reserves covering 3,028 km² (3.6%).

European protected area categories

In Austria, the term European protected area refers to several categories of protected areas that pursue the goal of permanently safeguarding Europe's natural habitats. Essentially, these are areas in the EU Natura 2000 network established for the protection of biotopes and species. European protected areas also include biogenetic reserves, European Diploma areas and the protected area of the Alpine Convention.

Individual federal states alone select suitable areas and anchor them in nature conservation, hunting, fishing and spatial planning laws (an exception is the national parks, which represent a joint federal-state agreement according to Art. 15a B-VG).

A coherent, Europe-wide system of ecological protected areas called the Natura 2000 Network. There are 220 Natura 2000 sites in Austria (as of May 2012). At the end of 2017, a total of 204 Natura 2000 sites were designated in Austria, as well as around 90 European protected areas from other categories.

In Austria there are clear national efforts to designate biogenetic reserves. These are coordinated by the Federal Environment Agency. Fifty-six biogenetic reserves exist, covering a total area of 1,730.5 km² or 2.4% of the federal territory. These are also areas designated under provincial law, some of which are also Natura 2000 sites. Two areas have only partial protection. No reserves have been designated in Vienna or Vorarlberg.

The European Diploma is awarded by the Council of Europe for areas of special importance for the conservation of biological diversity or landscape diversity in Europe. The Diploma is valid for five years. After that, it is reviewed whether a renewal is justified. The sites must already be under legal protection. Wachau and the Krimml Waterfalls have been awarded the European Diploma.

National protected area categories

A **nature reserve** is a largely natural or near-natural area with habitats worthy of protection and/or with rare or endangered animal and plant species. The protection of these natural assets is of primary importance. Interventions that are incompatible with the conservation objective should be prevented. This type of protected area is one of the most important categories of land protection in Austria. Although in principle any interference with nature is prohibited in nature reserves, as a rule, agricultural and forestry uses are permitted 'to the extent hitherto existing'. There are 481 nature conservation areas in Austria.

⁵³ Therefore, most Ramsar sites, particularly peatlands and watercourses and their immediate marginal zones, are also protected by a national legal protection category or are at least protected in principle by environmental law (ex-lege protection).

Natural monument⁵⁴ is a protected natural structure (e.g. a tree, a cave, a gorge) and is primarily of local or regional importance. No interventions or alterations may be made which could impair the existence, appearance, characteristic features or the scientific and cultural

Nature parks comprise landscape areas which are particularly suitable for recreation and for imparting knowledge about nature. It is not a protection category, but an assertion awarded to nature conservation or landscape protection areas. However, nature parks are legally anchored in the respective provincial nature conservation laws. There are currently 50 nature parks in Austria with a total area of around 4144 km².

A **landscape conservation** area is not primarily aimed at species or biotope protection but is intended to protect the general appearance of landscapes. These can be characterised by near-natural agricultural and forestry management, such as alpine pastures and larch meadows. They often serve as buffer zones around nature conservation areas since they are subject to stricter protection regulations. In Austria, there are 249 landscape protection areas⁵⁵.

Nature conservation and landscape protection serve to protect and sustainable use the landscape, including its flora and fauna, as a basis for life. To achieve this goal, areas relevant to nature conservation are placed under protection. Maintenance measures and public relations work including information campaigns and environmental education is also carried out. Protection measures are not limited to natural landscapes or selected areas of the cultural landscape. The aim is the holistic protection of nature and landscape through their care, development and use.

Bilateral and multilateral agreements and cooperation protocols

As river basins and groundwater bodies are divided by national borders, a significant part of water management problems can be effectively addressed by cross-border cooperation. Austria is party to several bilateral water cooperation agreements with neighbouring countries, as well as multilateral global water conventions. Already on 1 January 1859, an agreement between Austria and Bavaria came into force, covering the regulation and management of the river Inn from its confluence with the Salzach at Rothenbuch to the point where it flows into the Danube at Passau.

The **Helsinki Convention** on the Transboundary Effects of Industrial Accidents requires Austria to immediately report any potentially critical situations to potentially affected neighbouring nations at appropriate levels of government. Also, it provides the option to create common systems of notification, warning and alert.

Bilateral Agreements on Hydropower Production

“Agreement between the Austrian Federal Government and the Bavarian State Government concerning the Diversion of Water in the Rissbach, Dürrach and Walchen District” in the year 1951 focusing on Hydropower Production followed by a specific agreement for the Danube Powerplant Jochenstein (signed 13.02.1992) also between Austria and Bavaria. “Agreement between the Federal Government of the Republic of Austria and the Government of the Free State of Bavaria concerning the regulation of the Hydropower Production on the River Saalach” (entered into force 20.07.1959)

Bilateral Agreements on River Regulation

Treaty between the Republic of Austria and the Swiss Confederation for the regulation of the Rhine from the Ill confluence to Lake Constance (entered into force 22.07.1955)

Bilateral Agreements on quantitative and qualitative protection of water resources

“Convention concerning Water Economy Questions relating to the Drava” between the contracting parties Austria and Slovenia (entered into force 15.01.1955). “Agreement concerning Water Economy Questions in respect of the frontier sector of the Mura and the frontier waters of the Mura” between the contracting parties Austria and Slovenia (entered into force 09.02.1956). “Treaty between the Hungarian People’s

⁵⁴ Natudenkmal

⁵⁵ Source - 2011, Federal Environment Agency.

Republic and the Republic of Austria concerning the regulation of Water Economy Questions in the Frontier Region” (entered into force 31.07.1959). “Convention between the Land of Baden-Württemberg, the Free State of Bavaria, the Republic of Austria and the Swiss Confederation on the Protection of Lake Constance against Pollution (entered into force 10.11.1961). “Treaty between the Republic of Austria and the Czechoslovak Socialist Republic concerning the Regulation of Water Management Questions Relating to Frontier Waters (entered into force 18.03.1970). “Agreement between the Republic of Austria on the one hand and the Federal Republic of Germany and the European Economic Community on the other on Cooperation in the Field of Water Management in the Catchment Area of the River Danube (entered into force 1.3.1991)

Bilateral Agreements on Water Supply

Agreement between the Federal Republic of Germany, the Republic of Austria and the Swiss Confederation regulating the withdrawal of Water from Lake Constance (entered into force 25.11.1967)

Slovakia

Surface water conservation

The main **water protection** legislative frameworks are the Water Act⁵⁶ and the Act on Offences and other binding regulations that transposed the EU Water Framework Directive (WFD) into Slovak legislation. Water protection legislation regulates the obligations of an entrepreneur (person or legal person) who handles water. The essential water planning document for the protection and improvement of the status of surface and ground waters and ecosystems is the Water Plan.⁵⁷ The Water Act considers wastewater from mining activities to be surface water or groundwater unless a special regulation⁵⁸ says otherwise. Government Regulation no. 269/2010 Coll. lays down requirements to achieve good water status.⁵⁹ It also provides inter alia requirements designed to determine long-term and short-term changes in surface water quality and assess surface water quality and water use trends. In addition, the regulation covers surface water quality objectives regarding drinking water extraction, water intended for irrigation and water suitable for the life and reproduction of native fish species, the monitoring scope,⁶⁰ classification of the good ecological status of surface waters, the good chemical status of surface waters and good environmental potential of surface waters.⁶¹

Regulations for water discharge from surface water runoff are based on the Decree for Achieving Good Water Status⁶². An entrepreneur who handles water for production purposes is obliged to adjust production technology and take measures for the multiple uses of water.

Water quality in watercourses is monitored based on data from measuring stations located in estuaries. The assessment of surface water quality compliance is monitored⁶³ under the general requirements for water quality. The evaluated indicators fall into the following categories: general indicators (43 indicators); non-synthetic substances (8 indicators); synthetic substances (58 indicators); radioactivity indicators (7 indicators); and hydrobiological and microbiological indicators (9 indicators). Indicators of **drinking water quality** and their control are established by a special regulation⁶⁴ that sets quality water standards for human consumption. This regulation was amended by Regulation no. 496/2010 Coll.

Pollution in **communal wastewater and sewage discharges** for substances must be below permissible limits. If the substance is not listed, emission limits can be set.⁶⁵ Emission limits for pollution in wastewater (sewage

⁵⁶ Act no. 364/2004 Coll.

⁵⁷ § 14 Act no. 364/2004 Water Law

⁵⁸ Act No. 44/1988 Coll. On the Protection and Utilisation of Mineral Resources, the Mining Act

⁵⁹ Amendment No. 398/2012 Coll.

⁶⁰ § 2 Annex II

⁶¹ §4

⁶² Decree no. 269/2010

⁶³ Accordance with Government Decree 269/2010

⁶⁴ Regulation of the Government of the Slovak Republic no. 354/2006 Coll.

⁶⁵ Government Regulation no. 269/2010 Coll. Annex 5

and municipal effluents, industrial effluents and special waters discharged into surface water) and waters requiring special treatment are listed.⁶⁶

Discharging of **industrial waters** containing particularly harmful substances is regulated by Regulation no. 269/2010 Coll.⁶⁷

Act no. 364/2004 Coll.⁶⁸ Sets pollution limits for harmful substances in **industrial wastewater** discharged into surface waters.⁶⁹ When discharging wastewater from an industrial source, the priority hazardous substances contained in it must be gradually reduced with the ultimate goal of stopping their discharge altogether.⁷⁰ The discharge of industrial wastewater or special water into the public sewage system that contains priority hazardous substances listed in Annex no. 1, List II and other pollutants in List III requires a permit from the State Water Administration Body.⁷¹

Drinking water

Drinking water quality and its management is established in ACT no. 354/2006 Coll.⁷² Extraction of more than 15,000 m³/year, or more than 1,250 m³/month from a single surface or groundwater source to satisfy the needs of households or other water users requires a permit from the state water administration body (District Office). Preparation of a report calculating groundwater quantities or geothermal energy must also be submitted for approval by the Ministry of the Environment.⁷³ If the individual or legal person extracts surface or groundwater⁷⁴ for their own use, they are obliged to report certain data specified in the permit to an authorised person who will provide them to the administrator of significant watercourses⁷⁵ annually.⁷⁶

River Basin Management Plans (RBMP)

The procedures for the elaboration, reassessment, and updating of river basin management plans (RBMP) are contained in the Water Act⁷⁷. Slovakia is currently finalising and updating its Water Management Plan II. Meanwhile, preparations are underway for Water Management Plan III. The preparatory works include creating a Supportive Instrument for the national implementation of the WFD, the Habitats Directive and the Natura 2000 network. Revitalisation of 'good ecological status' (GES) and corrective 'good ecological potential' (GEP) measures to selected water bodies are also incorporated in the RBMPs. A selection of priorities for 2021-2027, with a particular focus on modified water bodies, is in progress. This process will determine the areas where revitalisation is needed most urgently, and identify obstacles such as the need for flood protection or permitted extraction and discharge that could slow down or prevent the revitalisations

Prioritisation of water bodies for revitalisation is based on the list of water bodies from the 2013-2018 assessment⁷⁸ according to the rating system and classified in accordance to indicators such as their ecological status or potential Natura 2000 status, selection as a Ramsar site, hydro-morphology, hydrological conditions, degradation of flow, the level of physio-chemical quality disturbance, synthetic and non-synthetic substances, and fragmentation of longitudinal river connectivity, habitats etc. Particular attention is given to the Areas of Special Protection, namely nature protected areas of national and international importance. Currently, 169 water bodies have been given highest priority for revitalisation, and these will be part of the Water Plan update.

The Water Policy Concept for 2021-2030 with a view to 2050 is also under preparation. The concept is prepared based on a government programme. The resulting document defines e.g. water protection and use

⁶⁶ Act no. 269/2010 Coll. Annex 6

⁶⁷ § 8 Decree no. 269/2010 Coll.

⁶⁸ Section 17 (4) of

⁶⁹ Annex no. 10 to the Government Order no. 269/2010 Coll.

⁷⁰ Section 17 (4) of Act no. 364/2004 Coll.

⁷¹ Slovak Environmental Inspectorate in the process of Integrated authorization

⁷² Amended by Government Regulation of the Slovak Republic no. 496/2010 Coll.

⁷³ § 21 par. 1 letter (a) of the first point, point (b) the first point and point h) to j) Act no. 364/2004

⁷⁴ § 21 par. 1 letter (a) of the first point, point (b) the first point and point h) to j) Act no. 364/2004

⁷⁵ Decree no. 2011/2005 Coll. establishing a list of significant watercourses

⁷⁶ § 21 par. 2 letter b) and c) Act no. 364/2004

⁷⁷ Act no. 364/2004 Water Act 13§

⁷⁸ updated in WP II – Annex 5.1

to ensure the safety of water and aquatic ecosystems, development of water resources for human needs, restoration of damaged water bodies and prevention of water pollution. It also focuses on the protection and restoration of natural floodplains, wetlands, the preservation of natural, free-flowing sections of watercourses and the revitalisation of regulated sections of streams.⁷⁹

Water management – water conservation

The Act on Flood Protection⁸⁰ addresses flood risk management. The Act stipulates that development, review and updating of the first flood risk management plans shall be carried out in coordination with the River Basins Management Plans under the WFD. Therefore, this represents a comprehensive strategic framework for integrated River Basin Management. The preliminary flood risk assessment is undertaken in accordance with the provisions of Act no. 7/2010;⁸¹ whereas flood risk assessment, reassessment and updating is undertaken throughout the whole country in ten defined sub-basins by the administrative bodies of the Danube and Vistula basins.⁸²

Flood protection measures

Flood protection measures include a Flood Risk Management Plan, Flood Protection Plans, flood risk controls, the Flood Forecasting Service, a Flood Early Warning Service and Flood Safety Patrol Service. A Flood Risk Management Plan⁸³ addresses flood risk management objectives for the geographical areas of a sub-basin with significant potential flood risk. A Plan focuses on limiting the adverse impacts of floods on human health, environment, cultural heritage or economic activity. It includes preventive, protection and preparedness measures (flood forecasting and early warning systems). Preventive measures can be changes in tillage practice, construction of reservoirs, afforestation, revitalisation of flow meanders, water retention in basins and settlements, preservation of natural meanders and inundations, construction or dry polders for the retention of water in settlements etc. Other measures could include the construction of fencing, flood barriers, mobile flood defence walls, bypasses, rainfall ditches, dredging of riverbeds, relocation of dikes etc. Measures must not worsen groundwater's quantitative status or create conditions for accelerating surface runoff or subsurface runoff from the slope by excessive artificial accumulation of groundwater and soil water or quicken the process of soil erosion.⁸⁴

A proposal for long-term measures has been prepared based on the spatial data from the Landscape Ecological Base for integrated landscape management.⁸⁵

The Flood Risk Management Plan as well as the River Basin Management Plan must be coordinated with other spatial planning tools, especially with Land Management Projects, Land Use Plans and Forest Management Plans, with which they form an Integrated Land Management Tool in the whole area of River Basin District.⁸⁶

Currently, grey infrastructure measures such as the construction of dikes prevail over nature-based solutions. Plans, for instance, do not envisage the restoration of wetlands or the connection of disconnected branches, which reduce the risk of floods to a sufficient extent. A **Flood Plan** is a document of an organisational and technical nature and consists of a flood security plan and a flood rescue plan. Currently, the Flood Protection Plan is being updated with respect to the estimated risks of floods covering 559 localities.

Flood Inspections⁸⁷ may be carried out simultaneously with the performance of professional technical and safety supervision on water structures, at least twice a year and immediately after a flood incident.

⁷⁹ Government Resolution No. 239/2020

⁸⁰ 71/2010 Coll. as amended by Act no. 180/2013 and 71/2015 Coll.

⁸¹ § 5 par. 3

⁸² § 11 par. 4 and 5 of the Act no. 364/2004 Coll. on waters

⁸³ § 8 Act no. 7/2010 Coll.

⁸⁴ § 8 par. 8

⁸⁵ § 5 par. 2 Act no. 7/2010

⁸⁶ § 9 Act no. 7/2010

⁸⁷ § 13 Act no. 7/2010

The 2000-2010 **Flood Protection Programme**, updated 2020⁸⁸ contains systemic measures and a list of approximately 300 investments needed for structures and measures in river basins across the country. Part of this programme is also the construction of a Flood Warning and Forecasting System (POVAPSYS).

Flood prevention and notification system

The **Flood Warning and Forecasting System** (POVAPSYS) was approved by the government⁸⁹ and incorporated into the Concept of Water Management Policy in 2015. The legislative basis for ensuring the operation of POVAPSYS was created by Act no. 7/2010 on flood protection⁹⁰. The Flood Forecast Service provides information on the meteorological situation and the hydrological situation, flood risk, the occurrence of floods and the further possible development of meteorological and hydrological conditions that affect the course of a flood.

The **Hydrological Prediction System** against Floods (HYPOS) is a software system that integrates the inputs and outputs from POVAPSYS. HYPOS integrates operational information from domestic and foreign sources for the purposes of hydrological forecasts, flood warnings and predicting torrential floods with less than an hour advanced notice. This system exchanges information and cooperates with similar systems in neighbouring states.

The **State Hydro-Meteorological Service** (SHMU)⁹¹ performs a flood forecasting service and tries to accurately inform the responsible authorities via POVAPSYS on the possible locations of the sudden risky meteorological situations and expected flood situations in accordance with the models of current runoff conditions on the sub-basins.

The Plan describes three levels of flood activity: I. Vigilance; II. State of Emergency; and III. Threat.

The State of Emergency and Threat levels are declared by the watercourse administrator, a Slovak water management enterprise (SVP, š. P.), or are based on a mayor's proposal, heads of the district environmental offices or regional environmental offices. The management of watercourses is performed by the water management administrator for significant watercourses,⁹² which is a state professional organisation of the Ministry, and the administrators of small watercourses. The water management administrator for a significant watercourse or authorised person ensures the elaboration, reassessment, and if necessary, updating of the flood risk map.⁹³ In the case of transboundary watercourses, the Minister of Environment declares the II. And III. Levels of flood risk.

Waste management

Slovak waste legislation is quite complex. The legal instrument at the top of the hierarchy in the field of waste management is Act No. 79/2015 Coll. And its implementing Decree no. 371/2015. This Act also introduced the Polluter Pays Principle and Extended Producer Responsibility (EPR) into Slovak waste legislation and practice in 2018. The Act on Fees for Waste Disposal defines the fee obligation, determines the calculation of fees for the deposit of waste at a landfill and a sludge pond, and establishes the Environmental Fund as an entity to which landfill operators and sludge operators pay revenues from fees for depositing waste.

The Waste Act regulates waste management documentation, waste prevention measures, the rights and obligations of legal persons and physical persons in the prevention of waste generation and in waste management, extended producer responsibility, etc. Waste is sorted, organised and reported according to the waste catalogue.⁹⁴ The most recent amendment of the Act⁹⁵ regulates the obligations for the collection

⁸⁸ Government Resolution no. 31/2000 Coll.

⁸⁹ POVAPSYS is part of the Flood Protection Programme of the Slovak Republic until 2010, approved by Resolution no. 31/2000, and updated by Resolution no. 25/2003.

⁹⁰ Namely § 4 par. 2 letter h) of the Act (where the preventive measures for protection against floods also include the performance of the forecast flood service), which is followed by § 14 par. 1 of the Act.

⁹¹ Act no. 201/2009 Coll. on the State Hydrological Service and the State Meteorological Service (§ 4 para. 3)

⁹² Decree 2011/2005 establishing a list of significant watercourses

⁹³ § 7 (2) Act no. 7/2010 Coll.

⁹⁴ Decree no. 365/2015 on Waste Catalogue

⁹⁵ Ammended by Act no. 409/2019 Coll

of mixed waste or separate collection of municipal packaging waste and municipal waste from non-packaging products.

The model of waste collection in Slovakia

Separate collection of waste is based on the principle of Extended Producer Responsibility (EPR). The EPR concept is also covered in Government Decree no. 375/2015 Coll. On the Extended Responsibility of Selectively Collected Waste Streams⁹⁶ and the Management of Waste Streams. EPR applies only to manufacturers of selectively collected waste streams and not to industrial waste.⁹⁷

The person who collects the selective waste stream is obliged to have a contract with the relevant Producer Responsibility Organisation (PRO), the relevant third party or the producer of the relevant selectively collected waste stream. By concluding a contract for the fulfilment of obligations between the producer of the selectively collected waste stream and the relevant PRO, the responsibility of the manufacturer of the selectively collected waste stream passes to a PRO.⁹⁸ Duties and responsibilities of PROs for selectively collected waste streams and waste streams are detailed in Decree no. 373/2015. on Extended Producer Responsibility.

Financing of separate collection of the entire amount of collected waste in cities is provided by the fulfilment of this collective agreement. A PRO has to be non-profit organisation.⁹⁹ PROs are obliged to conclude contracts with all municipalities and cities in Slovakia so that local governments do not have to conclude individual contracts with producers and importers. Each PRO is licensed by the Ministry of the Environment which maintains a public register of these organisations. The producer of a selectively collected waste stream is also obliged to conclude a contract with the Coordination Centre according to the selective waste stream.¹⁰⁰ Coordination centres are entities which associate PROs with producers of selectively collected waste streams who fulfil their obligations individually.

Municipalities are responsible for the management of municipal waste and light construction waste in its territory. Municipalities with the annual production of municipal waste exceeding 350 tonnes, including light construction waste, or whose production exceeds 1000 tonnes must each prepare a Waste Management Programme.^{101 102} Municipalities must ensure the collection and transport of mixed municipal waste, provide collection containers (costs generally included in the local fee for communal waste), and implement separate collection of municipal waste components like paper, plastics, metals and glass that do not fall under Extended Producer Responsibility.¹⁰³

Industrial Waste

The management of industrial waste is regulated by the Waste Act¹⁰⁴ on Industrial Works and the implementing Decree¹⁰⁵ which also transposed the EU Directive on the Management of Waste from Extractive Industries.¹⁰⁶

The Ministry of Environment established a central information system (ISOH) that aims to unify and replace existing waste management information systems and create a method of effective electronic communication between individuals and state administration bodies. Above all, it aims to ensure the monitoring of the entire management process from generation to disposal or recovery. ISOH serves as the electronic registration database of existing waste and all entities that come into contact with waste from generators to processors. ISOH creates registers that can be consulted and provides information to the public on the treatment of

⁹⁶ A 'Selectively collected waste stream' or 'Selective waste stream' is a product belonging to the following product groups: packaging, non-packaging products, electrical equipment, batteries and accumulators, tyres, vehicles.

⁹⁷ Act no. 79/2015 Coll. Waste collection and waste purchase is detailed in § 16 of the Act on Waste

⁹⁸ § 27 (11) 79/2015

⁹⁹ for example ENVIPAK or NATURPAK

¹⁰⁰ § 29

¹⁰¹ § 10, par. 1

¹⁰² § 14 par. 1

¹⁰³ § 81 par. 7

¹⁰⁴ Act no. 79/2015 Coll.

¹⁰⁵ Act No.514/2008 Coll. on Waste Management from Industrial Works and the implementing decree no. 255/2010 Coll.

¹⁰⁶ Directive 2006/21/EC of the European Parliament and of the Council of 15 March 2006 on the Management of Waste from Extractive Industries

various waste streams, capacities, waste management authorities, waste management entities, or permits and issued authorisations (e.g., register of producers of selectively collected waste streams and collection sites).¹⁰⁷

Mining waste

The disposal of waste from the extractive industry outside the extractive industry landfill is prohibited. The operator must prepare a management plan and submit it to the competent authority for approval.¹⁰⁸ The management plan shall include the category of the repository, the procedures for minimising risks, a description of the waste characteristics and the total quantity envisaged during operation. Repositories shall be categorised according to the type of risk, the type, quantity and properties of the industrial waste deposited, the location of the repository, the local geological and environmental conditions and the risk of accidents. Category A landfills include landfills and sludge ponds that could have a negative impact on the environment if their parameters are not respected. There are currently three Category A landfills registered in Slovakia. Category B landfills are sites where predominantly inert, non-hazardous waste is deposited. There are currently 99 such landfills registered in the country.

Regulations restricting/sanctioning illegal dumping

Dumping of waste at unapproved sites is prohibited¹⁰⁹. The obligation to dispose of illegally deposited waste is based on the provisions of Act no. 79/2015 Coll. On Waste (§ 15). Waste Act states that persons illegally dumping waste can face a fine of up to EUR 1,500. In the event that the damage caused to the property owner from the illegal deposit of waste is greater than EUR 266, it is classified as a criminal offense¹¹⁰.

Permits

Only authorised persons may dispose of waste. Authorisation for an enterprise to treat waste is granted by the Ministry of the Environment. Each activity requires a separate decision. The authorisation is granted for a definite period of up to five years.

Which organisations can act, and what tools can they use if considerable amounts of waste enter a river?

The Water Act obliges anyone to report signs of extraordinary water pollution to the Slovak Environmental Inspectorate (Inspectorate), the district office, the municipality or to the watercourse administrator. The Inspectorate must notify the Basic International Warning Centre if extraordinary pollution is detected in transboundary waters.¹¹¹ The perpetrator of the pollution is obliged to take immediate measures to eliminate the waste, including dealing with the consequences of the pollution¹¹² such as disposal of leaked pollutants, monitoring groundwater and restoring the affected area.¹¹³ If the cause of the damage is not known or the person or legal person does not have its own means to implement remedial measures, and there is a risk of a negative impact on the environment, the state water administration body will implement the required actions. The Inspectorate is entitled to request the cooperation of state administration bodies such as the watercourse administrator, the authorised person, rescue services, municipalities or other legal entities and other persons.¹¹⁴

Reporting of illegal dumping

Any citizen can report or file a complaint against illegal waste dumps, pollution of waterways or the environment to the relevant department of the local authority (usually the Department of Municipal Activities and Environment – Department of Environment – Waste Management, Client Centre – Department of Municipal Activities and Environment, etc.) of the municipality in which the site is located.

¹⁰⁷ The launch was planned for 1 January 2021 but has been postponed indefinitely because of the Covid-19 pandemic.

¹⁰⁸ § 3

¹⁰⁹ Act of the National Council of the Slovak Republic no. 223/2001 Coll. on Waste § 18, Act no. 364/2004 Coll. on Waters § 31 etc.

¹¹⁰ Act No. 300/2005 Coll. Criminal Code; specifically pursuant to Sections 300 to 302 of the Criminal Code

¹¹¹ § 41 par.12 of the Water Act

¹¹² § 41 par.5 of the Water Act

¹¹³ § 41 par.7 of the Water Act

¹¹⁴ § 41 par.10 of the Water Act

A complaint can be made online, on paper, or in person. If the complaint is valid, the municipality informs the landowner to dispose of the waste properly. The municipality must receive notification in the matter of delegated competence¹¹⁵ as a competent administrative body. The district office can request that illegal dumpsites be removed and that measures be taken at the sites to ensure that the situation does not recur. The municipal government must initiate administrative proceedings and take all measures to rectify the damage which can be done in cooperation with the Environmental District Office.

If the authorities do not respond adequately to the complaint, a citizen can escalate it further by submitting the complaint to the Slovak Environmental Inspection Waste Management Inspection Department, local police department or the Presidium of the Police Force (Presidium of the Police Force, Criminal Police Office, Department for Detection of Hazardous Materials and Environmental Crime). The Ministry of the Environment has issued a document entitled 'Guidelines on How to Proceed in Finding Illegally Deposited Waste, so-called Abandoned Waste, which regulates the whole procedure.¹¹⁶

Nature conservation

The Nature and Landscape Protection Act¹¹⁷ defines wetlands as an area with swamps, bogs or peat bogs, wet meadows, natural running water or stagnant natural water, including a watercourse and a water area with ponds and reservoirs.¹¹⁸ According to the Special Regulation on Waters (and Amendment No. 372/1990 Coll. on Offenses) the consent of the nature protection authority and watercourse administrator is required to change the condition of a wetland. Such activities include backfilling, drainage, or extraction of reeds, peat, and mud and river material.

The Slovak Republic acceded to the Ramsar Convention on 2.07.1990. There are now 14 **Ramsar sites** in Slovakia, including e.g., Danube floodplains (14488 ha) – the system of river branches and natural biotopes in the transboundary region represents a rare inland delta with hydro-biological functions. The 4th Strategic Plan of the Ramsar Convention for 2016-2021 is currently in force.¹¹⁹ The Plan forms the basis for the elaboration of the update for Wetland Care Programme of Slovakia 2015 – 2021 and the Slovak Action Plan for Wetlands.

NATURA 2000 sites in the Slovak Republic cover 41 protected bird areas and 642 areas of European importance. Protected bird areas in Slovakia are set aside for 81 bird species of European importance, 66 habitats of European importance, 44 plant species habitats of European significance and 95 animal species habitats of European importance. Principles for the care of habitats and species of European importance in areas of European importance are outlined in Act on Nature and Landscape Protection.¹²⁰

According to the Act on Nature and Landscape Protection¹²¹, an area of European importance is where habitats of European importance or species of European importance are located, and for which protected areas are designated. The area can encompass one or more localities. The sites are added to a national list by the Ministry of Environment in negotiation with the Ministry of Agriculture.

Protected bird areas, including habitats of migratory bird species (nesting, wintering and resting places on their migratory routes) and habitats of bird species of European importance may be declared protected bird areas to ensure their survival and reproduction¹²². A protected water management area is regulated by the Act on Protected Areas of Natural Water Accumulation¹²³.

Rules concerning the protection, treatment, and management of special protection areas, and the framework of possible actions at the national, regional and local level

¹¹⁵ Act No. 416/2001 Coll. on the Transfer of Certain Competencies from State Administrative Bodies to Municipalities and Higher Territorial Units, as amended

¹¹⁶ <http://www.minzp.sk/oblasti/odpady-obaly/odborno-metodicke-usmernenia/>

¹¹⁷ Act no. 543/2002 Coll. on Nature and Landscape Protection, the implementing Decree of the Ministry of the Environment no. 24/2003 Coll.

¹¹⁸ § 2 letter g), Act no. 543/2002 Coll.

¹¹⁹ Approved at the 12th meeting of the Conference of the Parties to the Ramsar Convention.

¹²⁰ § 54 par. 4 letter b)

¹²¹ §26 par. 1 of Act no. 543/2002 Coll.

¹²² §26 par. 1 of Act No. 543/2002 Coll. on Nature and Landscape Protection

¹²³ Act no. 305/2018 Coll.

The Ministry of Environment is a competent authority for nature and landscape. The central bodies executing environmental policy are the District Environmental Offices and the Regional Environmental Offices of the Ministry. According to the Act on Nature and Landscape Protection for the whole territory of Slovakia applies 1st degree of protection. This Act and the relevant decrees on the zoning of Special Protected Areas (SPAs)¹²⁴ distinguish between five levels¹²⁵ of protection for Nature Protected Areas. SPA Categories include Protected Landscape Area – applies II. Level of protection, ('large-scale' SPAs); National Park – generally applies III. Level of protection, ('large-scale' SPAs); Protected Area – II., III., IV. Or V. level of protection; Nature Reserve, National Nature Reserve – with general IV. Or V. level of protection; Natural Monument, National Natural Monument – IV. Or V. degree of protection applies; Protected Landscape Element – II., III., IV. Or V. level of protection applies; Protected Bird Area; and General Protected Area. The owner of land which meets the legal conditions may apply to the Environmental District Office for a protected area, natural reserve or natural monument.

Bilateral and multilateral agreements and cooperation protocols

The Slovak Republic has bilateral agreements on water management, transboundary waters, protection, and rational water use, as follows:

- Agreement between the Czechoslovak Socialist Republic and the Republic of Austria on the Water Management Issues in Transboundary Waters;
- Agreement between the Government of the Czechoslovak Socialist Republic and the Government of the People's Republic Hungary of the on the Regulation of Water Management Issues in Transboundary Waters;
- Agreement between the Government of the Slovak Republic and the Government of Ukraine on Water Management Issues in Transboundary Waters;
- Agreement between the Government of the Slovak Republic and the Government of the Republic of Poland on Waterways and the Economy of Transboundary Waters;
- Agreement between the Government of the Slovak Republic and the Government of the Czech Republic on Border Water Cooperation;
- Agreement between the Slovak Republic and the Republic of Austria on Water Management Cooperation on Transboundary Waters (2001); and
- Agreement between the Government of the Slovak Republic and the Government of the Republic of Hungary on Border Water Cooperation.

The intergovernmental agreements cover cooperation on both nature protection and natural disasters such as floods. Moreover, commissions were established based on individual intergovernmental agreements and an intergovernmental treaty with Austria, Hungary, Ukraine, Poland, Czech Republic.¹²⁶ The goal of the Convention for the Protection and Sustainable Use of the Danube is to achieve the environmental protection of groundwater and surface water and guarantee their protection against accidents that may result in the release of harmful substances into the Danube River basin. The Convention attempts to ensure that surface and groundwater is used sustainably and equitably to preserve and restore ecosystems in the agreement area. The International Commission for the Protection of the Danube River (ICPDR) was established to implement the Convention. Another example of regional cooperation is between the Danube states under the UNESCO International Hydrological Program.

¹²⁴ The Act defines SPAs as localities in which habitats of European importance and habitats of national importance, habitats of species of European importance, habitats of national importance and bird habitats including migratory species for which protected areas are declared areas of significant international importance.

¹²⁵ Based on the state of habitats, the SPA can be divided into 4 zones: A for which the 5th level of protection applies, B for which 4th level of protection applies, C with 3rd level of protection and D with the second level of protection.

¹²⁶ Slovak-Austrian Boundary Waters Commission; Slovak-Hungarian Boundary Waters Commission; Slovak-Ukraine Boundary Waters Commission; Slovak-Polish Boundary Waters Commission; and the Slovak-Czech Boundary Waters Commission.

Hungary

Surface water conservation

According to the **Environmental Protection Act**, the usage of water resources must ensure sustainability, maintain conditions necessary for water-dependent habitats and organisms, and ensure efficient quantitative and qualitative conditions. The **Water Management Act** requires that all interventions in water conditions be carried out in a controlled manner, without harmful disruption of ecological conditions.

The quantitative and qualitative protection of surface water resources is interdependent. Quantitative water protection identified as water management includes river basin management system tools,¹²⁷ identification and classification of pollutants, identification of thresholds, and effluent and emission limit-values of pollutants. Licensing, prohibitions and obligations regarding direct discharges of pollutants, pollution reduction programmes, action plans, monitoring and identification of pollution sources are mainly used as preventative tools. The **Codex of Good Practice** is a requirement in the regulation of nitrate emissions from agricultural sources.

The protection of aquatic environments from accidental, harmful pollution is regulated primarily by **Government Decree 90/2007 (26.04.2007)**¹²⁸ (GD). The scope of the GD is intricate and broad and extends to surface water; groundwater and geological formations; species, as well as their breeding, moulting, wintering, and migration nesting areas,¹²⁹ species, as well as their specified natural habitats, breeding, wintering areas¹³⁰ protected and specially protected species; Natura 2000 sites; and national nature reserves and protected areas. The DG dedicates organisations and authorities that are obliged to prevent, remediate, and where appropriate, oblige the polluter to take remedial action and bear the costs of remediation. It aims to reduce emissions, prevent illegal human activity and enforce the **Polluter Pays Principle**. The Hungarian system of water quality remediation was designed in such a way that immediate interventions can be carried out in case of any environmental damage, thus averting later protracted remediation procedures. If the polluter is unknown, unable (or not adequately able) to take remedial actions, the assigned environmental, nature conservation, and water protection authorities entrust the work to public asset managers (e.g., water and national park directorates) that can carry out the adequate environmental remediation.

According to the **Government Decree on Surface Water Quality**¹³¹ permissible load indicates a level where the environmental objective¹³² can still be achieved given a certain permitted level of pollution. The definition of water pollution is the concentration of a pollutant resulting from a polluted water load. An emission limit value can be technological or territorial. The limit-value is the degree of pollutant wastewater content which can be discharged into the public sewer and into water bodies. An emitter who exceeds the emission limit value or emits a pollutant or a prohibited substance other than or over those specified in its permit, shall be liable to a sewer fine or water pollution fine. Those who commit criminal acts (e.g., operating without a permit) must pay a water protection fine. There may be other legal consequences, such as restriction, suspension or prohibition of polluting activities.

The **Water Utility Service Act**¹³³ aims to protect the national water utility assets. A water utility is a public water facility in charge of the public drinking water supply, including (licenced) services related to **drinking water** supply and sewerage management.

¹²⁷ River Basin Management Plans include, in accordance with the National Environmental Programme, activities and interventions that may affect the quantitative, qualitative and ecological status of the waters, as well as an analysis of these effects, measures and programmes to be taken to achieve good water status, monitoring programmes, best practices for non-point (diffuse) sources, designation of protected areas, protection zones, protection areas and assessment of water status, etc.

¹²⁸ Government Decree 90/2007 (26 April) on the Procedures of the Prevention and Remedying of Environmental Damage

¹²⁹ Article 4, section 2., and Annex I of the EU Birds Directive 79/409/EEC of 2 April 1979

¹³⁰ Annex II and IV of the EU Habitats Directive 92/43/EEC of 21 May 1992, together with special areas of conservation listed in Annex I

¹³¹ Government Decree 220/2004 (21 July 2004) on the Regulation of the Protection and Improvement of Surface Water Quality

¹³² The **environmental objective** is the ecological and chemical status of surface water to be achieved by a given date, the characteristics of which are determined by the relevant reference conditions and the Government Decree on Rules of River Basin Management.

¹³³ Act CCIX of 2011 on Water Utilities

The **Government Decree on Drinking Water Supply**¹³⁴ covers the regulation related to water reserves used to meet drinking water quality. The Decree intends that water reserves and water facilities shall be kept under enhanced protection. Frequently checked **limit values for drinking water quality** are given in Annex 1 of the Decree. A special feature is that more than 95% of this capacity of public drinking water depends on different types of groundwater. In Hungary, the public water supply is provided from just over 1,700 operating aquifers.¹³⁵ Hence, the Government made it a priority to adopt a target **programme to protect drinking water resources**. The water utility service covers municipal **sewerage**, and the collection, drainage, treatment, utilisation and disposal of treated wastewater.

The **agricultural use of wastewater, sewage, sewage sludge and sewage sludge compost** are subject to permits.¹³⁶ Only sewage, sewage sludge and sewage sludge compost may be used on agricultural land. Water pollution caused by nitrates stems from agricultural practices such as excessive use of fertilisers. In designated **nitrate sensitive areas**, organic fertilisers should be carefully managed.¹³⁷

The competent government agency authorises the use of **bathing water**,¹³⁸ indicates the duration of the bathing season, determines the schedule of sampling for the control of water quality, evaluates and classifies bathing waters and attributes protection zones around bathing areas to protect water quality. For industrial related regulations the control of major accidents is related to water quality remediation activities.

Flood control regulations

Hungary is particularly vulnerable to floods. The country's total floodplain area amounts to 21,200 km² (23%). Floodplains are part of the river valley that may be inundated by high floodwaters or being inundated by floods in case the river is confined between levees, 97% percent of the country's floodplain is bordered by a 4,200 km levee network. This area includes 1.8 million hectares of arable land, 32% of the rail network, 15% of the roads, more than 2000 industrial plants and 646 endangered settlements. The affected population is 2.3 million, and the total value at risk is about € 20 billion.

The main flood defences in the country along 4,327 km of rivers are comprised of 4,011 km of earth embankments, 30 km of floodwalls and 286 km of high banks. The General Directorate of Water Management (OVF) is responsible for 4,128 km of the main flood defences. The rest of the flood defences – 199 km – are owned and maintained by local municipalities. **Flood management plans** for rivers are specified in the **Water Management Act**, their planning is covered by Government Decree 83/2014 (24.03.2014). The aim of these plans is to reduce flood levels, maintain or repair the capacity of riverbeds, and to ensure flood safety protection. The main flood prevention methods are relocation of flood defence embankments, increase of floodplain area; elevation of flood defence embankments, dredging, rehabilitation of tributaries; transformation of river regulation works where possible; changing and optimising the type of farming; removal of summer dams from floodplains; and design of emergency reservoirs. Some other important aspects of high-water river basin management plans are e.g., designation of high-water riverbed areas, reviewing the already completed high-water riverbed entries to create new ones, and determination of further necessary regulations and interventions.

Flood prevention and notification system

The embanked floodplains **2D modelling system** maps the flood conveyance zones and considers the new Standard Flood Level (SFL is the maximum water level that realistically occurs and shall be prepared for). In the regional plan, measures are implemented to decrease or avoid further emergence of the SFL, with an explicit aim to mitigate climate change impacts. Flood management plans have been made for all the 67 river

¹³⁴ Government Decree 123/1997 (18 July 1997) on the Protection of Water bodies and Water Installations for the Supply of Drinking Water

¹³⁵ <https://www.vizugy.hu/print.php?webdokumentumid=62>

¹³⁶ Government Decree 50/2001 (3.04.2001) on the Agricultural Use and Treatment of Sewage and Sewage Sludge

¹³⁷ Nitrate-sensitive areas include Lake Balaton, Lake Velence, Lake Fertő, and the catchment area of all reservoirs for drinking water supply purposes or water extraction for mineral and medicinal water utilisation.

¹³⁸ Government Decree 78/2008 (3 April 2008) on the Quality Requirements for Natural Bathing Waters and the Designation and Operation of Natural Bathing Areas

sections that determine perspective primary, secondary and temporary flood zones, as well as specific land-use regulations.

The Hungarian Hydrological Forecasting Service tracks and maps¹³⁹ the actual hydrological conditions in the Danube basin.

Experts from Government bodies participate in the transboundary water committees. Border Water Secretaries liaise directly with water institutions in neighbouring states and coordinate issues.

The **Danube River Basin Accident Emergency Warning System (AEWS)** is activated whenever there is a risk of transboundary water pollution or dangerous levels of certain hazardous substances exceeding their permitted thresholds. The AEWS sends out international warning messages to countries downstream. It operates on a network of Principal International Alert Centres in each of the participating countries. These centres are made up of units – the Communication Unit (operating 24 hours a day), which sends and receives warning messages; the Expert Unit, which evaluates the possible transboundary impact of an accident using the database of dangerous substances and the Danube Basin Alarm Mode; and the Decision Unit, which decides when international warnings must be sent.

Waste management

A new amendment to the Fundamental Law prohibits the transport of pollution waste into Hungary for disposal, protecting not only the environment but human health as well.¹⁴⁰

The most important **principles** e.g., waste hierarchy, end of waste status, Polluter Pays Principle, obligation of separate collection, and extended producer responsibility were adopted in of the **Act on Waste**. The legislation has gone through significant changes since 2012; a recent modification will fundamentally transform the whole solid waste management system in Hungary from 2023 (implementing acts will be available later) and create a model for Europe. Hungary has secondary legislation for some of the specific waste types – mostly the ones under Extended Producer Responsibility like packaging, WEEE¹⁴¹ accumulators and batteries. The Act addresses some waste management activities such as licencing, landfills and incineration, obligations for transparency, record keeping and reporting for all stakeholders. There is a completely independent legal act on the trade of metals which has a significant and direct effect on metal waste.¹⁴² All waste-related activities – collection, treatment, storage etc. – are strictly attached to a specific licence issued by the regional environmental authorities. Licences must be granted by the legal entities before any waste-related activities or operations may start. Municipal solid waste management (MSW) is a crucial issue, and therefore regulated independently in the Act. In 2012, new restrictions were added, and now MSW can only be collected by companies in which the state or the municipalities hold most of the shares. As the Polluter Pays Principle establishes, residents are obliged to pay for MSW services. Even though prices were set in the Act in 2012, they have not been modified since then; thus, a gap has been created between the actual costs of waste management and income from fees. These collection fees go to the National Coordination of Waste Management and Asset Management Plc (NHKV), a state-owned umbrella organisation. NHKV later re-distributes the waste to MSW service providers who maintain the exclusive right to collect MSW and selective packaging from households and industry. MSW service providers may subcontract other licenced collectors. The selectively collected waste accumulated by the MSW provider belongs to the State. The NHKV is entitled to sell the MSW for the State through public tenders. Licenced legal entities collect other waste.

The Act also includes the obligations and rights of waste producers. If the waste producer is a legal entity, they are obliged to contract licenced collectors and treatment facilities and are responsible for the management of the waste until it is collected by the licenced waste management company. The Act establishes secondary liability for property owners for any waste generated or found on their property.

¹³⁹ <https://www.hydroinfo.hu/en/hidinfo.html>

¹⁴⁰ The Fundamental Law of Hungary Section XXI (3); (https://njt.hu/translation/TheFundamentalLawofHungary_20201223_FIN.pdf)

¹⁴¹ WEEE - Waste from Electrical and Electronic Equipment

¹⁴² 2013 CXL Act on the Metal Trade

Extended Producer Responsibility (EPR) is regulated differently in Hungary than in any other EU Member State (MS). In EPR, producers of goods are responsible for the post-consumer stage of the waste generated from their products, including organisational and financial responsibilities. MSs usually set up non-profit systems to carry out the responsibilities of the producers. These organisations were closed in Hungary in 2012, and the State took over the organised collection and treatment of MSW to reach the targets set by the EU.

The Hungarian Government introduced **product fees**¹⁴³ in 2000. Based on the Polluter Pays Principle, the State identified certain products for which it felt it necessary to designate Extended Producer Responsibility conditions. Environmental product fees for companies apply when a product is first placed on the Hungarian market, or when it is used for its own purposes. Product types under the product fee regulation are packaging materials, WEEE, accumulators, lubricating oils and tyres. Any company selling any of these items is legally required to pay a product fee, the environmental product charge is considered tax revenue.

Since the environmental product fee is considered tax revenue in Hungary, it carries several regulatory obligations. Based on the product fee legislation through public procurement tenders, the State budget determines the amount of the State subsidy to use in the following year for collection and recycling waste. At present, the amount paid by the producer in the form of a product fee is much higher than the fee paid for collection and treatment. Out of 85 billion HUF, only 9 billion goes back to the market.

Regulations concerning waste disposal

Disposal differentiates between two activities: landfilling and incineration. At present, any legal person can obtain a licence, but with a change to the law in 2021, only the State or an entity to which it grants a concession will have the right to decide on the use of landfill capacity for municipal waste in Hungary from 2023.

Only waste left at the end of the waste hierarchy can and will be landfilled. Separately collected waste shall not be disposed of in landfills or incinerators. There is also a special disposal regulation that says that the operating licence shall regulate the post-operational stage, meaning re-cultivations and monitoring of closed or decommissioned waste management sites.

Hungary incinerates MSW at a waste-to-energy facility and at some co-incineration facilities. Their operations are under strict legal regulation and supervision.¹⁴⁴ **Biomass** is controlled in a separate legal act.¹⁴⁵ A licence for incineration may only be granted for up to 5 years, while other waste treatment operations can have permits for up to 10 years.

Hungary operates 72 landfills under strict conditions, including the post-operational stage of the landfills. Hazardous, non-hazardous and inert waste landfills are separately regulated within the decree and granted a licence based on the type of waste that the landfill will receive. Although the landfills meet the basic conditions in the country, leachate and gas treatment are not obligatory. That means there is room for improvement of the environmental conditions of the landfills.

Regulations restricting/sanctioning illegal dumping

Illegal waste dumping has always been a serious problem in Hungary. The authorities have always tried to fight against the problem, but no effective solution was found. Municipalities, road operators, the national railway and the Water Directorates are all continuously under siege by illegal dumping. In 2020, the Government announced its **National Climate and Nature Protection Plan** in which eliminating illegal waste dumping is included as one of the critical problems.

The present legal and implementation system is weak and does not act as a sufficiently effective deterrent. The system itself is not holistic, stakeholders are not incentivised, and although restrictions and rules are

¹⁴³ The Act LXXXV of 2011 on Environmental Product Fee sets the obligations and rights of the producers and other stakeholders in question

¹⁴⁴ All technical and technological aspects are included in the Decree to assure high environmental standards for these activities Government Decree 29/2014 (28.09.2014.) on the Technical Requirements, Operating Conditions of Waste and Incineration Emission Levels

¹⁴⁵ Act CXVII of 2010 on the Promotion of the Use of Energy from Renewable Sources in Transport and the Reduction of Greenhouse Gas Emissions from Transport

included in the legal framework, implementation has not been successful. The system assigned secondary liability to property owners. Therefore, if the original owner cannot be found, the new owner of the property is obliged to take responsibility for the waste placed on its land. **Even if illegal waste dumpers are caught in the act, landowners have no right to stop them or identify the polluter if official authorities are not present.** This has been made even more difficult with the GDPR in force.

Several domestic laws already criminalise illegal dumping and abandonment of waste. The system of criminal, infringement and administrative rules related to waste disposal is currently incoherent and, in many cases, it is also easy to circumvent. Illegal waste offences are highly diverse; ranging from failure to report obligations, illegal dumping and public littering. Given this, it is appropriate to apply different types of sanctions to waste-related acts. The purpose of the law is to create a *unified system of rules* in which the sanctions of various branches of law are supported by each other and have sufficient deterrent force. However, the rules must be clear and unambiguous, and create a coherent, proportional system that details the different sanctions and the prohibition of *ne bis in idem*.¹⁴⁶

One of the main sources of dumping is annual bulky waste collection where scavengers take quality waste away before the MSW service providers. Restriction on taking those wastes was introduced in the Act on Waste in 2012, but implementation remains a problem and systematic supervision has not happened.

Sanctions, mostly financial, for illegal waste dumping are stated in the law. However, these are usually used against property owners and not the original culprit.

Given the geography of Hungary, the territory is also highly exposed to illegal waste coming through natural rivers from neighbouring countries.

Organisations that can act, and what tools they can use if considerable amounts of waste enter the river

Undertakings using or producing toxic substances or using technologies that release hazardous substances into the environment must have a remediation plan approved by the competent local environmental authority. Water management bodies of publicly owned water bodies must have a regional remediation plan that enables them to prepare for pollution, environmental damage and remediation, including prevention and localisation differences. Related GDs¹⁴⁷ define tasks related to water quality remediation activities in detail.

Following the legal requirements, **water directorates** (WGs) and the **General Directorate of Water Management** (OVF) regularly operate on-call services. WGs receive notification and start investigating and exploring the situation. If justified, WGs immediately inform the water authority and the environmental protection authority, and if necessary, the competent *National Park Directorate*. The notifications are recorded in the *WG Water Damage Prevention Information System* operated by OVF.

Besides the Polluter Pays Principle, a comprehensive regulation is in force to eliminate damage to groundwater.¹⁴⁸ Besides industrial waste, pollution in rivers causes a severe problem in Hungary. Waste entering from non-EU countries is handled according to international law, bi- and multilateral agreements. However, prevention is the only effective tool to avoid long-term environmental harm.

Nature conservation

Nature protection is based on the **Nature Conservation Act** (Act).¹⁴⁹ All natural and legal persons have a duty to protect natural values and areas, to contribute to the prevention of hazards and damage, to mitigate

¹⁴⁶ It is laid down in Article 50 of the Charter of Fundamental Rights of the European Union: 'No one shall be liable to be tried or punished again in criminal proceedings for an offence for which he or she has already been finally acquitted or convicted within the Union in accordance with the law'. Hungarian Fundamental Law XXVI (6) states 'No one may be prosecuted or convicted in criminal proceedings for a criminal offence for which he or she has already been finally acquitted or convicted in Hungary or – within the sphere specified by an international treaty or a legal act of the European Union – under the law of another State'.

¹⁴⁷ Government Decree 219/2011 (20.10.2011)

¹⁴⁸ Government Decree 219/2004 (21.07.2004) on the Protection of Groundwater

¹⁴⁹ Act LIII of 1996 on Nature Protection. Issues related to nature protection that are not regulated in the Nature Conservation Act shall apply the provisions of the Environmental Protection Act.

damage, eliminate its consequences and restore damaged areas to their previous condition. The basic idea is sustainable use, i.e. the use of natural values in a way and at a rate that does not exceed their renewable capacity and does not lead to a loss of natural values and biodiversity.

According to the Act, a **natural area** is primarily characterised by near-natural conditions which have not been significantly influenced by humans, self-regulates and persists without human intervention. Protected natural areas include **national parks, nature reserves, nature protection areas and natural monuments**. If necessary, the protected natural area must be provided and surrounded by a **protective buffer zone**. The scope of activities allowed in the buffer zone is subject to the permission or consent of the nature conservation authority.

Some **wetlands** e.g. springs, bogs, sinkholes and alkaline lakes are protected by the Nature Conservation Act. To ensure priority protection for oxbow lakes and river waters, lakes, streams and marshes, they should be explicitly protected for the conservation of biological diversity, and scientific, cultural, aesthetic, educational, economic and other public interests. The natural shores of rivers and lakes have to be preserved in order to protect wetlands. Environmentally friendly solutions must be preferred while carrying out hydrological works. To protect wild flora and fauna habitats and their biodiversity, all activities must be carried out with the protection of natural values in mind. In order to maintain natural values and biodiversity, the nature conservation authority may initiate a restriction or ban on the use of certain plant protection products or chemicals that affect soil fertility.¹⁵⁰ Application or disposal of specified chemicals that are hazardous to water and aquatic organisms within 1000 meters from the shoreline of natural and near-natural watercourses and wetlands is prohibited. The amount of water necessary for preserving natural values and the protection and maintenance of biological systems of wetlands cannot be removed by human intervention. New buildings cannot be built within 50 meters of a wetland shoreline or within 100 meters from the shores of lakes, or on floodplains in natural areas.

Hungary's **Natura 2000** network is an important component of the national ecological network. Together with the ecological network, they form the backbone of the Hungarian green infrastructure.¹⁵¹ Protected natural areas cover 9.6% of Hungarian territory. Natura 2000 areas encompass 21% of the country's territory; 39% of which are located in existing protected areas and amount to nearly 2 million hectares.¹⁵²

Rules concerning the protection, treatment and management of special protection areas and the framework of possible actions at national, regional and local level

It is forbidden to change the condition and nature of a protected natural area contrary to nature conservation objectives. The nature conservation authority may restrict, suspend or prohibit activities that damage or seriously endanger protected natural values and areas. Certain activities as specified in the legislation may be subject to an **environmental impact assessment (EIA)**. In order to conserve biodiversity, mapping and assessment of ecosystems and ecosystem services should be considered during the preparation and implementation of each strategic policy plan.

In the case of unlawful conduct, the most common legal consequence is a **nature conservation fine** paid by the person or legal person who violates the provisions of nature protection legislation. If the perpetrator is unknown, the responsibility lies with the owner/occupier of the property for whose benefit the infringing conduct was committed, unless proven otherwise. A nature conservation fine does not release anyone from **criminal or civil¹⁵³ liability**; or negate the obligation to limit, suspend, prohibit, or restore the activity.

¹⁵⁰ The use of plant protection products, bio-regulators and other herbicides, pesticides and artificial fertilisers in a natural area may only take place in an environmentally friendly manner in justified cases based on the results of soil tests.

¹⁵¹ Ecological (green) corridor: protected areas of certain protected natural areas and certain protected natural areas, Natura 2000 areas, sensitive natural areas and areas that provide or facilitate biological connection, strips and mosaics of areas, and their chain, and their habitats. Ecological network: uniform designation of certain protected natural areas as well as protection zones of certain protected natural areas, Natura 2000 areas, sensitive natural areas and biological connections of natural areas provided by ecological (green) corridors.

¹⁵² <http://www.ksh.hu/docs/hun/xftp/idoszaki/pdf/kornyhelyzetkep18.pdf>

¹⁵³ Anyone who causes damage in violation of nature protection legislation and specific official regulations is obliged to compensate the damage in accordance with the rules of the Civil Code.

Environmental damage¹⁵⁴ means a measurable, significant adverse change that occurs directly or indirectly in the environment or its element; or a direct or indirect, measurable, significant deterioration in the environmental service provided by an environmental factor. In the event of an environmental hazard, the user is obliged to take all measures to prevent environmental damage, mitigate environmental damage and prevent further destruction. In the event of environmental harm requiring immediate intervention, the user is obliged to carry out actions to mitigate the danger and carry out remediation acts. If the **environmental damage crosses borders** and the perpetrator is **unknown**; or the user does not take measures to prevent environmental damage, does not remedy, or does not do so properly, it is the responsibility of water directorates and the National Park Directorate to take the necessary environmental damage prevention measures.

The **National Nature Conservation Master Plan**, which is part of the National Environmental Protection Programme, works towards the efficient coordination of nature protection activities. The Plan includes long-term and medium-term development and maintenance of the **ecological network and ecological (green) corridors**, and sensitive natural areas and systems. The **National Biodiversity Conservation Strategy** for 2014-2020 aims to halt and reverse biodiversity loss and the further decline of ecosystem services, and to improve their conditions. Biodiversity conservation must be integrated into, and implemented in cross-sectoral policies, strategies and programmes. The **nature protection information system** operates as an independent part of the National Environmental Information System, with the purpose e.g., of providing data for nature conservation strategic planning and official activities for domestic and international reports. In addition to maintenance plans containing information specifically for the **management of Natura 2000** sites, Natura 2000 requisites have been integrated into the management plans for protected areas under national law.

Bilateral and multilateral agreements and cooperation protocols

As river basins and groundwater bodies are divided by national borders; a significant part of water management problems can be effectively addressed by **cross-border cooperation**.

Hungary is a signatory of all relevant global international legislation dealing with transboundary cooperation.¹⁵⁵ The Polluter Pays Principle and the Precautionary Principle are reflected in most of the bi- and multilateral transboundary agreements. The UNECE Protocol¹⁵⁶ is signed by 22 countries. So far only Hungary has ratified it, therefore it is not in force. The Protocol relates to financial **responsibility on pollution causing transboundary harm** and was developed after multiple incidents of cyanide pollution on the Tisza River coming from Romanian mining operations.

The Danube countries established the **Convention on Cooperation for the Protection and Sustainable Use of the Danube River** (Danube Protection Convention)¹⁵⁷. The Contracting Parties and the European Commission agreed to cooperate on basic water management issues. The **International Commission for the Protection of the Danube River** (ICPDR) was established. The main objective of the **Danube River Protection Convention** (DRPC) is to ensure that surface waters and groundwater within the Danube River Basin are managed and used sustainably and equitably, including the reduction of pollution loads entering the river system.

Hungary has bilateral transboundary water agreements with all seven neighbouring countries. The first was signed with Austria in 1956; the latest with Serbia in 2019. The main areas of cooperation are water resource management, river basin management planning, flood protection, river regulation, hydrological forecasting, data exchange, and water protection (quantity and quality). Most of the transboundary agreements refer to obligations meant to maintain or improve water quality and the aquatic environment, prevent and mitigate

¹⁵⁴ The procedure for preventing and remedying environmental damage is regulated by Government Decree 90/2007 (26.04.2007).

¹⁵⁵ The Convention on the Protection and Use of Transboundary Watercourses and International Lakes, signed in Helsinki in 1992 (UNECE Water Convention, also known as the Helsinki Convention) and Convention on the Law of the Non-Navigational Uses of International Watercourses, signed in New York 1977 (New York Water Convention)

¹⁵⁶ The UNECE Protocol on Civil Liability and Compensation for Damage Caused by the Transboundary Effects of Industrial Accidents on Transboundary Waters. It was adopted at the Environment for Europe Ministerial Conference in Kyiv, Ukraine¹⁵⁶ in 2003.

¹⁵⁷ The International Convention for the Protection and Sustainable Use of the Danube River, signed in Sofia on 29 June 1994, was concluded by the Government in the same year.

transboundary pollution events, and provide mutual help if requested. Data and information exchange, dispute resolution through the joint commission, or using the UNECE Water Convention or the Danube Cooperation Agreement dispute settling mechanism are elements of the agreements. The weakness of the transboundary water management agreements, like the global conventions, appears at the law enforcement level.

The **Environmental Protection Agreement** (AT, RO, HR, UA, SK) relates to waste management as an environmental issue.

The existing water management agreements do not specify communal waste pollution. **None of the transboundary cooperation agreements deals with the plastic/communal waste issue. In fact, plastic/communal waste is not viewed as water pollution as it does not influence the chemical status of water bodies.** There is no threshold limit, so there is no pollution. Moreover, the floating waste problem generates significant collection and elimination costs, which is not currently compensated by the country of origin. (Micro) **plastic pollution** emerged as a new issue during the 4th Joint Danube Survey measures but **did not conclude with any specific provision either.**

Serbia

Surface water conservation

The legislation of the Republic of Serbia has largely been harmonised with European Union water protection regulations.¹⁵⁸ The **Act on Water** regulates the legal status of water, integrated water management, water facility management, delineates sustainable use of water resources and its supervision; and sets rules related to surface water and groundwater¹⁵⁹, including thermal and mineral water. It regulates water management conditions and water management permits for specific industrial facilities discharging wastewaters, and regulates the obligation of wastewater treatment plant construction and facilities for the disposal and discharge of wastewater, including industrial and municipal landfills.

The rules are laid down in several different regulations, such as (non-exhaustive) the **Strategy on Water Management** in the Republic of Serbia until 2034¹⁶⁰, the **Act on Law on Environmental Protection**¹⁶¹, **Act on Environmental Impact Assessment**¹⁶², **Act on the Integrated Prevention and Control of Environmental Pollution**¹⁶³. The Water Management Plan for the Danube River Basin has not been adopted.

There are bylaws that address certain important water sector and sanitary control issues in more detail, listed in Appendix 1.

The strategic basis for water management in the Republic of Serbia can be found in several documents, the Water Management Strategy, National Strategy on Economic Development, Serbian Agricultural Development Strategy and Energy Development Strategy¹⁶⁴. Existing strategies portray the current situation both in terms of water supply and water protection and define the quantity and quality of drinking water sources. They also deal with draft proposals for the construction of regional water supply systems, define priority criteria, and propose wastewater treatment technologies that would result in acceptable drinking water quality.

The Ministry of Agriculture, Forestry and Water Management has established a working group to advance suggestions for the development of water management plans that include input from the civil sector.

¹⁵⁸ Act on Water (Official Gazette of the Republic of Serbia, No. 30/2010, 93/2012, 101/2016, 95/2018 and 95/2018) and the Decree on Border Emission Values in 2010-2012

¹⁵⁹ Exception is groundwater from which useful mineral raw materials and geothermal energy can be obtained

¹⁶⁰ Official Gazette of the Republic of Serbia, No. 3/2017

¹⁶¹ Official Gazette of the Republic of Serbia, No. 35/2004, 36/2009, 72/2009, 43/2011, 14/2016, 76/2018, 95/2018

¹⁶² Official Gazette of the Republic of Serbia, No. 135/2004 and 36/2009

¹⁶³ Official Gazette of the Republic of Serbia, No. 135/2004 and 25/2015

¹⁶⁴ Other strategies to mention are National Strategy for Social Housing, National Environmental Approximation Strategy (with accompanying Sectoral Water Strategy), National Strategy of Sustainable Use of Natural Resources and Goods, and the Strategy of Water Supply and Water Protection in the Autonomous Province (AP) of Vojvodina

The Regulation Adopting the Operational **Flood Control Plan** defines and confirms the use and implementation of the Plan for flood defence (including issues regarding the tasks and duties of legal entities that conduct flood protection activities, both for national and transboundary water bodies. The Regulation on Flood Risk Mapping sets the rules and criteria to be observed when elaborating the national water flood risk map (also classification of flood risk zones).

The quality of waters for bathing is indirectly prescribed in the **Regulation on Water Classification** (OGRS, No. 5/68) and the Regulation on Pollutant Limit Values in surface and ground waters and sediments (OGRS, No. 50/12). A Rulebook on Bathing Water Quality is currently under preparation that will allow full alignment with the Bathing Water Directive¹⁶⁵.

Facilities for flood protection are embankments with associated facilities (dams, pumping stations), quay and defence walls, relief and lateral channels and others flood protection facilities. An integral part of the embankment for flood defence is considered to be a protective belt with forest and protective greenery (protective forests) in the inundation area¹⁶⁶.

Water management – water conservation

Due to frequent high waters, flood protection is a pressing issue in the country. Flood control measures are only partially developed for smaller rivers which are also prone to torrents, frequent flash floods and landslides. Activities to improve the flood protection system are underway.

The basic law regulating flood prevention in Serbia is the Act on Water. Regulations are mostly harmonised with the European Floods Directive 2007/60/EC (FD) prescribing all three stages (preliminary flood risk assessment, flood hazard and risk maps, and flood risk management plans) which should contribute to the management of flood risks and reduce potential negative consequences. Although all the phases should have already been completed by now, only the first phase devoted to preliminary flood risk assessment has been concluded¹⁶⁷. Flood maps existed before, but they were developed for certain specific areas and basins such as the Danube River Basin (Danube Flood Risk Project, 2012) and did not cover the whole country. Accordance with EU legislation, systematic development of maps supported by the IPA II 2014 programme will finally establish maps for all flood-prone areas. After the enactment of the Water Law in 2010, the initial deadline for the preparation of flood hazard maps and flood risk maps was 2017, but that deadline has been extended (Nikolić, Popadić, 2020). According to the Instrument for Pre-accession Assistance (IPA II) 2014–2020, which is the EU financial support instrument for flood recovery and prevention in Serbia, preparation of flood hazard maps and flood risk maps for the remaining flood-prone areas should have been finished in 2020 (IPA II, 2014). Flood maps existed before, but they were developed for certain specific areas and basins such as the Danube River Basin (Danube Flood Risk Project, 2012) and did not cover the whole country. Based on the same parameters for the entire country, and in accordance with EU legislation, systematic development of maps supported by the IPA II 2014 programme will finally establish maps for all flood-prone areas.

Flood prevention notification system

Flood events in May 2014 proved that the existing system of flood protection was insufficient (Babić Mladenović and Kolarov, 2015b). Based on an assessment of these floods, water management experts emphasised that embankment construction and other traditional flood defence measures are inadequate. Flood risk management must be improved, especially regarding active flood protection measures¹⁶⁸. Some active flood prevention measures are suggested in the Water Management Strategy. Since climate change is foreseen to cause more frequent periods of high-intensity rainfall, increasing the risk of flooding (National Climate Change Adaptation Plan, 2015), flood prevention is also emphasised in the National Climate Change

¹⁶⁵ There is no applicable legislation that transposes the Bathing Water Directive 2007/6/EC (as amended by Regulation (EC) No 596/2009).

¹⁶⁶ 50 m wide next to the embankment, drainage channels parallel to the embankment in the protected area, at a distance of 10 m to 50 m to embankments, as well as service roads in the protected area for flood defence.

¹⁶⁷ After the enactment of the Water Law in 2010, the initial deadline for the preparation of flood hazard maps and flood risk maps was 2017, but that deadline has been extended (Nikolić, Popadić, 2020)

¹⁶⁸ Babić, Mladenović and Kolarov, 2015a, b; Petrović et al., 2015; Ristić et al., 2017

Adaptation Plan. It is stated that flood prevention measures should be taken in less populated areas, such as forests and agricultural land to reduce the peak impact of the flood wave (WMSRS, 2017).

The roles and jurisdictions of the central and local governments in flood protection are clearly defined. A flood defence plan for a local community must be implemented for the entire territory that may be threatened by torrential water courses, not just with protective systems, but also by regulated water courses with existing protective water management installations. This ensures the organisation of an integrated defence at each location within the entire territory. The frequency of torrential floods in Serbia has given rise to the need for monitoring, prediction, and preparedness for these natural disasters. The Jaroslav Černi Institute created a methodology for torrential flood control in 1998, and it is under constant improvement and development. Serbian Flood Defence methodology combines radar meteorology, torrential (flash flood) hydrology and GIS techniques, enables quick determination and assessment to provide sufficient time for the flood defence system to be put in operation.

Waste management

The **Act on Waste Management**¹⁶⁹ provides the legal framework for the waste management system in Serbia with targets for waste collection, recycling, treatment and disposal, and other relevant issues essential to establish a sustainable waste management system.

The **Act on Packaging and Packaging Waste Management**¹⁷⁰ sets forth environmental conditions which packaging must meet to be marketed, requirements for packaging and packaging waste management, reporting guidelines on packaging and packaging waste, financial instruments, and other relevant issues. It regulates imported packaging, produced, i.e. marketed packaging, as well as packaging waste generated in the course of business activities on the territory of the Republic of Serbia, regardless of its origin or purpose, and used packaging material. The Act prescribes deadlines of twelve to eighteen months for the period of harmonisation. (1) Producers, importers, packaging/bottling plants and delivery companies must organise packaging waste collection; establish collection areas; site sorting and temporary storage of packaging waste; enter into agreements with the operator in charge of municipal packaging waste and packaging waste which is not categorised as municipal, or obtain a permit to independently manage packaging waste; establish packaging waste management; and label marketed packaging with information on the possibility to leave packaging waste immediately at the point of purchase or return it free-of charge later on. (2) End users who import or purchase packaging or raw materials for production of packaging for the purpose of their own businesses, and who do not cooperate with a supplier, must provide adequate management of packaging waste (which cannot be categorised as municipal solid waste) by concluding an agreement with an operator, or relying on its own resources to provide re-use, recycling or disposal of packaging waste.

The **Act on Environmental Protection**¹⁷¹ arranges the integrated system of environmental protection, including the application of special waste management codes of conduct from its generation point to its disposal. The codes of conduct and management rules cover prevention or reduction of waste generation, reuse and recycling, separation of secondary raw materials, utilisation of waste as fuel, waste import, export, and waste transit. The Act also establishes the Environmental Protection Agency and details information access and public participation opportunities and procedures in the decision-making process.

Waste management legislation in Serbia generally covers all aspects of the sector and most EU legislation has already been transposed into national law. However, not all parts of the legislation satisfactorily comply with the expected enforcement or monitoring standards, nor are sanctions for non-compliance set at a satisfactory level.

As a result of an insufficient level of waste collection, which currently stands at around 80%, low environmental citizens' awareness and attempts to avoid paying landfill tax many illegal dumpsites are scattered throughout the country. Waste producers are obliged to hire a licenced operator for collection,

¹⁶⁹ Official Gazette of the Republic of Serbia, No. 36/2009, 88/2010 and 14/2016

¹⁷⁰ Official Gazette of the Republic of Serbia, No. 36/09

¹⁷¹ Official Gazette of the Republic of Serbia, No. 135/04, 36/09, 72/09 (state law), 43/11 (CC), 14/16

transport, and treatment (or disposal) of certain types of waste. Once handed over to the operator, the waste then ceases to be the responsibility of the producer.

Extended Producer Responsibility (EPR) was introduced in the Act on Packaging Waste and set national EPR targets. Packaging producers are obligated to pay taxes to a National Fund. Through the national operators, collected funds are used for incentivising the purchase price of packaging waste to meet the set targets for a particular year. Consequently, the demand for recyclable packaging materials has significantly increased. Although the current targets for packaging waste have been reached, they are still at an insufficient level. Huge quantities of packaging waste are not collected for reuse or recycling but end up in landfills or other inappropriate locations.

Waste disposal

The **Waste Management Strategy (WMS)** for 2010-2019 (an updated version is drafted and pending approval) defined the long-term goals for waste management. Landfills will remain the major final destination for most waste streams. However, according to the WMS, instead of the current number of over 3500 dumpsites (including illegal dumps and semi-controlled municipal disposal sites), only 27 regional sanitary landfill operations are planned to continue in the future.

The **Act on Waste Management and the Regulation on Disposal of Waste in Landfills**¹⁷² creates the main national framework for managing waste disposal. Only around 5% of municipal solid waste is currently recycled. Landfilling continues to represent the most widely used method of waste disposal. Out of 1.89 million tons of municipal solid waste (MSW) generated annually, waste management companies collect 1.49 million tons. This waste is mostly landfilled without any pre-treatment. Approximately 450,000 tons of MSW were landfilled on compliant sanitary landfills, and the remainder is disposed of on unsanitary semi-controlled municipal sites. Most of the uncollected waste ends up in illegal dumps, many of which are located in the vicinity of water bodies. The Act on Waste Management covers all aspects of setting up and operating a landfill including the permitting process, permissible waste streams and procedures for accepting these waste streams, landfill operation and closure, and monitoring of operations.

Current waste management legislation manages two major groups of waste streams, the first called the "Relevant waste streams": MSW, construction and demolition waste (C&D) including excavated soils, secondary waste from waste treatment, mining waste, sewage sludge, biodegradable waste, and hazardous waste. The other group called "Special waste streams": packaging waste, end-of-life vehicles (ELV), mineral oil, used tyres, electronic equipment (WEEE); mercury-containing fluorescent lights, batteries and accumulators, PCB and other POPs, waste containing asbestos, medical waste, pharmaceuticals, and waste generated in titanium dioxide production.

According to the Regulation on Disposal of Waste in Landfills, the disposal of liquid waste, hazardous waste and all special waste streams is prohibited in landfills. This regulation also stipulates reduction of biodegradable waste disposed at landfills and promotes treatment options. At least 65% of the total amount (by weight) of biodegradable municipal waste must be diverted from landfills in 2020-2026. However, based on the current practice where no significant amounts of biodegradable waste have been diverted, this goal will be impossible to achieve in the given time frame.

Principle of Subsidiary Liability is applied, so that state authorities, within their financial abilities, are responsible bodies charged with eliminating the consequences of environmental pollution, to rectify damages when the polluter is unknown; and when pollution originates from outside Serbia.

The **Act on Agricultural Land**¹⁷³ regulates the protection of land, as well as the conditions for land utilisation for raw mineral exploitation. The regulation covers the disposal of tailings, ash, slag and other waste and hazardous substances on agricultural land. The Law stipulates the obligation to re-cultivate agricultural land if it has been used as a waste disposal site. The **Act on Mining and Geological Exploration**¹⁷⁴ defines mining waste management as waste generated from extractive industry. The Law stipulates the obligation to

¹⁷² Official Gazette of the Republic of Serbia, No. 92/10

¹⁷³ Official Gazette of the Republic of Serbia, No. 62/06 and 65/08 (state law), 41/09, 112/15, 80/17)

¹⁷⁴ (Official Gazette of the Republic of Serbia, No. 101/2015)

prepare a Mining Waste Management Plan as part of the required mining waste disposal and management permit procedure.

The Law on Planning and Construction¹⁷⁵ prescribes procedures for the construction of infrastructure. Moreover, it determines the conditions and methods of spatial planning, arrangement and utilisation of green field and brown field land for construction, and the development and utilisation of buildings.

The **Act on Chemicals**¹⁷⁶ regulates integrated chemical management. The **Regulation on the Methodology for Chemical Accident Hazard Assessment** addresses contamination of the environment, preparedness measures, and mitigation of consequences. The regulation represents a combination of the legal requirements and the methodological guidelines for the risk analysis and for preparing an emergency plan. The statutory procedure for the control of major accident hazards involving dangerous substances was established by The **Law on Disaster Risk Reduction and Emergency Management**¹⁷⁷.

Regulations restricting/sanctioning illegal dumping

The **Act on Waste Management**¹⁷⁸ regulates sanctions for illegal dumping. A fine of 1,500,000-3,000,000 RSD (12500-25000 Euro) will be imposed on any legal entity that disposes of waste at a location that does not meet the technical, technological and other prescribed conditions¹⁷⁹. For the same offence, individuals (natural persons) will be fined from 5,000 to 50,000 RSD (42-425 Euro) or imprisoned for up to 30 days.

The Act on Waste Management regulates illegal dumping and semi-controlled municipal disposal sites. Local governments are solely responsible for keeping records and regularly reporting on illegal dump sites and semi-controlled municipal disposal sites, removing illegal dump sites and sanitising the locations and sanitation and remediation projects for semi-controlled municipal disposal sites. Local governments will be penalised if they fail to comply.

In case of violations, which organisations can act and what tools can they use?

Inspectors in charge of environmental protection at all levels, from the local to the national level, oversee controlling and enforcing punitive measures. NGOs and citizens can also file complaints about illegal waste disposal.

When it comes to pollution of water bodies, the Ministries of Transport, Forestry and Water Management, Environmental Protection, Interior and Health, as well as the Public Water Utility, Hydrometeorological Institute and the Agency for Animal Protection develop a joint operational action plan¹⁸⁰ in order to prevent water pollution and reduce and mitigate the consequences of the resulting pollution.

If a citizen, landowner adjacent to the water body, commander of a vessel or another responsible person on the vessel notices water pollution in a river or lake, they are obliged to inform one of the competent authorities. The Ministry in charge of water management monitors the pollution and, if necessary, notifies the competent authorities downstream of the site. The Hydrometeorological Institute continuously monitors the movement of the pollution until the cessation of pollution and informs other competent authorities

¹⁷⁵ Official Gazette of the Republic of Serbia, No. 72/09, 81/09-corr., 64/10 – decision CC, 24/11, 121/12, 42/13 - decision CC and 50/13 - decision CC, 98/2013 – decision CC, 132/14, 145/14)

¹⁷⁶ Official Gazette of the Republic of Serbia, No. 36/09, 88/10, 92/11, 93/12, 25/15

¹⁷⁷ Official Gazette of RS, No. 87/2018

¹⁷⁸ Articles 88 and 90 of Act on Waste

¹⁷⁹ i.e. contrary to the conditions specified in the permit or without prior treatment, or disposes of hazardous waste together with other types of waste (Article 42, paragraphs 2, 4 and 6 of the Act on Waste)

¹⁸⁰ The operational plan contains a list of competent bodies and other authorised bodies or legal entities that perform water monitoring; the manner of informing the competent authorities after learning about the water pollution incident; the name of the competent authority for monitoring pollution, and the manner of notifying other competent authorities until the cessation of the pollution; and the manner of exchanging information on transboundary pollution with the competent authorities of neighbouring countries.

about it¹⁸¹. The Polluter Pays Principle demands that anyone who causes water pollution by their activities is obliged to bear the costs of measures for the elimination of the pollution.

Nature conservation

The Serbian Institute for Nature Protection selected a preliminary list of 68 potential Ramsar sites. A total of 11 areas of international importance have been declared, covering a total area of 129,919 ha.

The **Convention on Biological Diversity** (CBD) was implemented in Serbia in 2001¹⁸². The obligations of the signatory countries to the Convention include the development of national programmes for the protection of biodiversity, as well as monitoring and control of invasive species. Serbia has been implementing the **Convention on the Conservation of Migratory Species of Wild Animals**, or the 'Bonn Convention' since 2007¹⁸³.

The Republic of Serbia adopted the **Berne Convention** in 2007 and incorporated it into its nature protection regulations¹⁸⁴. Special attention is paid to species and natural habitats that are endangered at the international level, emphasising the protection of habitats of migratory species and their migration routes. Sixty-one areas in Serbia have been proposed for the Emerald Network, and this links to the EU NATURA 2000 network. The network of protected areas will become a part of the Natura 2000 network once Serbia becomes a member of the EU.

The **Act on Nature Protection** governs the protection and conservation of nature and biological, geological and landscape diversity, with the objectives e.g. protection, conservation and improvement of biological, geological and landscape diversity, sustainable use and/or management of natural resources and goods, securing their function along with the conservation of natural values and the balance of natural ecosystem.

The **Bylaw on Ecological Network Protection** establishes an ecological network. It also institutes a stricter way of managing and financing the ecological network in order to preserve biological and landscape diversity.

The **Redbook**¹⁸⁵ lists and protects rare, endangered, protected and strictly protected species in order to preserve biological diversity. The list includes strictly protected wild species or protected wild species that have special significance for the Republic of Serbia and determines measures for the protection of these species and their habitats.

The **Regulation on Criteria for Selection of Habitat Types** determines habitat types, their ecological sensitivity, whether they are rare or endangered, and establishes priority habitat types and protection measures for their preservation (Official Gazette of Republic of Serbia, no. 35/2010). Criteria and measures for habitat protection are determined by this regulation in accordance with the national Nature Protection Law and pending international regulations.

Rules concerning the protection, treatment and management of special protection areas, and the framework of possible actions at the national, regional and local level

The 2010-2020 Spatial Plan of the Republic of Serbia calls for the establishment of protected areas to cover 10% of Serbia by 2014, and up to 12% by 2020.

The local framework for protected areas is elaborated in the Act on Nature Protection. Seven types of protected areas have been defined by this law: strict nature reserves, special nature reserves, national parks, nature monuments, protected habitats; outstanding natural features or landscapes; and nature parks. There

¹⁸¹ If the pollution originates from a ship, the ship owner must ensure that the best available techniques are used to prevent the spread of the pollution. If the owner of the vessel that caused the pollution does not take measures to reduce and remediate the water pollution, those measures are taken by the Public Water Utility at the vessel owner's expense.

¹⁸² Act on Ratification of the Convention on Biological Diversity, Official Gazette of the FRY - International Agreements, No. 11/2001

¹⁸³ Act on Ratification of the Convention on the Conservation of Migratory Species of Wild Animals (Official Gazette of RS - International Agreements, No. 102/2007)

¹⁸⁴ Act on Ratification of the Convention on the Conservation of European Wildlife and Natural Habitats (Official Gazette of RS - International Agreements, No. 102/2007)

¹⁸⁵ Official Gazette of Republic of Serbia, no. 5/2010, 47/2011, 32/2016 and 98/2016

are 436 protected areas in Serbia, 5 of which are national parks (NP). In all, 5.86% of is currently under some form of environmental protection.

The government can prescribe protection regimes, procedures, and their implementation methods in greater detail. The Act on Nature Protection also defines the obligations of protected area managers to develop 10-year management plans. The Act also envisages public participation in protected areas, including input on their management plans.

The public sector manages 94.4%, while the private covers 5.6% of the protected areas¹⁸⁶. Certain areas (2.06%) do not have a manager. A manager is required to ensure internal inviolability of a protected area and guard it in accordance with the Regulations of Internal Order and Ranger Service that has been developed and adopted by the manager with the consent of the competent authority.

Protected area financing is received through the central government budget, resource use, tourism, other fees, service payments and donations. Under the Environmental Protection Fund Act, part of the funds set aside can be used to promote the sustainable use of protected areas.

The Ministry of Environmental Protection, is responsible for protected areas at the national level, finances activities in protected areas through various projects such as marking and maintenance of trails, rehabilitation of degraded areas, development of information systems.

The Provincial Secretariat financially supports various project activities in protected areas, such as sanitation and revitalisation of sensitive, variable ecosystems (saline, steppe, old-growth forests, wet meadows, grasslands and shallow ponds) and monitoring of sensitive and strictly protected ecosystems.

The Ministry of Agriculture, Forestry and Water Management and The Directorate for Forests, which is part of the Ministry, provides financial support to protected areas for certain activities (afforestation, improvement of habitat conditions, as well as scientific projects). The Directorate for Forests inspects forests and provides guidelines and support in the preparation of forest management plans. Currently, there are no effective management plans for any of the five national parks in Serbia, however, they have all been drafted and are in various stages of adoption.

Bilateral and multilateral agreements and cooperation protocols

- Parma Declaration on Environment and Health – EUR/55934/5.1 Rev. 2
- European Landscape Convention – ETS176, 20.X.2000
- The Podgorica Initiative – Declaration of Ministers and High-Level Representatives on the occasion of the 1st High-level Ministerial Panel on Responding to Climate and Environmental Challenges in SEE
- Protocol on Water and Health to the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes – UN Economic and Social Council, MP.WAT/2000/1, EUR/ICP/EHCO 020205/8Fin
- Paris Declaration, Transport Health and Environment Pan European Programme

Romania

Surface water conservation

Article 55 of EGO 195/2005 states that the aim of protecting surface and groundwater is to maintain and improve their quality¹⁸⁷. Article 15 of the **Act on Waters** forbids any form of polluting the water sources and the expansion or construction of any economic object, residential complex, new residential or industrial

¹⁸⁶ Besides the Ministry of Environmental Protection, Ministry of Agriculture, Forestry and Water Management, the Provincial Secretariat, Institute for Nature Conservation of Serbia, and Provincial Institute for Nature Conservation, certain competencies related to nature protection are entrusted to public companies (JP) that manage the Tara, Djerdap, Kopaonik, Fruska Gora and Sar Mountain National Parks. JP “Srbijasume”, JP “Vojvodinasume”, JP “Vode Vojvodine” and other managers of protected areas operate in compliance with the Bylaw on Conditions to be fulfilled by a Protected Area Manager (Official Gazette of the Republic of Serbia, no. 85/09).

¹⁸⁷ Article 55 of EGO 195/2005

water works (which could increase wastewater load) without expanding the sewer system and treatment facilities. It forbids waste dumping in riverbeds or lake basins, emission wastewater in groundwater or lakes, and washing household objects or any items containing pesticides or other dangerous substances that can lead to contaminated water flowing in surface waters or the land. Throwing petrol residue or other dangerous substances in the sewer system is also forbidden. The Act institutes protection zones around water bodies and it is forbidden to store or use fertilisers, pesticides or other hazardous materials in these zones. Chapter III Section 3 regulates river basin management plans created for each drainage basin or their groups. Concurrent to these, there are development programmes for waterworks, facilities and to improve water management. All socio-economic activities have to be correlated with the environment protection and spatial plans. Smaller drainage basins of local improvement plans are encompassed in the River Basin Management Plans. The Basin Committee of the drainage basin has to review the management plans, local plans, accidental pollution prevention or remediation plans.

The **Act 458/2002 on Drinking Water Quality** defines drinking water as water destined for human consumption, in its natural state or after treatment, used for drinking, preparing food or other household needs, and without considering its source. Drinking water must not contain microorganisms, parasites or substances which, by their type or concentration could pose a danger to human health. Water quality must comply with the minimal conditions set in the Act¹⁸⁸. Producers, distributors and water users monitor the quality of water, which is supervised and controlled by the local, county level public health authorities.

Governmental Decision on Emission of Wastewater¹⁸⁹ establishes the technical norms for the collection, treatment and release of communal wastewater, conditions for discharging to the sewer system and treatment facilities, and pollutant load limits. This GD declares the entire county a sensitive zone, so the necessary infrastructure for wastewater treatment must be ensured for every community with a population of or over 10,000. The technical norms of Annex 1 distinguish three wastewater treatments: primary, secondary and compatible. Municipal wastewater must undergo secondary or compatible treatment before discharge, which must comply with Annex Table 1 or 2. The tables contain the permissible concentration or minimal reduction percentage of pollutants. Annex 3 enumerates municipal or industrial wastewater pollutant load limits and the establishing methodology. Discharged waters must not contain polluting substances with high levels of toxicity, floating materials above the allowed limit, or substances which could lead to increased turbidity, foaming or a change that would be unsightly or foul smelling. Discharging wastewater into drainage and irrigation canals or onto agricultural land can only happen with the permission of those who administer the canals/land, and only after they undergo compatible treatment.

Governmental Decision on Bathing Water¹⁹⁰ (GD) serves as the legal framework for monitoring, classifying and quality management of bathing waters. The competent authorities establish a permitted list. The county-level public health authority inspects the premises where users are considered to be or are at risk of contamination. Classification can be unsatisfactory, satisfactory, good and excellent based on centralised monitoring results. Public Health Authority schedules frequent sampling. They measure the concentration per 100 ml of intestinal enterococci and *E.Coli*. The tables in Annex 1 of the GD establish the limits and of the bathing waters classification. If pollution is too high, they forbid or deter bathing.

Water management – water conservation

107/1996 Act on Waters¹⁹¹ Chapter III Section 5 and Regulation from 7 March 2019 issued by the Ministry of Waters and Forests and the Ministry of Interior, are the main Romanian legislations dealing with **flood control** regulations. The later institutes the creation of local, county, and river basin-level flood defence plans. The higher-level plans must incorporate information from lower-level ones. According to 2016 data, Romania has earth embankments along 4000 km of its surface waters, with a total length of around 7500 km. Most were constructed with outdated technology and present a significant failure risk. There are 1353 dams for a total water accumulation of 13.8 billion m³, of which 893 million m³ are temporarily held behind

¹⁸⁸ Tables 1A, 1B and 2 of Annex 1 of Act on Water

¹⁸⁹ 188/2002 on the Approval of Rules Regarding the Emission of Wastewater into the Aquatic Environment

¹⁹⁰ 546/2008 on the Quality Management of Bathing Waters

¹⁹¹

217 dams to be used to harvest flood waves. The remaining 1232 dams are for permanent reservoirs with the capacity of 2.017 billion m³ for harvesting flood waves. In accordance with Article 75 of the Law on Waters, the proper functioning of non-permanent accumulation lakes is obligatory to the extent of their individual capacity to avoid disaster during periods of high water. If necessary, they can be directed to flood pre-selected lands as established in the flood defence plans, and lands can be ordered to be enclosed by earth embankments. Other methods for flood prevention are protection and consolidation of riverbanks and riverbeds, rectification and reshaping of riverbeds, redirecting water, combatting soil erosion, flow regularisation on mountain sides, torrent corrections and drainage of lands. Nature-based solutions are also used. The Forest Code contains general dispositions on the re-establishment and extension of riparian forests, among other types of forest. Re-establishment of wetlands can be included in river-basin management and improvement plans governed by the Law on Waters.

The flood prevention and notification system

The **National Institute of Hydrology and Water Management (NIHWM)** is the principal actor of the Romanian flood prevention and alarm system. In accordance with Annex 5 of the Regulation from 7 March 2019, in potentially dangerous hydrological phenomena forecasts, the NIHWM must issue warnings within six hours of the anticipated flood event. In unforeseen situations, the NIHWM issues descriptive hydrological reports, with an anticipation time of 12-24 hours. In cases of immediate dangerous hydrological phenomena, which can only be forecast with very little notice, warnings can only be issued 10-30 minutes before the event. To better indicate the potential risk of the forecast hydrological phenomena, a colour code system is used: Code Yellow (risk of flood waves or rapid rise of water levels which require increased vigilance), Code Orange (risk of major flood waves or important spills, which could lead to the flooding of households and socio-economic objects), and Code Red (risk of major floods which could necessitate evacuation and restricting the use of bridges and roads). In cases of flood waves or pollution spills approaching downstream countries, the NIHWM facilitates the exchange of information through joint commissions established by bilateral agreements signed with neighbouring states.

Legislation concerning waste management

Act 211/2011 on the Regime of Waste is the main Romanian legislation concerning waste management, it introduces the waste hierarchy, by-products, end-of-waste status, list of waste types, and inserted producer responsibility regulations in the Romanian law. Waste management is based on the waste hierarchy: prevention, reduce, reuse, recycle, and recovery as energy, landfilling and incineration. Extended Producer Responsibility is applied and lists as possible measures, the encouragement of product design with reduced environmental impact. Improved product designs can generate less waste during production, use and disposal, reduce or eliminate use of toxic substances in a product and reduce the quantity of materials used. Companies are encouraged to produce, develop and commercialise durable, multiple-use products which, after reaching the end of their product life can be reused, recycled or disposed of in a more environmentally friendly method such as deposit-return systems and acceptance of financial responsibility. The Act obliges producers and waste holders to achieve waste recovery. To ensure a high recovery rate, producers and waste holders collect paper, metal, plastic and glass separately. Operators collecting and/or transporting waste must ensure separate collection and non-intermixing of these categories. Waste recovery enterprises must store the waste in specially designated zones in conditions reducing the risk to human health and the environment. They must avoid large waste stocks awaiting recovery or products resulting from recovery generating environmental pollution or risk to human health and adopt the best available technologies.

In accordance with the Polluter Pays Principle, the cost of waste management operations is paid by the producer, the current or previous waste holder. In case of abandoned waste or when the producer/holder of the waste is unknown, the clean-up costs, environmental remediation, the costs of transportation, recovery, re-use/recycling or elimination are due by the local authorities. If the producer or holder of the waste is later identified, the authorities can recover its costs incurred, including those associated with tracking the responsible party. The producers and holders of hazardous waste, operators licensed to collect, transport, store and treat hazardous waste are required to collect, transport and separately store different types of hazardous wastes based on their physical-chemical properties. Producers and hazardous waste holders must

not mix different types of waste or mix with non-hazardous waste; intermixing also includes the dilution of dangerous substances. During collection, transportation or storage, hazardous waste must be packaged and labelled in accordance with international and EU standards. The **Act 101/2006 on Local Sanitation Services** regulates the collection and transportation of municipal waste.

Regulations concerning waste disposal

Article 19 of Act 211/2011 obliges the waste producers and holders to eliminate unrecycled waste. Licensed waste disposal operators use the best available methods to ensure total elimination. Environmental criteria also influence the waste disposal choice of method, stating that waste management cannot endanger human health, the environment, risk the water, air, soil, plants and animals; cause a nuisance through noise or odours; or places of special interest. Authorities establish conditions for recycling centres, landfill or incinerators, respecting approved technologies, and specified operating permits. Public participation in site selection is possible¹⁹². Dumping of waste is forbidden, as is the elimination of waste outside the authorised premises. Annex 2 lists the approved waste disposal methods.

In Romania, landfilling is still prevalent and regulated¹⁹³; there are three categories of waste disposal sites: hazardous, non-hazardous and inert. Landfills are forbidden to accept liquid waste, explosive, corrosive, oxidising, very flammable or flammable waste, hazardous medical or clinical waste or used tires. As per the Polluter Pays Principle, waste disposal costs are supported by the producers or holders of the waste. Landfill operators must respect the reception procedure.¹⁹⁴ The landfill must verify the documentation regarding the quantities and characteristics of the waste, its origin and nature, visually inspect the waste at the entry point and at the location it is deposited, take and keep relevant samples for at least a month, keep a register about the quantity and characteristics of the waste, its origin and nature, and indicate the date of entry and the identity of the producer/holder or transporter of the waste. For hazardous waste, there is an additional requirement to keep track of its exact location at the landfill site.

Regulations restricting/sanctioning illegal dumping

All producers and holders of waste are obliged to either recover or eliminate their waste, which must be collected and transported by licensed operators¹⁹⁵. In Romania, illegal dumping of waste is still very prevalent; the population largely do not care about environment or the state of the environment in general. Waste dumping is illegal, punishable by fines of 3-6K RON (600-1200 Euro) for natural persons, and 20-40K RON (4000-8000 Euro) for legal persons. Even though many different actors have the competence to fine criminal offenses (National Environmental Guard, Forest Guard, national and local police forces), it is impossible to enforce. Agents rarely catch perpetrators in the act or arrive on the scene in time.

Basel Convention since 1991, and the Regulation 1013/2006 of the European Parliament and of the Council on Shipments of Waste (14 June 2006) are also directly applicable. Governmental Decision 788/2007 entrusts the enforcement of the rules of the Convention and of the Regulation to the National Environmental Guard, and sanctions illegal imports, exports, transits and waste transfers with a fine of 30000-50000 RON (6000-10000 Euro). However, just like in the case of illegal dumping, a large part is unnoticed and unsanctioned due to the lack of manpower.

Organisations responsible in case of waste entering surface water

The National Agency for Environmental Protection (NAEP)¹⁹⁶, National Environmental Guard and the National Administration of Romanian Waters can all ascertain that a major accidental or intentional act of water pollution has occurred. They must notify the county-level representatives of the NAEP which is authorised to take the necessary reparatory measures outlined in **EGO 68/2007 on environmental accountability**, preventing and remedying damage to the environment. If those responsible are found, the incurred

¹⁹²see Act 52/2003 on Transparent Decision-Making in Public Administration

¹⁹³ Governmental Decision 349/2005 on Waste Disposal

¹⁹⁴ see Article 15 of GD on Waste Disposal

¹⁹⁵ Act 211/2011

¹⁹⁶ Agentia Nationala pentru Protectia Mediului

remediation costs will be recuperated based on the Polluter Pays Principle. Depending on the damage caused, further administrative, civil or even criminal sanctions can be applied.

Nature conservation

Habitat conservation in Romania is governed by **EGO 57/2007 on the Establishment, Protection and Governance of Protected Natural Areas, and the Conservation of Natural Habitats, Flora and Wild Fauna**. Annex 1 distinguishes 12 types of protected areas in Romania: scientific reservations, national parks, natural monuments, nature reserves, national parks, biosphere reservations, wetlands of international importance (Ramsar), natural sites of universal natural heritage, special protection areas, special conservation areas for birds, sites of EU importance and geoparks. Annex 2 lists the types of natural habitats to be protected and conserved, while Annexes 3-5E lists flora, fauna and birds of national and international importance based on the IUCN Red List. Sites of EU importance, special conservation areas and special protection areas are all part of the Natura 2000 system. EGO Chapter III regulates habitat conservation and the national transposition of the EU Habitats and Birds Directives. Article 31 of the EGO describes the protection of natural habitats and wildlife of EU importance which is achieved by declaring sites of EU importance and special protection areas. For birds' protection special conservation areas are created. For terrestrial or aquatic natural habitats and protected flora and fauna, protected areas of national importance are created or protective measures outside the protected natural areas are applied. Wetlands of international importance can gain this status through dedicated legislation, or a governmental decision based on documentation requested by the authorised international bodies to recognise them as such. Management of these zones is carried out in accordance with the provisions of the Ramsar Convention for their conservation and sustainable usage of the natural resources they generate. National/regional action plans are developed for each species in accordance with the international action plans. The environment protection authority establishes the conservation monitoring system for natural habitats and species of wild flora and fauna of EU interest. Based on the results of the evaluation, modification of the national list of Natura 2000 sites can be proposed.

Rules concerning the protection, treatment and management of special protection areas, and the framework of possible actions at the national, regional and local level

Special conservation areas are protected natural areas of EU interest with the goal to conserve, maintain, and restore habitats and/or populations of species. They are specifically created for the conservation of certain types of natural habitats and habitats of the species included in Annexes 2 and 3 of the EGO. The management of special conservation areas necessitates adequate management plans specific to the established sites or integrated into other management plans. Legal, administrative or contractual measures are also necessary to avoid the deterioration and disturbance of protected natural habitats and species. Any plan or project impacting the area is subject to an evaluation of potential affects.

A protected natural area to qualify as a special conservation area, must undergo a two-phase evaluation and selection process. During the first phase, natural habitat sites enumerated in Annex 2 and species established in Annex 3 must be evaluated based on their relative importance. The evaluation criteria for natural habitats enclosed in Annex 2 include the degree of representativeness of the habitat from the respective area; the surface area occupied by the habitat in comparison to the total area occupied by the habitat on the territorial level of the national territory, the state of conservation of structures and functions of the type of habitat in question, the possibilities of recovery and reconstruction; and the global evaluation of the value of the area for the conservation of the type of natural habitat. The criteria for the evaluation of sites containing the species enumerated in Annex 3 are the size and density of species present in the respective area in comparison with populations present on the level of the whole country; the state of conservation of the features of the habitat which is important for the species in question and the possibilities of recovery; the degree of isolation of the populations present in the area compared to the natural distribution of the species; and the global evaluation of the value of the site for the conservation of the species in question. Phase two is the evaluation of the EU importance of the sites included on the national list. All sites identified by member states in phase 1 which contain priority types of habitats or species will be considered sites of EU importance. Sites which do not contain priority types of habitats or species are assessed on their relative value on the national level, geographical situation, total area, number of natural habitats and species present on the site

and their global ecological value for the biogeographical regions concerned. After they are recognised by the European Commission, special conservation areas are established by governmental decision and form a part of the European Natura 2000 network.

Bilateral and multilateral agreements and cooperation protocols

Romania has bilateral agreements on water conservation and water management with all its neighbours. The **Accord** between the Romanian People's Republic (today Romania) and the Federal Socialist Republic of Yugoslavia (today the Republic of Serbia) **on the Hydro-technical Problems of Hydro-technical Systems and Border Waters or Transboundary Waters** (7 April 1955) is the oldest agreements.

The **Accord** between the Government of Romania and the Government of Ukraine **on Cooperation in the Domain of Transboundary Water Management** (30 September 1999). The parties cooperate on water management for the protection and usage of transboundary waters. They agreed to maintain, and if possible, improve the quality of the waters concerned; take measures and make efforts in reducing the pollution of transboundary waters; and agreed the Polluter Pays Principle as the basis of water quality protection. The parties established economic, scientific and technological cooperation; rules on the usage of water resources; protection against pollution; mutual assistance in flood prevention and arranged to exchange information.

The primary objectives of the **Agreement** between the Government of Romania and the Government of the Republic of Hungary **on the Protection and Sustainable use of Transboundary Waters** (15 September 2003) are to reach a good state regarding the waters concerned; prevent the quantitative and qualitative changes of waters; control pollution; prevent, combat, limit and control damaging transboundary effects (flooding, drought, accidental pollution); ensure the sustainable use of water; and promote common research and development in the fields touched upon by this Accord. The underlying principles of the Accord are the equitable and rational usage of water, precaution, reciprocity, good-faith and the Polluter Pays Principle. The Accord also set up a bilateral Hydrotechnical Committee with a wide range of responsibilities.

The **Agreement** between the Ministry of the Environment and Water Management of Romania and the Ministry of the Environment and Waters of Bulgaria **on Water Management Cooperation** (12 November 2004) requires parties cooperate on water management based on the principles of equality, reciprocity and mutual advantage. The principal domains of this cooperation are water management, integrated management of coastal areas, the protection of water resources, treatment of municipal and industrial wastewater, scientific research and the implementation of regional and international conventions and accords on the protection and usage of waters of which both Romania and Bulgaria are a part of. Cooperation includes data exchange on water monitoring; information and experience on sewage treatment; training and exchanging of experts, researchers and NGOs; common scientific research and development; and developing projects necessary for integrated water management. A bilateral committee checks and implements the provisions of this Accord.

The **Agreement** between the Government of Romania and the Government of the Republic of Moldova **on Cooperation and Sustainable Usage of the Prut and Danube Rivers** (28 June 2010) contains provisions about cooperation areas and establishes a committee to implement the provisions.

Furthermore, Romania is part of multilateral accords such as the **Danube River Protection Convention**, (29 June 1994). The signatories include countries situated along the Danube River who agreed to cooperate on water management issues and set up the **International Commission for the Protection of the Danube River** (ICPDR). The ICPDR's objectives ensure sustainable water management and pollution and floods control along the Danube. It is competent to solve any other problems entrusted to it as mandated by the signatories.

Bulgaria

Surface water conservation

Water is essential for human, animal and plant life, and for the economy. Its protection and management transcend national boundaries. The EU Water Framework Directive (WFD) establishes a legal framework to protect and restore clean water in the EU, and to ensure its long-term sustainable use. It is complemented

by more specific legislation, such as the Drinking or Bathing Water Directive, Floods Directive and the Marine Strategy Framework Directive, as well as by international agreements.

Water is not a commercial product but a common good and a limited resource that needs to be protected and used in a sustainable way, in terms of both quality and quantity. It is, however, under pressure from many different uses from a variety of sectors such as agriculture, tourism, transport and energy. In 2012, the European Commission launched the Blueprint to Safeguard Europe's Water Resources, a long-term strategy which aims to ensure the availability of a sufficient level of quality water for all legitimate uses by better implementing current EU water policy, integrating water policy objectives into other policy areas, and filling gaps in the current framework. It envisages the establishment by the Member States of water accounts and water efficiency targets, as well as the development of EU standards for water reuse.

Regarding the legally binding acts of the EU in relation (for EU legislation see Chapter on **International Legislation**) to the Bulgarian law¹⁹⁷, it is necessary to consider their specifics and how well they have been integrated into Bulgarian environmental law. The relevant European directives were transposed into Bulgarian as follows:

The Water Act and related ordinances introduced the requirements of Directive 2000/60/EC (WFD) establishing a framework for community action in the field of water policy, Directive 2007/60/EC (Floods Directive) regarding evaluation and flood risk management, and also Art. 11 and 12 of Directive 2008/105/EC setting standards for environmental quality in the field of water policy.

Ordinance SG No. 94 of 30 November 2010 (amended SG No. 55 of 7 July 2017) on the Protection of the Environment in Marine Waters, transposed the Marine Strategy Framework Directive 2008/56, and prepared and implemented the Marine Strategy. Decree No 273 concerns the adoption of the Ordinance on the Protection of the Environment in Marine Waters. It also established an Advisory and Coordination Council for the protection of the environment in the Black Sea and created the management tools necessary to implement the Marine Strategy and Programme of Measures.

Ordinance on Environmental Quality Standards for Priority Substances and certain other pollutants (promulgated, SG No. 88 / 9.11.2010) transposed the Environmental Quality Standards Directive 2008/105/EC into Bulgarian legislation.

Ordinance No 5 on Bathing Water Quality Management (amended, SG No. 5 of 18 January 2013) introduced the requirements of Directive 2006/7/EC of European Parliament and of the Council.

Ordinance No 9 on the Quality of Water Intended for Drinking and Household Purposes (amended and supplemented, SG No. 6 of 16 January 2018) introduced the requirements of Directive 98/83/EC on the Quality of Water Intended for Human Consumption; Directive 2013/51/EURATOM laying down the requirements for protection of public health with regard to radioactive substances in water intended for human consumption; and Directive EU 2015/1787 of 6 October 2015 amending Annex II and Annex III to Directive 98/83/EC on the quality of water intended for human consumption (promulgated, OB, L 260, 7 October 2015).

Ordinance No 2 on the Protection of Waters from Pollution with Nitrates from Agricultural Sources (promulgated, SG No. 27 / 11 March 2008) introduced the requirements of Directive 91/676/EEC on the Protection of Waters against Pollution caused by Nitrates from Agricultural Sources into national law.

Water management – water conservation

The Bulgarian Water Act, Environmental Protection Act, Protected Areas Act and Black Sea Coast Spatial Development Act govern the country's flood control regulations. Combined, they have implemented the following flood prevention measures such as land use that takes floods into consideration and afforestation to increase water retention and prevent erosion; ensuring sufficient capacity of surface waters and draining

¹⁹⁷ EU Water Framework Directive 2000/60/EC, Drinking Water Directive 98/83/EC, Bathing Water Directive 2006/7/EC, Environmental Quality Standards Directive 2008/105/EC, Urban Waste Water Treatment Directive 91/271/EEC, EU Nitrates Directive 91/676/EEC, EU Floods Directive 2007/60/EC, Marine Strategy Framework Directive (MSFD) 2008/56/EC

of ground waters; sustainable spatial planning and protection of urbanised territories; utilisation of land, buildings and infrastructure based on the flood risk, including restrictions or prohibitions on the land use in the area that may be flooded; stricter requirements for buildings and the existing infrastructure in floodplain areas; creation of a stable legal, administrative and economic framework including development and application of new legal documents and standards for flood protection; protection of the population; institutional capacity building; development and update of the Flood Risk Management Plan (FRMP) and coordination with the River Basin Management Plan (RBMP); communication to the public, training and research and development such as providing information on undertaking adequate protective actions; relevant and effective scientific research and actions; staff training and requalification; increasing public awareness, preparation and involvement; development and operation of early warning and forecasting systems; establishing required actions before and after a flood; assessment of flood damages and compensation; increasing the water retention function of reservoirs; construction of river dikes; reconstruction or removal of dikes and other facilities; construction of temporary mobile barriers; sewage networks; and maintenance or reconstruction of older, or construction of new coastal protection facilities.

Flood prevention and notification system

The assessment and management of flood risk in Bulgaria is subject to the European Floods Directive (FD) 2007/60/EC. The Floods Directive was transposed into national legislation with the amendment of the Water Act in August 2020.

The flood risk management plans (FRMP)¹⁹⁸ address all aspects of risk management, focusing on prevention, protection and preparedness. Preparedness includes issuing flood forecasts, establishing early warning systems and considering the characteristics of each Basin Directorate for a period of six years. A programme of specific measures or a combination of measures is required to address the identified problems and achieve the objectives set for each identified area with significant potential flood risk. The FRMPs are adopted by the Council of Ministers and are available on the website of each BD and MOEW, according to the Water Act.

Various institutions undertake different activities related to floods, for example the National Institute of Meteorology and Hydrology monitors, forecasts and issues warnings for floods; Civil Protection Agency holds planning development activities, exercises, training, etc., and implements flood mitigation measures in cooperation with local municipalities during flood periods; Permanent State Commission for Civil Protection against Accidents and Disasters can mobilise resources in case of catastrophic flooding, including police and army forces. It also conducts regular inspections and maintenance of flood protection facilities like levees, protection walls, retention reservoirs, bridges, and conducts river channel cleaning activities; and Basin Authorities at the Ministry of Environment and Waters have seen their responsibilities and powers significantly expand under the new Water Law, including issuing building permits with input from local municipalities.

National Coordination Centre coordinates and controls the work of the institutions managing water resources, waste and air quality. The Centre monitors the water levels behind dams, analyses the inflow and outflow of water and coordinates the work with the various institutions. Daily information is also collected from all operators who use water from complex and significant dams.

Waste management

The Waste Management Act (SG 53 of 2012, last amended SG 19 of 2021) transposes the requirements of the EU Waste Framework Directive 2008/98/EC. This Act defines the environmentally sound management of waste as a combination of rights, obligations, decisions, acts and activities related to its generation and

¹⁹⁸ FRMP are prepared in accordance with Article 7 of the FD and based on Art. 146 of the Water Act

treatment. The Act sets out the requirements for goods that generate hazardous or ordinary wastes during their production process or after their final use. The hierarchy of waste management is a fundamental principle of waste management activities and determines the priority order of prevention, reuse, recycling, other recovery, and finally disposal in landfills.

The EU Directive 2018/851 of 30 May 2018 amends Directive 2008/98/EC by introducing the Polluter Pays Principle in Article 14, and Extended Producer Responsibility in Articles 8 and 8a. Article 8 paragraph 1 states that ‘in order to enhance re-use, waste prevention, recycling and other recovery, Member States may take legislative or non-legislative measures to ensure that any natural or legal person who, by occupation, develops, manufactures, processes, treats, sells or imports products (manufacturer of the product) has extended producer responsibility. In accordance with the Polluter Pays Principle (Article 14), the costs of waste management, including the infrastructure necessary for its operation, are borne by the original producer of the waste or by the current or previous holders of the waste.’

A definition of an ‘extended producer responsibility scheme’ is introduced to clarify that this is a set of measures taken by Member States to oblige producers to take financial or financial and organisational responsibility for waste management, including collection, sorting and treatment operations. In accordance with this principle, product manufacturers must take responsibility, including financing for prevention and reduction of waste generated during the production of their products; design and development of reusable products that are technically durable, and do not contain or have a limited content of materials and substances that pose a risk to the environment; and developing markets for the reuse and recycling of waste generated after the final use of products placed on the market.

Extended Producer Responsibility policy is characterised by a shift of responsibility (physical and/or economic, in whole or in part) in ascending order from the producer to municipalities. It also provides incentives for producers to take environmental considerations into account when designing their products. While other policy instruments typically aim at an isolated point in the chain, Extended Producer Responsibility seeks to integrate indicators related to the environmental performance of products and production processes throughout the product chain. The responsibility is both to ensure the overall logistics of the generated waste management activities to meet the requirements of waste legislation and to finance these activities. Producers and suppliers of goods and services may organise proper waste management at their own installations and facilities themselves or conclude a written contract with persons who have the right to perform these activities. In either case, a permit or registration document under the WMA or a complex permit under the EPA is required.

It is also the responsibility of producers and suppliers of goods and services to take into account the waste hierarchy; keep records of the waste in accordance with normative acts; provide instruction and periodic training to staff working with hazardous waste; envisage and implement the necessary measures for non-proliferation of pollution after the closure of the sites and waste processing; ensure environmental monitoring; and ensure immediate access of the control bodies to the facilities in which waste is generated and to the facilities for storage and treatment of waste and to the documentation on the waste.

This scheme is a typical example of the application of the Polluter Pays Principle.

All persons in the scheme are included in public registers:

- A register of persons or legal entities subject to inspections and control under each of the ordinances of the Waste Management Act established in each Regional Inspectorate of Environment and Water (RIEW);
- The EEA maintains registers of the persons or legal entities holding permits and registration documents for carrying out waste activities; waste traders and brokers; landfills; and a register of waste treatment facilities.
- The MOEW maintains registers of persons or legal entities with a complex permit under the EPA, and a register of persons or legal entities operating recycling facilities by waste stream.
- The EEA maintains a National Waste Information System. Under Ordinance №1 of 4 June 2014, the EEA is responsible for collecting information on waste management procedures, providing templates

for information collection, and keeping public registers regarding all ordinances regulating the management of waste. Ordinance №1 defines the type of reporting documents and the procedure for their submission. The information is collected in quarterly and annual reports.

Although Bulgaria has adopted a good legal basis for calculating fair waste collection fees, it has yet to put the Polluter Pays Principle into practice with regards to waste management.

For other Ordinance concerning waste disposal see Appendix 1.

Regulations restricting/sanctioning illegal dumping

The Convention for the Protection of the Black Sea against Pollution defines dumping in Article 2 as any deliberate dumping of waste or other substances from ships or aircraft, or any intentional sinking of ships or aircraft. Article 10 requires that the contracting parties take all appropriate measures and cooperate in preventing, reducing and controlling pollution caused by dumping, in accordance with the Protocol for the Protection of the Marine Environment of the Black Sea against Dumping - an integral part of this Convention. It also states that the contracting parties shall not allow dumping by natural or legal persons from non-Black Sea countries in the territories of their jurisdiction.

For other international regulations restricting/sanctioning illegal dumping see Appendix 1.

Which organisations can act, and what tools can they use if considerable amounts of waste enter the river?

The Environmental Protection Agency (EPA) specifies the competent authorities responsible for enforcement of environmental law. The MOEW and the Executive Environmental Agency (EEA) are competent at national level. The EEA is an administration under the Minister of Environment and Water that coordinates the management and information functions regarding the control and protection of the environment in Bulgaria. It designs and manages the National Environmental Monitoring System. On a regional level, the Basin Directorates for water management of the east and west Aegean Sea, Black Sea and the Danube; national parks departments; mayors, municipal authorities and the district governors; and regional inspectorates of environment and water implement environmental policies.

The regulatory authorities are entitled to oversee compliance with environmental legislation. They can institute preventive measures (to prevent violations), implement current measures (to suspend an ongoing violation) and determine follow-up measures (to remedy the negative consequences of violations, which may be implemented as an administrative liability penalty). If violations are ascertained upon inspection, the competent administrative authority may (depending on the ascertained violation) draw up written statements for the administrative violations and subsequently issue fines as well as various written orders imposing coercive administrative measures.

The control powers granted to the competent regulator under the EPA are broad. The competent authority can enter and access a site in order to conduct an inspection; require submission of environmental information, documents and written explanations (e.g., operators); make measurements or perform laboratory examinations (or both); and perform analysis (e.g. taking samples from the sources of pollution).

The competent authorised persons may request and obtain assistance from the state and municipal authorities and other entities. The competent bodies may also impose financial sanctions and coercive administrative measures. The executive authorities and the respective administrations, organisations, entities and natural persons are obliged to help the regulatory authorities exercising control in performance of the above-mentioned functions.

At a national level, the said powers are implemented by the MOEW or by authorised officials, and at the regional level by the regional inspectorates of environment and water directors, Basin Directorate directors, national parks directors, district governors and municipality mayors, or by other authorised persons.

Nature conservation

The **Law of the Sea, Inland Waterways and Ports of the Republic of Bulgaria**¹⁹⁹ aims to ensure the use of the Black Sea and the Danube River in the interests of international cooperation between Black Sea and Danube countries by facilitating sea and river connections, providing safe navigation, protecting the marine and river environment during navigation, and maintaining the ecological balance. On 28 April 2021, a draft amendment was submitted to the National Assembly introducing the requirements of Directive EU/ 2019/ 883 on port reception facilities for ship-generated waste. The concept of 'passively caught litter' caught in fishing nets during fishing operations is envisaged to be introduced in point 37a.

The **Fisheries and Aquaculture Act** regulates the relations associated with ownership, organisation, management, use and conservation of fishery resources in the waters (marine and freshwater) of Bulgaria, including trade issues and those related to aquatic organisms.

The **Environmental Protection Act (EPA)** regulates the regimes for the preservation and use of environment; controls the status and use and the sources of its pollution and damage. It establishes standards for emissions and environmental quality; implements environmental impact assessments (EIA); issues permit for prevention, restriction and control of pollution; declares and manages of territories under special protection; develops a system of environmental monitoring; introduces economic regulations and financial mechanisms for environmental management; and regulates the right and the obligations of the state, municipalities, corporate bodies and individuals. The EPA is based on the principles of sustainable development; prevention and reduction of the risk to human health; priority of pollution prevention over follow-up removal damage remediation; public participation and transparency in the environmental decision-making process; informing citizens about the status of the environment; the Polluter Pays Principle; preservation, development and protection of the ecosystems and their intrinsic biological diversity; restoration and improvement of the quality of environment in polluted and damaged areas; prevention of pollution and damage to pristine areas and other unfavourable impacts on them; integration of environmental protection policy in the sectors and the regional development and economic policies; and access to environmental justice.

The **Biological Diversity Act** regulates the relations among the State, municipalities, and legal and natural persons in respect to the conservation and sustainable use of biological diversity in Bulgaria. It has the following purposes: conservation of natural habitat types and habitats of endangered, rare and endemic plant and animal species representative to Bulgaria and Europe within a National Ecological Network; conservation of protected Bulgarian flora and fauna, as well as those that are subject to use and trade; conservation of the genetic resources and the diversity of plant and animal species outside their natural surroundings; regulation of the introduction of non-native species and the reintroduction of native plant and animal species into the wild; regulation of trade in endangered species; and conservation of centuries-old and remarkable trees.

The **Protected Areas Act** regulates the categories of protected areas, the assigned use, and the regime for the protection, use, designation and management of said areas.

The **Waste Management Act** implements the EU Waste Framework Directive (2008/98/EC). This involves creating conditions for improving waste management in Bulgaria without risking damage to human health or the environment, as well as increasing volumes of recycled and recovered waste.

The objective of *the Water Act and its relevant regulations* is to provide an integrated water management system in the public interest and to protect human health. The Act also aims to provide sufficient surface and groundwater of good quality for sustainable, balanced and reasonable water use; reduce water contamination; protect surface and groundwater including the Black Sea; halt pollution of the aquatic environment with natural or synthetic substances; reduce water discharge, emissions and discharge of priority substances; and prevent and reduce the harmful effects of water to human well-being, the environment, cultural heritage and economic activity.

The Marine Strategy of the Republic of Bulgaria implements the EU Marine Strategy Framework Directive 2008/56/EU in Bulgarian legislation, and implements the commitments of Bulgaria under Art. 1, items 1 and

¹⁹⁹ SG. No. 12 of 11 February 2000, last amended SG. №17 of 26 February 2021

2 of the MSFD. The initial assessment of the state of the marine environment (Art. 8), the definitions of good environmental status of the marine environment – GES (Art. 9) and the identification of environmental objectives and related indicators (Art. 10) represent the first part of the Marine Strategy, developed in 2012. The second part of the Marine Strategy is the monitoring programme (Art. 11) from 2014. The draft Programme of Measures was developed in accordance with Article 13 (1) of the MSFD and Art. 12 of the Ordinance for Protection of Marine Waters adopted by № 273 of 23 November 2010.

Natura 2000. The Habitats and Bird Directives require Sites of Community Importance, which upon the agreement with the EU, become Special Areas of Conservation for different species and habitat types (e.g. particular types of forest, grasslands, wetlands, etc.). Together, Special Protection Areas and Special Areas of Conservation form the Natura 2000 network of protected areas. Bulgaria's Natura 2000 network currently involves 120 protected areas for the conservation of wild birds covering 23.1% of its territory, and 234 protected areas for the conservation of natural habitats which cover 30.3 % of its territory.

Rules concerning the protection, treatment and management of special protection areas

The **Biological Diversity Act** was adopted in 2002. The law regulates the protection of habitats, species of plants and animals and their biotopes, their gathering and the trade, and the elaboration of action plans for them. The Biological Diversity Act introduces the requirements of the Habitats and the Birds Directives in national practice. The Act envisages the establishment of a National Ecological Network including protected zones (Natura 2000 sites) and protected areas. The National Ecological Network will include already identified priority CORINE sites, Ramsar sites, Important Plant Areas and Important Bird Areas.

The **Protected Areas Act** (1998) designates protected areas to preserve the biodiversity and natural processes within certain ecosystems and typical or remarkable geographic sites and landscapes (Art.4, Par.1, Protected Areas Act). The Act specifies the following categories of protected areas (PA): reserve, national park, nature monument, maintained reserve, nature park and protected site. The Protected Areas Act stipulates that development of protected area management plans requires the integration of biodiversity conservation with economic development through a participatory planning process.

The **Spatial Development Act** (Jan 2001, amend. SG. 49/13 Jun 2014) includes a section on 'Spatial Development of Green and Forest Areas'. Articles include, for example that a municipal council can adopt an ordinance for construction and protection of green areas in its territory, and that remarkably old trees or old-growth forest areas can be protected and entered into the register of Art. 113, par. 1 of the Biological Diversity Act.

The **National Action Plan for Conservation of Wetlands of High Significance in Bulgaria 2013–2022** sets protection, maintenance and restoration priorities as well as horizontal measures for the conservation and sustainable use of wetlands. The plan includes measures for spatial and functional re-connection of wetland habitats in line with the concept of green infrastructure.

The **National Prioritised Action Framework for NATURA 2000** (NPAF) is a strategic planning document that defines the national and regional funding needs and the conservation and development priorities for protected sites under the NATURA 2000 network. It also facilitates their integration into programmes financed by EU financial instruments. Funding included in programmes for Natura 2000 sites should be in accordance with the measures of the NPAF and their already identified sources of funding.

The **National Ecological Network** concept was set up with the adoption of the Biological Diversity Act 2002 in response to the requirements for establishing the Natura 2000 network in Bulgaria. However, it exceeds the scope of Natura 2000 by including all those areas identified as protected according to the 6 IUCN categories; including those of more local biodiversity significance. The National Ecological Network (incl. Protected Areas and Natura 2000 sites) covers around 37% of the country's territory, thus ensuring effective in situ conservation of biodiversity. However, the management plans of many of the protected areas and Natura 2000 sites have to be elaborated or updated. The first transboundary protected wetlands under the Ramsar Convention were announced in 2013, with shared management between Bulgaria and Romania. The Secretariat of the Ramsar Convention has recognised the following, already earlier listed Ramsar Sites and part of the Lower Danube Green Corridor: Lake Călărași (Iezerul Călărași) (RO), Srebarna (BG), Suhaia (RO),

Belene Islands Complex (BG), Bistret (RO) and Ibisha Island (BG). With the designation of these six important wetlands as Transboundary Ramsar Sites, the governments of Bulgaria and Romania have declared their readiness and shared responsibility for joint coordinated management of these sites.

Bilateral and multilateral agreements and cooperation protocols

Bulgaria has ratified and become a party to most of the important international environmental conventions, international treaties and bilateral and multilateral agreements, including the:

- **Convention on Protection and Sustainable Use of the Danube River** (Sofia Convention) forming the overall legal instrument for cooperation on transboundary water management in the Danube River Basin. It ensures managing and using Danube River Basin surface waters and groundwater sustainably and equitably.
- **Convention on Environmental Impact Assessment in a Transboundary Context** (Espoo Convention);
- **Helsinki Convention on the Transboundary Effects of Industrial Accidents.**
- **Berne Convention on Conservation of European Wildlife.**
- **European Landscape Convention** (Florence Convention) for European cooperation on landscape.
- **Convention on Biological Diversity** promotes the conservation of biodiversity and ensures the sustainable use and equitable sharing of genetic resources.
- **Ramsar Convention on Wetlands** encourages the designation of sites containing representative, rare or unique wetlands, or wetlands that are important for conserving biological diversity. Designated sites are added to the Convention's List of Wetlands of International Importance and become known as Ramsar Sites. In designating a wetland as a Ramsar Site, countries agree to establish and oversee a management framework aimed at conserving the wetland and ensuring its wise use.
- **Convention for the Protection of the Black Sea against Pollution** (Bucharest Convention);
- A **Joint Declaration** was signed on 20 March 2012 in Ankara between the Bulgarian Ministry Environment and Water and the Turkish Ministry of Forestry and Water Affairs for cooperation on water resources.
- a **Ministerial Declaration for Cooperation** was signed on 31 May 2018 in Burgas during the celebration of European Maritime Day by which the Black Sea countries united their efforts for sustainable development while maintaining the 'human - economy - nature' balance. It was the first serious step for the development of the blue economy in the Black Sea region.

Ukraine

Surface water conservation

The **Water Code** of Ukraine regulates legal relations in order to ensure conservation, scientific substantiation, rational use of water for the needs of the population and industries, protection of water from pollution, clogging and depletion, prevention of harmful effects of water and elimination of their consequences. The water sector of Ukraine includes all waters (surface water, groundwater, inland and territorial sea) in the territory of Ukraine.

According Act of Ukraine on Environmental Protection, regulation is carried out in order to establish a set of mandatory rules, regulations, requirements for environmental protection, use of natural resources and environmental safety. All disputes concerning water resources are dealt with by state bodies of environmental protection²⁰⁰. The Act also states the environmental standards of maximum permissible emissions and discharges, and the levels of permissible harmful effects of physical and biological factors. Environmental standards must consider the requirements of sanitary and hygienic and anti-epidemic regulations. If necessary, stricter standards for maximum permissible concentrations of pollutants and other harmful effects on the environment may be established for resort, health, recreational and other individual areas. Environmental standards are developed and implemented by the central executive body, which

²⁰⁰ Water management, geology, local Councils of People's Deputies, court, arbitration court or arbitration court

ensures the formation of state policy in the field of environmental protection, and other authorized state bodies in accordance with the legislation of Ukraine.

Discharge of wastewater into water bodies is allowed only in the presence of standards of maximum permissible concentrations and established standards of maximum permissible discharge of pollutants. Water users are obliged to take measures to prevent the discharge of wastewater or its cessation, e.g. if it can be used in circulating, repeated and sequential water supply systems; contain valuable waste that can be recovered; contain substances for which maximum permissible concentrations have not been established; the volume of pollutant discharges exceeds the maximum allowable standards; lead to an increase in water temperature of the water body by more than 3 degrees Celsius compared to its natural temperature in summer; are vat residues, sludges formed as a result of their cleaning and disinfection.

Enterprises, institutions and organisations that operate drainage systems to eliminate flooding, backwatering or secondary salinisation of irrigated areas must use effective technologies to reduce natural and man-made pollution of drainage waters before discharging them into water bodies. Enterprises, institutions and organisations that have industrial wastewater or mine, quarry or mine drainage water must use efficient technologies for its disposal, recovery and rehabilitation.

The list of acts regulating the maximum allowable discharges (GDS) of wastewater is in Appendix 1. GDS substances with return water to water bodies are developed and installed in accordance with Art. 35 of the Water Code of Ukraine.²⁰¹ Existing enterprises (organizations), - water users that discharge wastewater in excess of the established GDS substances, are obliged to develop action plans to achieve GDS.²⁰² In accordance with Art. 3 of the Act of Ukraine on Environmental Protection the condition for determining the GDS of substances is the priority of environmental safety requirements, mandatory compliance with environmental standards and regulations for the use of water resources.

In conjunction with the entry into force of the legislation on state water supervision in Ukraine on 1 January 2019, the European system²⁰³ of water resources supervision was introduced. This system will provide results that optimize the assessment of environmental risks, the effects of global climate change and eutrophication, as well as provide an important step in understanding the adaptive changes in evolutionary-conservative signalling mechanisms of resistance to stressors. Water quality standard²⁰⁴ has expanded the range of indicators that are monitored. There are several types of water supply: centralized, decentralized and groundwater.

In Ukraine, there are 2 documents regulating the quality of drinking water: Public Sanitation Regulations and Standards of Ukraine 2.2.4-171-10 "Hygienic requirements for drinking water intended for human consumption" and ISO (in Ukrainian DSTU) 7525: 2014 Drinking water. The quality of the decentralised water supply is periodically monitored by the central executive body.

During the implementation of special water use to meet the drinking and household needs in the order of centralized water supply, enterprises, institutions and organizations in charge of drinking and domestic water supply systems, take water directly from water bodies in accordance with approved water intake projects. These enterprises, institutions and organizations are obliged to constantly monitor the quality of water in water bodies, maintain the sanitary protection zone of the water intake and notify the central executive body

²⁰¹ Water Code of Ukraine dated 06.06.1995, № 213/95-VR

²⁰² During the implementation of the developed and agreed plans or their separate stages, enterprises (organizations) carry out wastewater disposal on the basis of permits for special water use, which indicate temporarily agreed discharges of substances with wastewater at each stage of water protection measures.

²⁰³ This system will provide results that optimize the assessment of environmental bio risks, the effects of global climate change and eutrophication, as well as provide an important step in understanding the adaptive changes in evolutionary-conservative signalling mechanisms of resistance to stressors.

²⁰⁴ On February 1, 2015, national standard of Ukraine DSTU 7525: 2014 "Drinking water. Requirements and methods of quality control", ISO. This standard implements the provisions of the Law of Ukraine "On Drinking Water and Drinking Water Supply", DSanPiN 2.2.4-171-10 "Hygienic requirements for drinking water intended for human consumption", the main requirements of the Directive of the Council of the European Union №98 / 83 EU from 03.11.1998 on the quality of water intended for human consumption, the WHO Guidelines for Quality Assurance of Drinking Water of 2011 and the document of the Alimentarius Commission "General standard for bottled / packaged drinking water (other than mineral water)" CODEX STAN 227- 2001.

implementing state policy in the field of sanitary and epidemiological well-being and in the field of environmental protection.

Water management – water conservation

The State Agency of Water Resources of Ukraine, as a specially authorized central executive body, carries out public administration in the field of water management and land reclamation. Within the framework of the "Comprehensive program for the protection of rural settlements and agricultural lands from the harmful effects of water for the period up to 2010 and the forecast until 2020" there is a complex of **flood defences**, which includes 3.5 thousand km of dams, 1.2 thousand km of shore protection structures, and more than 600 pumping and compressor stations for pumping excess water. The complex of protective structures on rivers and reservoirs is **insufficient** and requires significant reconstruction and development²⁰⁵.

Hydraulic, linear and hydrometric structures, engineering and fortification works may be carried out on the grounds of the Water Fund. The location and procedure of these works are determined in accordance with the projects agreed with the regional, municipal state administration, environmental executive bodies.²⁰⁶

One of the priorities of Ukraine's environmental policy is to harmonise Ukrainian water legislation with EU legislation²⁰⁷ for the implementation of an integrated river basin model for water resources management and flood management.

The system of integrated water resources management based on the basin principle distinguishes several measures that support the adaptation of EU legislation on flood management, such as management of water resources to reduce surface runoff (use of permeable pavements, plantations), surface runoff management (use of water accumulation basins, wetlands, reservoirs), increasing the transport capacity of rivers (bypass devices, deepening or widening of riverbeds), distribution of rivers and population (land management, construction of dams, flood defences, houses on stilts), precautionary measures during floods (flood monitoring, flood forecasting, early notification of the population about the development of the flood situation, taking urgent measures to strengthen the dams, evacuation), compensation for damages caused by floods (consulting, compensation or insurance). The creation of automated information and measurement systems for flood and **flood forecasting** is an important component of integrated flood management in accordance with the Floods Directive.

Negative consequences of floods are possible in 27% of Ukraine, where almost a third of the population lives. The mountainous and foothill areas of the Carpathians are the most affected areas. The greatest damage is caused by flash floods, which are fast-onset and sudden, with up to 10% water yield, and which have become more frequent recently. The most vulnerable areas to major floods are the southern (Tisza catchment area) and north-eastern (Dniester catchment area) slopes of the Carpathians. During periods of high-water levels, floods become threatening, often catastrophic. It has therefore become a priority for the state to develop effective measures to protect the territory of this region from the damaging effects of water.

In Transcarpathia, the **Automated Information and Measurement System for Flood Forecasting and Water Management** (AIVS-"Tisa"), jointly established by the Ukrainian-Hungarian parties, started operating in 2000 in the Tisza River basin. The main objectives of the AIVS-"Tisa" are - operational forecasting of flood water hydrographs of river basins using special mathematical, information and software tools; generation of reliable forecast information on flood parameters and their transmission in automatic mode to the competent alert services and flood protection units; provision of recommendations for management

²⁰⁵ Of particular concern is the technical condition of the complex of protective structures on the reservoirs of the Dnieper cascade, put into operation in 50-70 years, and the technical resource of which is almost exhausted. With the help of 32 pumping stations, this complex protects from flooding 102 settlements with infrastructure, agricultural lands on the area of 197.2 thousand hectares, the cities of Pereyaslav, Rzhyshev, Nikopol, Marhanets, Kamyanka-Dniprovsk, as well as unique minerals of manganese deposits and all the infrastructure of villages and settlements in the protected areas of the Dnieper.

²⁰⁶ The central executive body implementing state policy in the field of water management (except for land works, occupied by the seas, as well as work related to the construction, arrangement and maintenance of engineering and fortifications, fences, border signs, border clearings, communications), and the central executive body implementing state policy in the field of geological study and rational use of subsoil.

²⁰⁷ Directive 2000/60 / EC in the field of water policy "(Water Framework Directive) and Directive № 2007/60 / EC" On flood risk assessment and management "(Floods Directive)

decisions on safe flood discharge.²⁰⁸ There are 50 automated measuring stations in the Tisza river basin²⁰⁹, all of them are included in the single joint Ukrainian-Hungarian flood monitoring system AIVS- "Tisa". Data from online stations is automatically sent to Ukrainian and Hungarian water managers at five-minute intervals for management decisions. The operation of an automated information and measurement system has made it possible to quadruple the time available to make water management decisions during floods and to develop a modern approach to integrated water management. The operational data of the information measurement system during floods is an effective mechanism for balanced and coordinated decision-making by regional executive structures (regional and district administrations, water and road services, agro-industrial complex, territorial communities, etc.).

Waste management

The **Constitution of Ukraine**²¹⁰ and the Act of Ukraine on Local Self-Government of Ukraine, along with some additional legal instruments define the institutional mechanisms for waste management at the local level.

The **Waste Act**²¹¹ sets out the policy on waste management, while other legal instruments establish specific aspects of waste management and organisational frameworks.

The **Strategy of State Environmental Policy** was to determine the requirements to reduce by 50% the growth of hazardous waste by 2020, the reduction by 50% of the total amount of generated waste by UAH 1 million in GDP, increase in the amount of reusable waste by 50%, closure of solid waste disposal sites that do not meet environmental safety standards.

Section XI of the Constitution of Ukraine sets out the local institutional framework for waste management. The **Act on Local Self-Government** allows a great deal of flexibility in how communities can organise waste management and how waste management activities are provided and financed. They can, for example, provide waste management services themselves or enter into an agreement with districts and oblasts to set up a partnership to plan and provide waste management services. The existing institutional mechanisms for waste management have the disadvantage that the territorial communities have organised their waste management systems according to their competences as defined by the Act On Local Self-Government. In most cases, communities act autonomously in implementing waste management systems - systems that are mainly limited to simple waste removal and disposal, without taking into account the impact on the environment, public health, economic development or other aspects of waste management. As a result, the institutional framework of waste management in the region is characterised by:

- Low level of political support for councils at the community, district and oblast levels.
- Low level of administrative competence characteristic of the waste management sector.
- Low level of technical competence characteristic of the waste management sector.
- Insufficient understanding of the environmental, social and economic impact of inefficient waste management.
- Insufficient funding and understanding on the part of residents of the mechanisms of reimbursement of costs that occur.

Weak institutional capacity at local level in the waste management sector is a key obstacle to achieving the sector's priorities set at state level (e.g., recycling and the introduction of stricter environmental standards). The low level of priority also has a negative impact on the organisations providing such services, which also tend to have low production capacity and often poor equipment.

Disciplinary, administrative, civil or criminal rules may apply in the event of infringement of waste legislation

²⁰⁸ This system includes microwave radio relay communication between Uzhhorod (Ukraine) and Nyíregyháza (Hungary), which provides two channels of direct telephone communication; digital radio communication system for transmission of information from automated measuring stations; control point in the Center for collection and processing of information (Uzhgorod); automatic collection of hydrological and hydrometeorological data.

²⁰⁹ 30 - hydrometeorological, 13 - meteorological, 1 - water quality control in Tyachiv, 4 - monitoring of pumping stations, 2 - monitoring of sluices

²¹⁰ Section XI of the Constitution of Ukraine defines the institutional framework at the local level in the country regarding waste management issues.

²¹¹ " № 187/98-BP of 05/03/1998) as amended in 2002, 2005 and 2010

Legal and personal entities, as well as foreigners and stateless persons are obliged to compensate the damage caused by them as a result of violation of waste legislation. Disputes in the field of waste management are settled by the court. Ukraine's international treaties may provide for a different procedure for the settlement of disputes concerning the transboundary movement of waste.

Determining the composition of environmental offenses and crimes, the procedure for bringing the perpetrators to administrative and criminal liability for their commission are established by the **Code of Ukraine on Administrative Offences** and the **Criminal Code of Ukraine**. Civil liability provides for full compensation for damage caused in the event of a breach of environmental legislation. Persons who have suffered such damage are entitled to reimbursement of unearned income for the time necessary to restore the quality of the environment, to restore the reproduction of natural resources to a state suitable for their intended use. Criminal liability for environmental offences is the most serious type of liability.²¹² Section VIII of the Criminal Code of Ukraine provides for imprisonment of up to 10-12 years, for example, for intentional destruction or damage of state-protected areas and nature reserves by arson or other usually dangerous means, if it resulted in death or other serious consequences. Administrative liability is provided for in the Code of Administrative Offences of Ukraine and is accompanied by a fine. A warning may also be issued. Disciplinary liability for environmental offences is a type of legal liability applied to offenders who breach environmental regulations and requirements in the performance of their duties. The Labor Code of Ukraine provides for two types of disciplinary sanctions - reprimand and dismissal.

Adherence to the "**polluter pays**" principle and **extended producer responsibility** deserves special attention on the example of the problem of unregulated waste of electrical and electronic equipment, as well as used batteries and accumulators. At the end of October 2019, two bills (№2350 and №2352)²¹³ were submitted to the Parliament for implementing the EU legislation on waste management of electrical and electronic equipment, as well as used batteries and accumulators and create a system for separate collection and reuse of materials. If adopted, the changes should take effect from 2021.²¹⁴ The Association Agreement with the EU provides for Ukraine's obligation to harmonize its legislation with EU environmental legislation. The **National Waste Management Strategy** until 2030, approved by the Cabinet of Ministers in 2017, recognizes that these categories of waste are potentially hazardous to the environment and that the existing legal framework and infrastructure are insufficient. The provisions of the sectoral laws "On Waste" and "On Chemical Power Sources", although declaring the need for separate waste collection, do not provide a clear mechanism for achieving this goal. The model of regulation is quite similar in both projects, and it is based on the principles of "polluter pays" and extended producer responsibility. The role of local authorities related to this problem is a painful issue. The draft laws presented do not seem to sufficiently disclose the role of local authorities and the mechanisms for their cooperation with producers, importers, distributors and extended producer responsibility organisations. The concept of the draft laws stipulates that extended producer organizations will be responsible for the establishment of reception points, but the draft does not mention the possibility of participation in distributors' organizations. The performance of local government functions may require additional funding and, in the absence of other instructions in the bills, this will mean additional costs from local budgets or the passing on of these costs to consumers. **End users** will have more rights, primarily to receive information. Consumers are also required to dispose of their waste separately.

²¹² Thus, Annex XXX to Chapter 6 of Section V of the Agreement stipulates that Ukraine is obliged to implement Directive 2008/98 / EC as regards the establishment of a full cost recovery mechanism in accordance with the polluter pays principle and the principle of extended producer responsibility within 5 years of entry into force. According to the explanatory notes to Bills 2350 and 2352, they were designed to implement this directive. Directive 2008/98 / EC itself does not contain detailed regulations on waste electrical and electronic equipment, waste batteries and accumulators - the relevant provisions are contained in Directives 2012/19 / EC and 2006/66 / EC.

²¹³ Both bills are currently on the table, neither has been voted on at first reading. It is likely that the key ideas on extended producer responsibility will be included in Ukrainian legislation one way or another. The draft bills do not answer a number of questions, which could jeopardize the achievement of their declared objectives. Directives 2012/19/EU and 2006/66/EU do not provide a universal prescription for their implementation, and the approach varies from country to country. Accordingly, Ukraine has every opportunity to take into account the positive and negative experiences of our neighbours.

²¹⁴ Currently, both bills are on the agenda, neither has yet been voted on in the first reading. It is likely that in one form or another the key ideas concerning the extended responsibility of the manufacturer will be introduced into Ukrainian legislation. The developed bills do not answer a number of questions, which may jeopardize the achievement of their declared goals. Directives 2012/19 / EU and 2006/66 / EU do not contain a universal recipe for their implementation, the approach is different in each country. Accordingly, Ukraine has every opportunity to take into account the positive and negative experiences of our neighbours.

However, the exercise of these rights and responsibilities depends heavily on manufacturers, importers, sellers and local governments. Generally speaking, there are no obvious incentives to do the work concerned, and no real mechanism for delivering justice. A voluntary mechanism is the introduction of a deposit system, when the price of products includes a certain amount that will be reimbursed to the consumer in case of return of waste equipment, used batteries and accumulators.

According to the Act of Ukraine "On Waste"²¹⁵, in order to ensure the collection, processing, storage and analysis of information on the objects of generation, treatment and disposal of waste, it is necessary to keep records of waste (quantity, quantitative and qualitative characteristics of waste, its hazard level). The records of waste generation, treatment and disposal facilities are kept on the basis of the reporting data of waste producers, information of the executive bodies authorized in the field of waste management. Territorial communities are the owners of waste generated in municipal property or on their territory²¹⁶. Waste for which there is no owner, or for which the owner is unknown, is considered to be ownerless. The executive authorities and local authorities are responsible for organising the collection and disposal of household and other waste, establishing landfills for the disposal of such waste and the separate collection of the useful components of such waste, drawing up and approving sanitary treatment systems for municipalities, ensuring the closure of unauthorised and uncontrolled landfills, etc.

If considerable amounts of waste enter the river, which organisations can act, and what tools can they use?

In cases where river pollution is identified and the sources of leakage and discharge cannot be identified at the time of application, the government hotline should be called 24/7 or a report made on the website.²¹⁷

Nature conservation

The Act of Ukraine of 2010 "On Basic Principles (Strategy) of the State Environmental Policy of Ukraine for the Period up to 2020"²¹⁸ as an officially approved national action plan for the implementation of the Global Strategic Plan and Targets for Aiti on Biodiversity (ABC). It defines goals e.g., raising the level of public environmental awareness; achieving a safe state of the environment for human health; integration of environmental policy and improvement of the environmental management; cessation of losses of biological and landscape diversity and formation of ecological network; ensuring ecologically balanced nature management; improvement of regional environmental policy.

Emerald network

Emerald Network has the same foundations as NATURA 2000, but operates outside the European Union, developing a pan-European approach to the protection of natural habitat. Over the past 10 years, Ukrainian scientists have been involved in the development of the Emerald Network. In 2019, a modern scheme of the Emerald Network of Ukraine was approved²¹⁹ and recognized as the most progressively developing Emerald network.

In December 2020, Ukraine's draft law "On the Territories of the **Emerald Network**" (№4461) was enacted. In order to preserve the favourable ecological situation, prevent and stabilise negative natural processes and phenomena, natural areas and objects of high ecological value are under special protection as unique and characteristic natural complexes. Health protection zones have been created to protect the natural and medicinal qualities of recreational areas and to prevent their deterioration, pollution and depletion. Within

²¹⁵ Article 27 of The Act of Ukraine On Waste

²¹⁶ Articles 9 and 12 of the Act of Ukraine "On Waste"

²¹⁷ Environmental violation can also be reported using Hotline of the State Ecological Inspectorate - (044) 521-20-38. Hotline schedule: Monday-Thursday - from 9.00 to 18.00; Friday from 09:00 to 16:45 lunch break - from 13.00 to 13.45. Electronic application on the website of the Ministry of Environmental Protection and Natural Resources of Ukraine.

²¹⁸ (<http://zakon.rada.gov.ua/laws/show/2818-17>)

²¹⁹ At a meeting of the Standing Committee of the Berne Convention

these zones, any activity contrary to their intended purpose or likely to adversely affect the therapeutic qualities and health status of the SPA is prohibited.

Recreational areas are designed for recreation and tourism. Economic and other activities which adversely affect the environment or which may hinder or conflict with the intended use of recreational areas are prohibited.

Rare and endangered species of fauna and flora that are permanently or temporarily in natural conditions within the territory of Ukraine, its continental shelf and exclusive (marine) economic zone, are subject to special protection and are listed in the **Red books of Ukraine**²²⁰.

Rules on protection, treatment and management of special protection zones and the framework of possible actions at the national, regional and local levels are listed in Appendix 1.

Bilateral and multilateral agreements and cooperation protocols

International treaties are part of the national legal system and are applied in the manner prescribed by national legislation (Article 19(1) of the Law of Ukraine "On International Treaties of Ukraine" of 29 June 2004). If an international treaty of Ukraine, which entered into force in the prescribed manner, lays down rules different from those contained in the relevant legislation of Ukraine, the rules of the international treaty apply (Article 19(2) of the Law of Ukraine "On International Treaties of Ukraine" of 29 June 2004). Ukraine is party to some 70 universal (global), regional and bilateral international legal acts. Ukraine intends to ratify a number of international conventions in the field of environment protection.

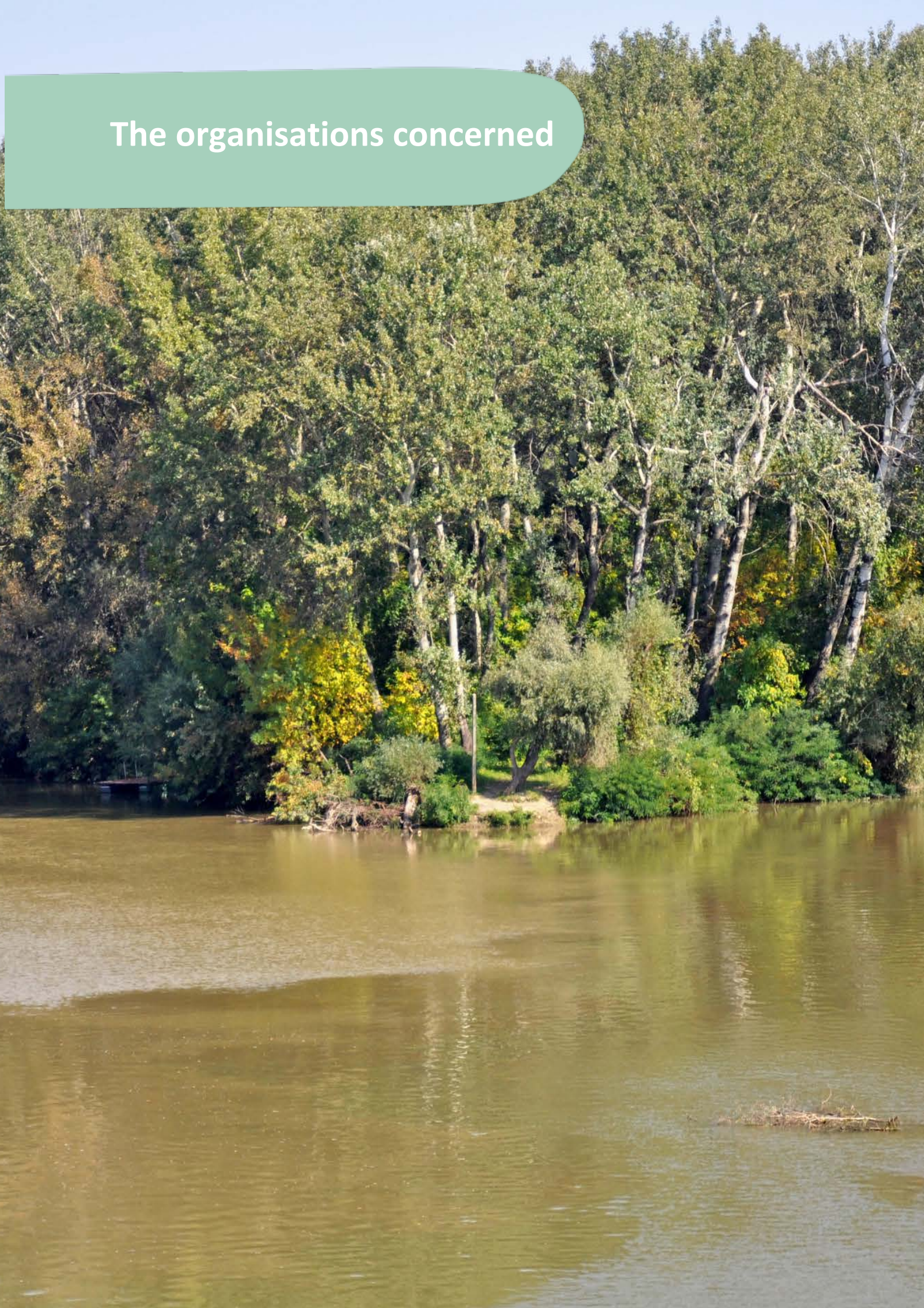
Conclusions 1

To summarize, all countries have fundamental environmental and nature conservation legal frameworks or laws depending on their administrative organization – federal or state competencies. The content of the legislative systems and their connection with the European law, regional cooperation and international agreements in the field of environment are presented. The nature and landscape protection regulations, competences of administrative bodies, municipalities, also obligations of legal entities, individuals and NGOs for the protection of nature, water, landscape and waste management are described.

Duties, rights and responsibilities of environment users, environmental damages and cross-border damages are noted as well. The legal systems in the field of protection of the environment and its components are examined in detail by each of the parties in order to achieve clarity and understanding of the problem of waste pollution in fresh waters (rivers) and sea.

²²⁰ Protection and reproduction of objects of the Red Book of Ukraine are provided by state authorities, local governments, legal entities and individuals who are subjects of use of fauna and flora in accordance with the law. Objects of the Red Book of Ukraine may be objects of state, communal and private ownership in accordance with the law. The maintenance of the Red Book of Ukraine is entrusted to the specially authorized central executive body for ecology and natural resources.

The organisations concerned



Austria

Legislative bodies and managing bodies of the sector

Nature conservation legislation and enforcement in Austria falls under the jurisdiction of the Federal States. Implementation of the individual EU Directives such as the Habitats Directive, the Birds Directive and the Water Framework Directive also take place within the Provincial Nature Conservation Acts. Federal legal provisions regulate cooperation between the federal government and the provinces concerned in the establishment and maintenance of national parks. They are 'agreements under Article 15a of the Federal Constitution'. The federal provinces are exclusively responsible for legislation and enforcement in matters of nature conservation. In Vienna, the Municipality of the City of Vienna - Environmental Protection (MA 22) is the responsible nature conservation authority. The Vienna Provincial Administrative Court decides on appeals.

The lack of a nature conservation law at the federal level creates tension. Nine federal states regulate 'their' nature conservation in different ways - but animals do not adhere to state borders. In addition, hunting and fishing laws also regulate the handling of certain species. These, too, are federal state laws. Therefore, conservationists have to deal with 27 different laws throughout Austria in their work. In addition, there are many more related ordinances.

Professional background

The **Austrian Water and Waste Management Association (ÖWAV)** has represented the entire water and waste management sector in Austria since 1909. As a non-profit association, it is committed to achieving sustainable goals at the national and international level. The most important tasks of the Association include the preparation of rules and regulations by working committees. ÖWAV offers its more than 2,000 member organisations an industry network, a neutral and independent platform of all experts and professional groups involved, as well as up-to-date information. It balances the interests of national water, wastewater and waste management. As part of the ÖWAV's education and training programme, numerous seminars and training courses are organised each year in the individual fields of water, wastewater and waste management.

Several University Institutes deal with the water topic. At BOKU University alone 5 institutes are engaged in the topic, additional institutes are found at Technical University (Vienna and Graz) or University of Vienna.

Social engagement - Tools of awareness-raising and possibilities for civil initiatives and volunteers

The legal framework for citizen participation in projects and plans has been significantly improved in Austria in recent years. Through the implementation of the Public Participation Directive, citizens have an enforceable right to environmental information for the first time. Non-governmental organisations (NGOs) and citizens' initiatives (with restrictions) have party status in the environmental impact assessment (EIA) procedure.

eParticipation holds the potential to carry out effective participation opportunities with different intensities, i.e. from the provision of information to consultation and decision-making. In Austria, there are increasingly informal electronic participation procedures. Formal eParticipation procedures have hardly been carried out so far. As examples, www.partizipation.at presents some Austrian initiatives and projects related to eParticipation. There are far-reaching initiatives in the field of e-democracy and eParticipation.²²¹

In Austria at the moment, Greenpeace and the Plastic Planet Austria (<https://vereinplasticplanet.wixsite.com/website>) are active on the 'plastic in water' issue. Plastic Planet Austria is active in cleaning activities as well as awareness-raising campaigns esp. including famous persons in their activities. Greenpeace and GLOBAL2000 are active in awareness-raising as well as publishing research results.

²²¹ For example, the Austrian e-democracy strategy was adopted in autumn 2009. It was developed by the e-democracy & e-participation project group of the Federal Chancellery with the involvement of the ministries and the federal provinces. It addresses all persons and institutions of the public sector and civil society and invites them to examine and make use of possible applications and opportunities for e-democracy. On the Austrian internet platform meinparlament.at, which is operated by the Politik Transparent e.V. Association, it is possible to directly contact politicians and political candidates. [Meinparlament.at](http://meinparlament.at) went online around five weeks before the 2008 National Council elections.

The topic became known to the general public through the film Plastik Planet by the Austrian Werner Boote. Littering is combated on a larger scale through the Dreckspatz app developed by GLOBAL2000. The DreckSpotz App (<https://www.global2000.at/dreckspatz>) is an initiative of GLOBAL 2000 together with Hofer KG and the Alpine Club sections Gebirgsverein and Edelweiss. The app is intended to help free nature from litter in a sustainable way. We inform and collect data together to find long-term solutions to the littering problem. With the app, people from all over Austria can help to collect data in order to develop long-term solutions for the litter problem. The app thus pursues three goals: Data collection, awareness raising, cleaning up nature. If one finds litter in nature, a photo can be taken and uploaded, the litter is categorised, and the picture is shown on an Austrian map.

Slovakia

Legislative bodies and managing bodies of the sector

The **Ministry of the Environment** as the central state administrative body for the protection of the environment is responsible e.g. for nature and landscape protection, water management, flood protection, waste management, environmental impact assessment, providing a unified information system on the environment and area monitoring, protection of water quality and quantity and their rational use, and fisheries (with the exception of aquaculture and sea fishing).

Environmental protection is subordinated to the local state administration through district offices, regional offices and the **Slovak Environmental Inspectorate (SIŽP)**. The Slovak Environmental Inspectorate is a state control body through which the Ministry of the Environment oversees environmental protection, imposes sanctions.²²² SIŽP in addition to its control role is also a local state administration body instead of a district office.

Some competencies in the field of environmental protection have been transferred to municipalities^{223 224}. The Environmental Fund provides grants or loans for environmental projects, including waste management, at the national, regional and local level.

The Ministry of the Interior is the main supervisory state administration body for civil servants at the environmental district offices. It has significant influence over the operation of the environmental district offices,²²⁵ including approval of their organisational rules.

The **Water Research Institute** is a professional organisation directed by the Ministry of Environment that provides water management applied research and analyses.

The **Slovak Hydro-Meteorological Institute** is a professional organisation directed by the Ministry of Environment that provides forecasts and applied research on air quality and hydrometeorology.

The **Slovak Academy of Sciences** contains a Landscape and Environmental Protection Department that is also involved in applied environmental research.

Licensing and control bodies

The Ministry of Environment is responsible for granting authorisations to entrepreneurs and enterprises who want to recover and process electrical waste, old vehicles, oils and batteries. The Ministry created the Institute of Authorisation for this purpose.

The performance of state administration environmental protection duties is carried out by the regional environmental authorities and the State Environmental Inspectorate. The Ministry of Environment reviews their decisions.

²²² The Inspectorate orders necessary corrective measures and performs other tasks according to Act no. 543/2002 Coll.

²²³ Act no. 416/2001 Coll. on the Transfer of Certain Powers from State Administration Bodies to Municipalities and Higher Territorial Units For instance, the scope of the municipality in the field of water management includes deciding on the modification of restrictions or the prohibition of water management, determination of the extent of land designated as a floodplain, approval of sewerage regulations, and issuing permits for water discharges etc.

²²⁴ § 2 (b) 416/2001

²²⁵ They carry out an agenda in accordance with the operational instruction of the Ministry of the Interior no. 5/2018 of 3 September 2018

A District Office of the Environment²²⁶ is entitled to grant other types of permits for processing waste such as waste collection (District Office of the Environment²²⁷), waste recovery and processing electrical waste. The District Office of the Environment also grants approvals for the management and transport of hazardous waste,²²⁸ and grants permits to transfer waste suitable for household use (e.g., use as a construction material, use as a fuel, etc.).²²⁹

The State Environmental Inspectorate²³⁰ (SIŽP) is entitled to grant permits to establish waste collection, waste processing and waste disposal operations. SIŽP performs regular inspections and can issue fines for violations. SIŽP cooperates with the Police and the Customs Office when making unannounced inspections to catch environmental crimes connected with illegal waste import, especially medical waste at the state borders.

Possibilities for judicial remedy, the rules of the administrative courts and the cooperation framework and connections of the authorities

The Nature Protection Authority may impose a fine or confiscate equipment from an entrepreneur or legal person who commits an illegal act according to the activities stipulated by the Act on Nature Protection. For instance, picking, digging or otherwise destroying protected plants is prohibited. Those who violate the ban face a fine of up to € 9958. In national parks, nature reserves and monuments or wherever the III. or IV. degree of protection applies, it is forbidden to collect any plants, including unprotected ones. Landowners and users have a legal obligation to prevent the occurrence and spread of invasive plants on their land²³¹ and failure to comply with these obligations may result in a fine.

Rulings by the Regional Court on decisions (e.g., permits, fines) imposed by the state administration body such as the Slovak Inspectorate of the Environment may be appealed at the High Court. The Supreme Court may also hear appeals to judgments handed down by regional courts, e.g., in cases of deciding on the justification of the issuance of fines imposed by the Slovak Environmental Inspectorate.

Professional background - Professional Organisations of Environmental Protection

The State Nature Conservancy (ŠOP SR), Slovak Caves Administration (SSJ), Slovak Museum of Nature Protection and Speleology (SMOPJ), and the Bojnice Zoo are professional nature protection organisations under the Ministry of Environment. Others which are directly managed by the Ministry include the Slovak Environmental Agency (SAŽP) and its 10 centres, and the Slovak Mining Museum (SBM).

The **State Nature Conservancy** (ŠOP SR) is a professional nature and landscape protection organisation with nationwide competence. Its responsibilities include e.g. procurement and provision of practical care for protected areas; keeping records related to nature and landscape protection; monitoring, research and surveys of protected nature areas.

The **Slovak Botanical Society** and the **Slovak Zoological Society** are among other scientific societies at the **Slovak Academy of Sciences** that make significant contributions to the development of the theory and practice of nature protection.

Social engagement

²²⁶ Act no. 525/2003 Coll. on State Administration in Environmental Protection

²²⁷ Act no. 525/2003 Coll. on State Administration in Environmental Protection

²²⁸ § 97 par. 1 letter f) of Act no. 79/2015 Coll. on Waste and on the amendment of certain laws

²²⁹ § 97 par. 1 letter n) of Act no. 79/2015 Coll. on Waste

²³⁰ competent authority of state administration according to 9 and 10 of Act no. 525/2003 Coll. on State Administration of Environmental Protection and on the amendment of certain laws as amended

and 32 par. (1) letter a) of Act no. 39/2013 Coll. on Integrated Prevention and Control of Environmental Pollution and amending certain laws

²³¹ §2 and §3 of Decree No. 24/2003 of the Ministry of the Environment, which implements Act No. 543/2002 Coll. on Nature and Landscape Protection - and its amendment No 173/2011

Most of third sector's communications are performed through the Office of the Government Plenipotentiary for the Development of Civil Society. The Government Council for Non-Governmental Non-Profit Organisations is a permanent professional, advisory and coordinating body of the Government. The goals of the Office are to promote transparency and partnership between the public administration, citizens and non-governmental, non-profit organisations and to contribute to a better understanding of the importance of civic society. The Plenipotentiary manages two basic agendas: the 'Open Governance Initiative' and the 'Civic Society Development Concept' through action plans approved by Government resolutions. The Office and NGOs may cooperate in organised workshops, thematic meetings and roundtables. As a result, the position of NGOs as a relevant voice to make the legislative proposals have improved. The information flow between the third and state sector has also improved.

Volunteering offers opportunities for participation for all population groups. Many centres of community development and civic volunteering platforms have been created in Slovakia like Platforma dobrovoľníckych centier a organizácií, and Prešovské dobrovoľnícke centrum to name a few.

Awareness-raising tools and possibilities for civil initiatives and volunteers

In recent years, the activism of civic society has increased and there are many environmental NGOs operating in Slovakia²³² having a well-established legislative and financial framework. NGOs have significant involvement in the legislative processes, engage in activities and projects of public interest, point out acute environmental problems and participate in community development.

Slovakia gradually succeeded in developing areas for dialogue between the state and civil society and NGOs in the form of designated institutions²³³ as well as tools for direct and indirect funding support for activities.

Currently, the problems of NGOs are quite different. Attacks on civil society, which had been known in the past mainly from the political extremes and conspiracy media, have significantly intensified and have become part of the communication of some political parties. Therefore, the Chamber of Non-Governmental Organisations, Non-Profit Organisations established the Non-Profit Crisis Coordination Staff in 2020. Its primary objectives are to identify the key impacts of the crisis on the non-profit sector, to map the needs of organisations, and to facilitate cooperation between the State and civil society.

Another new platform was created by 34 organisations (including Greenpeace Via Iuris and People in Peril among others) as a response to increasing pressure and attacks from political extremists.

"Internet activism" on social media is popular; formal and informal volunteering is increasing too. Social media campaigns on raising awareness on climate change and protection of trees (for example My sme les) have created a momentum for signing petitions on nature conservation. These initiatives have met with success. For instance, a recent campaign by a coalition of NGOs gathered 51000 signatures which led to the banning of wolf hunting in Slovakia. Another positive example was the petition campaign 'My sme les' which achieved legislative changes that designated large areas of national parks as strictly protected.

NGOs can also intercede in environmental problem solving in cooperation with municipalities. For example, during the last election period, the city of Partizánske began cooperating with Greenpeace to regularly monitor pollution in the Nitra River. They informed the public, the Ministry of Environment and the Slovak Environmental Inspectorate about how serious the issue is and ways to address it.

Addressing the problem of low financial support from Government and business, a Memorandum was signed between the Ministry of Finance and NGOs in 2013. The Memorandum aims to ensure higher standards of transparency of the third sector, bolster the stability of the entire system, improve the corporate tax allocation model to motivate companies to donate, and enable the support of as many public benefit projects as possible.

²³² e.g. Živica - Centre for Environmental and Ethical Education; Predators' Protection in Slovakia (Ochrana dravcov na Slovensku), Bratislava; Greenpeace, Bratislava; WWF-Slovakia; Centre for Environmental Activities, Trenčín; Friends of the Earth CEPA; Ekopolis Foundation, Banská Bystrica; Carpathian Development Institute, Košice; Forest Protection Group Vlk, Tulčík; SOSNA, Družstevná pri Hornáde; Bratislava Regional Conservation Association - BROZ, Bratislava; Strom života, Bratislava.

²³³ e.g. the Government Plenipotentiary for Civil Society Development or the Government Council for Non-Governmental Non-Profit Organisations

The Ministry of Environment signed a declaration on cooperation between the Ministry and NGOs for the performance of environmental tasks²³⁴. The declaration improved the involvement of NGOs and other social and economic partners and provided a balanced representation of individual sectors and civil organisations nominated through transparent and clear mechanisms in working groups.

Control and sanctioning system

According to the Waste Act, a fine may be imposed on a legal person or contractor within one year of the date on which the state waste management authority became aware of the infringement, but no later than three years from the date on which the infringement was committed. The State Waste Management Authority may simultaneously impose a responsibility to remediate the environmental damage within a specified period of time. If the violator fails to implement these measures within the specified period, the State Waste Management Authority may impose an additional fine up to twice the upper limit of the fine set by the Act. The revenue from fines goes to the Environmental Fund.

Hungary

Legislative and sectoral governing bodies

Most of the powers are exercised by the central government and its territorial bodies. Hungary is one of the few EU member states that does not have a separate ministry of environmental protection. Therefore, relevant responsibilities are spread across several ministries.

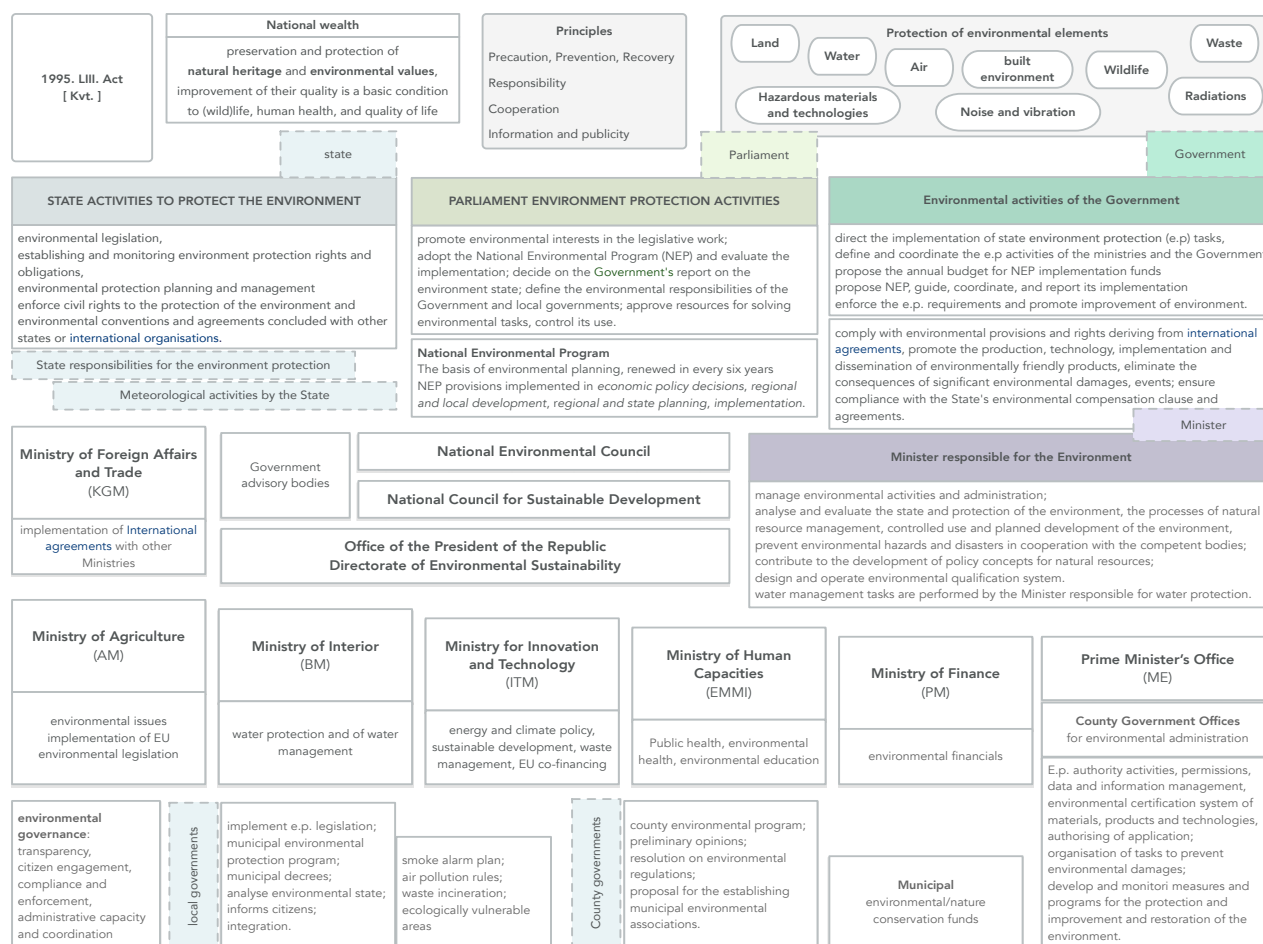


Figure 4 Legislative and governing bodies of Hungary

Having merged with the Ministry of the Environment in 2010, biodiversity policy is the responsibility of the Ministry of Agriculture. Water management has been transferred to the Ministry of the Interior, and waste

²³⁴ Described in Resolution no. 68/2012 regarding the Strategy of Civil Society Development in Slovakia (22 February 2012)

management duties have been given to the Ministry of National Development (currently the Ministry of Information and Technology).

According to Government Decree 71/2015 (30 March 2015), national park directorates are responsible for the nature conservation management of Natura 2000 sites, protected and highly protected natural areas.

The comprehensive reorganisation of the government's regional bodies resulted in, among other things, the abolition of national and regional environmental and nature protection inspectorates, and the division of **licensing and control tasks** between integrated **capital and county government offices, district offices** and **disaster management authorities**. An increasing role was granted to **local authorities**.

The **Ministry of Agriculture**²³⁵ is primarily responsible for environmental issues and the implementation of EU environmental legislation. The State Secretariat for Environmental Affairs is the central governing body for environment (air quality, noise, soil protection) and nature protection; it undertakes the sectoral, expert management and regulatory tasks. Nature conservation management legally includes all activities related to the assessment, registration, protection, conservation, maintenance, presentation and rehabilitation of protected natural areas, Natura 2000 sites and natural values.

Figure 5 Executive bodies



The Ministry of Agriculture supervises the activities of the ten National Park Directorates, and their tasks are performed within its area of operation. The **Ministry of Interior** bears responsibility for the implementation of water protection and water management via the **General Directorate of Water Management (OVF)** and its 12 local water directorates, the **National Directorate General for Disaster Management (OKF)**, Deputy Director General of Authority; Prevention and Licensing Service and Department of Water and Water Protection. Water management directorates play a key role in offering operational solutions for remedying harmful environmental events. If a harmful event occurs within a protected natural area or a Natura 2000 site, national park directorates also participate in the remediation process. Energy and climate policy, sustainable development, waste management and matters related to EU co-financing are under the responsibility of the **Ministry for Innovation and Technology**. The **Ministry of Human Capacities** also retains responsibility in some environment-related affairs, like in public health or environmental education, while the **Ministry of Finance** ensures finances for environmental activities. Institutions under the **Prime Minister's Office** play a crucial role in environmental administration. The capital and county government offices are the responsible authorities for environmental and nature protection. In 2017, the National Inspectorate for Environment and Nature merged with the **Pest County Government Office**, and its competencies were transferred to the Environment and Nature Protection Department. The district government offices are the first instance authorities responsible for issuing permits for activities, authoritative opinions and inspections. From 1 March 2021, a separate government **Waste Management Authority** began operating. **Local governments** also regulate, establish rights and obligations, control and monitor, plan and manage environmental protection.

Licensing and control bodies

Prevention of environmental damage, environmental remediation and recovery measures are built upon each other, with a clear emphasis on prevention. Environmental and water protection authorities have a key role in prevention, licencing, keeping official records, monitoring activities and detecting irregular behaviour. Nature conservation personnel and rangers from the Water Directorates, Dam and Riverbed Directorates, and National Park Directorates are active participants in prevention and detection.

The distribution of management powers has changed several times in recent years, resulting in changes in the names of the competent authorities and public organisations performing remediation tasks. The system

²³⁵ *Environmental Implementation Review, 2019 – Hungary*

of prevention and remediation has not fundamentally changed. However, with the division of responsibilities between several ministries (BM, AM, ITM, ME) management has become more complicated.

The **water authority** has competence for permitting, supervision and control²³⁶. The **tax authority** applies water use fees as defined in the Water Management Act and its implementing regulations.

GD 531/2017 (29 December 2017) designates regional and national water authorities, and regional and national water protection authorities as specialised bodies acting in the public interest.

The Ministry of the Interior (BM OKF) has water protection administrative tasks, and is also the central managing body for disaster prevention services in the capital and 11 counties, and coordinates the implementation of water protection administrative tasks, performance of water quality protection and damage prevention tasks.²³⁷ Environmental damage prevention is also performed by the county government offices and by the water management/protection directorates within the framework of disaster protection.

Applications for environmental permits can be initiated at the capital and county government offices. Carrying out an environmental impact assessment²³⁸ is a precondition for issuing an environmental permit. A request must be addressed to the Pest County Department of Environment and Nature Protection. An exception is in cases of special significance²³⁹, entitling an applicant to an appeal at the authority exercising supervisory powers over the authority acting in the first instance, or the authority designated by decree of the Government.

GD on Designating the Waste Management Authority²⁴⁰ names the county government offices to act as the territorial administrative authority, and the ministerial Waste Management Authority as the national authority on waste management.

Describe the possibilities for judicial remedy, the rules of the administrative courts and the cooperation framework and connections of the authorities

During the 2021 modification of the **Act on Waste**, significant changes were introduced in the implementation and supervision of the waste management system, including the role of the judicial system. Legal consequences, procedures, and the rights of the competent authorities are now much more detailed, stricter, and set up a complex system for handling waste management issues.

Besides the general role of the *State*, like setting up a waste management system, regulation and supervision, licencing and data collection, there are now more detailed responsibilities under the new **Waste Management Authority**. Territorial Authorities come under the county government bodies, while the national Waste Authority is appointed by the Minister. Their roles and responsibilities are interconnected and linked; both are supervised by the Minister through an appointed body. The Authority can employ legal measures such as imposing fines and giving legal notices, but no legal action can be made after one year from becoming known about by the Authority, or five years from committing the illegal act. Legal consequences include limitation, suspension or banning of activity, modification of an operating licence, banning transportation, seizing a vehicle, plant or tools, and payment of fines.

Radical measures have been introduced by the new Act with the aim to provide a higher level of prevention, such as widening administrative penalties that now do not exempt the perpetrator from criminal liability.

The recent legislation appointing the Waste Management Authority²⁴¹ describes the roles and responsibilities of the territorial and the national waste management authorities. The **Ministry** is the supervisory

²³⁶ GD 223/2014 (4 September 2014)

²³⁷ GD 366/2015 (2 December 2015)

²³⁸ GD 314/2005 (XII. 25.) on Environmental Impact Assessment and the unified environmental use permitting procedure defines preliminary investigations, preliminary consultations, notification procedures, approval of the regional environmental plan, environmental impact assessment procedures and the procedures for obtaining single environmental permits. It regulates requirements for baseline reporting, informing and involving the public during trial operation, and inspection and monitoring

²³⁹ Act on the Acceleration and Simplification of the Implementation of Investments of Priority to the National Economy

²⁴⁰ 124/2021 (III. 12.)

²⁴¹ GD 124/2021. (III. 12.)

administrative authority of the national and the regional *environmental and waste management authorities* in matters relating to waste management activities.

Municipalities also play a significant role in prevention, supervision and enforcement of waste management. The notary and municipality have certain rights and obligations in their territory, especially in the case of illegal waste dumping.

The OECD Environmental Performance Assessments from 2018 published the proportions of water protection and biodiversity violations according to the different environment fields and showed that water sources are the most vulnerable to human interference.

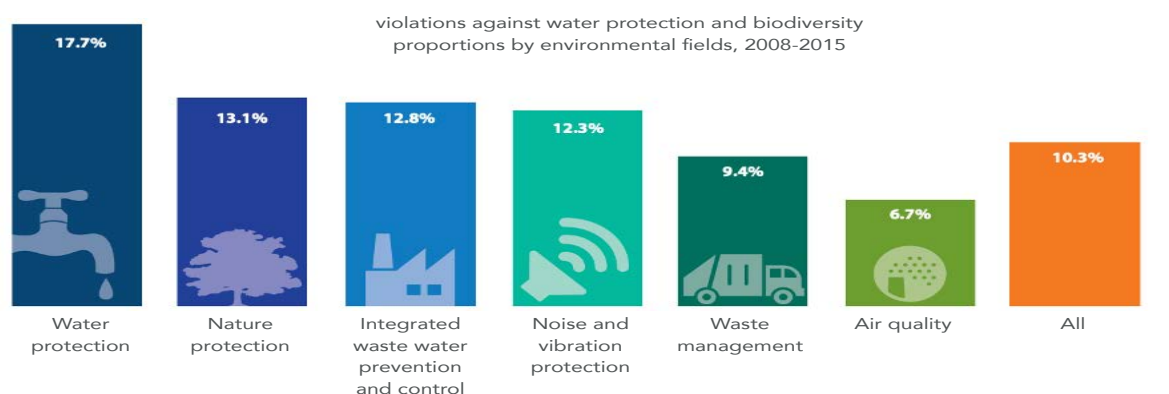


Figure 6: Violations against water protection and biodiversity (based on OECD source)

Professional background

According to the Environment Act, cooperation for protecting the environment is required between the state bodies, local governments, natural persons and their organisations, including organisations engaged in farming and interest protection organisations (such as lobby groups, **NGOs** and sector associations). The rights and obligations to cooperate cover all stages of solving environmental tasks. An example is the LIFE-MICACC project,²⁴² where the Ministry of Interior, in partnership with five settlements, two professional associations, WWF-Hungary and 24 cooperating municipalities has improved the resilience of the most vulnerable Hungarian municipalities to climate change by implementing, testing and demonstrating innovative, efficient, small-scale and cost-effective natural water retention solutions.

Government advisory bodies include the **National Environmental Council** with Standing committees for Agriculture and Nature, Energy Policy, Waste Management, Transport Policy and Environmental Policy. Also included are the **Water Management and Water Quality Protection Authorities**, the **National Council for Sustainable Development** and the **Directorate of Environmental Sustainability** within the **Office of the President of the Republic**.

Professional bodies focusing on water management include the **Regional Water Management Directorates** who work together with the **Hungarian Hydrological Society** - a social, scientific and professional association. Research institutes in the field are the **Hungarian Academy of Science** responsible for the *Hungarian Water Science Programme*, its Committee of Presidents of the Environment; the **Danube Research Institute**, the **Centre for Ecological Research** in the Eötvös Lóránd Research Network with its Institute for Aquatic Ecology, and the Faculty of Water Science at the University of Public Service.

Green industry is represented by the **Hungarian Association of Environmental Enterprises (KSzGySz)**, a professional body for public benefit advocacy. Another important professional advocacy body is the **Hungarian Waste Management Federation**, representing the Hungarian recycling industry. Their mission is

²⁴² https://vizmegtartomegoldasok.bm.hu/storage/dokumentumok/LIFE%20MICACC%20Brossura_vegleges.pdf

to do everything possible to assist in the creation of appropriate legal and economic conditions for the operation of the essential waste collection and recycling sector.

Social engagement

The Environment Act explicitly mentions information and public relations as an important principle. The bodies performing public tasks must enable all segments of the public to know and comprehend the essential connections between environment and health, the activities damaging the environment and their importance, and the right of access to environmental information. Access to environmental information may not be refused on the basis of being personal data, business or tax secrets, habitat data of a highly protected plant or animal, depleted natural resources or the sites of a highly protected geological or biological value.

It is a general right to personally participate in environmental protection or through representatives, social organisations or local governments. Without resources, the strength of activities is limited. Therefore, volunteering plays an important role. Advocacy for living a healthy lifestyle is becoming more popular, as Internet ‘influencers’ become popular green role models. Trustworthy resources in social media are crucial. NGOs also engage citizens of all ages. From an early age, the role of continuous education has been recognised by the Sectoral Skills Council, which has introduced eco-schools and green kindergartens. The lack of an integrated awareness strategy for a long-term, well-structured education system weakens the effectiveness of a global solution to which it should contribute.

Tools of awareness-raising and the possibilities for civil initiatives and volunteers

NGOs are indispensable in providing scientific expertise, shaping attitudes, disseminating knowledge, educating the public and influencing decision-makers. They play a key role in implementing ‘environmental democracy’ and enabling more effective social participation (i.e., preparing strategies and legislation). NGOs also play an important role in drawing the attention of the courts and authorities to the shortcomings in the implementation of environmental regulations and thus in promoting their better enforcement.

Lack of resources and low capacity are common problems for many NGOs. Their activities cannot be carried out without any support, so the dilemma of ‘independence or activity’ also often arises. In the absence of core funding, project-based operation is not sustainable. Although **volunteering** does not go back to old traditions in Hungary, there is a growing number of young people participating.²⁴³

The three largest nature conservation NGOs in Hungary: WWF-Hungary, the Association of Hungarian Conservationists (MTVSz, FoE-Hungary) and the Hungarian Ornithological and Nature Conservation Association (MME, BirdLife Hungary), are collecting signatures to improve several environmental situations, and by doing so, and by establishing the Hungarian Nature Day, they are raising awareness to the importance environmental issues.

Due to the absence of a Ministry of Environment, there have been fewer resources allocated to NGOs. Government restrictions plague these organisations. For example, they only have limited possibilities to apply to the Constitutional Court (CC), despite the successful petition of Ecological Centre resulting in the Decision 28 of 1994 of the CC.²⁴⁴

Control and sanctioning system

The amount of waste dumped in forests, public and private areas and along roads is increasing. Responsibility for future generations was expressed in the Brundtland Report¹ and in the **Fundamental Law**. The **National Environmental Protection Authority** acts as an agency for the import, export and transfer of waste²⁴⁵. It is forbidden to import hazardous waste into the country. Local waste must be collected, transported, stored and managed only within the regulated framework. Seeing the growing number of illegal dumpsites, this legitimacy is increasingly undermined.

²⁴³ In events such as <https://hulladekvadasz.hu/>; <http://zoldovezet.info/content/onkentesseg>; <https://jonalapitvany.hu/>
²⁴⁴ http://emla.hu/sites/default/files/EMLA%2020_kiadvany.pdf

²⁴⁵ Government Decree 180/2007 (3 July 2007) on the Transboundary Movement of Waste

The **Local Governments Act**²⁴⁶ of Hungary details the obligatory tasks of local governments ensuring a clean environment within the scope of environmental health tasks, local environmental and nature protection, and waste management. Although some public waste management service elements are State tasks, the problem caused by illegally disposed waste belongs to local governments.

The **Criminal Code**²⁴⁷ regulates crimes against the environment, nature and waste management. Illegal waste disposal is criminalised in the Criminal Code. Those who place waste in a place not officially approved for that purpose, without a permit or exceeding the scope of the permit shall be penalised by up to 3, in serious cases up to 8 years of imprisonment.

Legislation must be strengthened to effectively prevent illegal dumping. If the Criminal Code were to cover municipal waste offences, it would increase efficiency and reduce the amount of waste illegally dumped. However, misinterpretation of legislation or devolution of responsibilities, i.e., differences of authority between officials, also plays a role in the lack of effective action. Preventing illegal dumping is regarded as a matter for 'experts'. The investigating authority often automatically assigns an expert, even if it is not absolutely necessary (i.e., the nature of the waste can be identified, even by visual inspection). The waste inventory will help the authority and it would save the expert fee and the time spent obtaining the expert opinion. According to the Act on Criminal Proceedings, common facts do not need to be proved. Without the secondment of an expert, it is possible to determine whether the waste is hazardous or unsafe if the nature of the waste can be proved by documentation, legislation (waste list) or it is a well-known fact.

According to the **Act on Waste**, waste management activities such as collecting, transport, treatment of waste and the operation of waste management facilities may not be carried out without an *official permit and registration*. Thus, when someone illegally places waste in a public or private area, he or she carries out waste management activities without a license. The **Act on Waste** contains an additional possibility of sanctioning the illegal disposal or abandonment of waste. It states that waste may be disposed of only in a designated or reserved area in such a way as not to endanger the environment. If this 'disposal' takes place illegally, the obligation to dispose of the waste rests with the owner. In many cases, the actual perpetrator is not known, and the liability is borne by the current occupier or owner of the property. In the case of public land, this is usually the local authority. If the polluter does not voluntarily comply with the liability regime laid down in the legislation, the environmental authority will impose an administrative fine.

Additional powers are provided by the Act on Waste to the notary as an environmental authority when authorising them to impose a waste management fine.²⁴⁸ For the authorities to perform their tasks effectively, citizens must become more willing to report violations. This may be achieved through increased awareness-raising and environmental education or introducing a camera surveillance system to improve prevention. Prevention is the most important of all solutions.

The oil spill in Szigetszentmiklós²⁴⁹ highlighted the importance of administrative infringement, criminal law regulation and sanctioning options for illegal dumping, sewage, sewage sludge disposal, and surface and groundwater pollution.

Serbia

Legislative and managing bodies

Environmental management is under the jurisdiction of the national government, which has delegated the various tasks to the **Ministry of Environment**, other ministries, provincial administrative bodies, agencies of local administrations, and government-held water management companies. Major administrative functions related to environmental management reside with the Ministry of Environment, which also carries out field inspections. The Ministry has competence over the conservation and development of biodiversity and

²⁴⁶ Local Government Act – Act CLXXXIX of 2011) about the Local Governments of Hungary

²⁴⁷ Act C of 2012 on the Criminal Code

²⁴⁸ With detailed rules for fines appearing in Government Decree 271/2001 (21 Dec 2001)

²⁴⁹ <https://www.youtube.com/watch?v=jOrZpCemBGE>

protected areas; monitoring and sustainable use of biodiversity and landscape; and domestic and international trade in endangered and protected species of wild flora and fauna.

The **Environmental Inspectorate** is directly responsible to the Ministry of Environmental Protection and operates in all areas of environmental protection in Serbia and performs both monitoring and enforcement of the law.

The environmental sector involves many institutions at the national, county and local level. However, it is predominantly addressed by the following **institutions**: the Ministry of Agriculture, Forestry and Water Management (including the Water Directorate); Ministry of Health; Ministry of Construction, Transport and Infrastructure; Ministry of Mining and Energy; Ministry of Finance; Ministry of European Integration; Republic Hydrometeorological Institute; Ministry of Interior (Department for Emergency Situations); local governments and Public Utility Companies.

The Provincial Secretariat for Urban Planning and Environmental Protection performs executive, professional and development tasks for the provincial administration, supervises and monitors the implementation of environmental protection regulations; controls the use and protection of natural resources on the territory of AP Vojvodina; and provides continuous control and monitoring of the state of the environment.

Three government-held water management companies operate in Serbia: Srbijavode (Serbia Waters), Vode Vojvodine (Waters of Vojvodina) and Beogradvode (Belgrade Waters).

The current institutional framework for waste management in Serbia has 3 levels: Central (Ministry of Environmental Protection and Serbian Environmental Protection Agency), regional (Autonomous Province Administration) and local (local self-government and joint local authorities for Waste Management Regions). The Ministry of Environmental Protection (MEP) is responsible for the development and implementation of the National Waste Management Policy.

The responsibility for the development and implementation of the National Waste Management Policy also lies with the Ministry of Environmental Protection. The Ministry is accountable for implementation of a waste management legislative framework and harmonisation with the EU acquis. The Ministry coordinates and performs specific waste management activities and monitors their status. It is responsible for granting or denying permits for all waste management activities concerning hazardous waste, the treatment of inert and non-hazardous waste through incineration, and the treatment of waste in mobile facilities. For certain waste streams, the responsibility is shared with other ministries such as the Ministry of Agriculture, Forestry and Water Management, Ministry of Mining and Energy, and the Ministry of Health.

The **Autonomous Province of Vojvodina** coordinates and performs specific waste management activities for itself. It also participates in the development of the Strategy and specific national waste management plans. It is responsible for permitting all waste management activities on its territory and is also entrusted to carry out inspection activities related to waste management. Although from a legal point of view the Autonomous Province has numerous responsibilities regarding waste management, in practice, it is reduced to coordination and performing specific waste management activities important for the province (waste management permits, local and regional waste management plans, spatial permits, etc.).

At the local level, Local Self-Government Units (LSGs) are obligated to adopt local Waste Management Plans. The LSGs establish, regulate, ensure, organise, and implement municipal waste management, including MSW collection. In addition, LSGs issue permits for activities concerning inert and non-hazardous waste, keep records and submit data to the Ministry.

Licensing and control bodies

The governance of environmental protection, nature conservation, water management and waste management are carried out at multiple levels and by a multitude of organisations, including the national government, regional and local administrations (AP Vojvodina and municipalities) and public enterprises. The Republic of Serbia, the Autonomous Province, LSGs, as well as legal and natural entities are responsible for each activity that has the potential to change the state and condition of the environment, i.e. violating environmental protection laws. Water management is under the jurisdiction of the Republic, but it is realised

through the Ministry of Environmental Protection, regional and local public bodies, and public water companies. The **Ministry of Environmental Protection** and **Ministry of Agriculture, Forestry and Water Management** are responsible for leading the implementation process, monitoring/reporting on construction of municipal wastewater collection (sewage) and treatment.

The lead institution for water services is the **Republic Water Directorate** under the Ministry of Agriculture, Forestry and Water Management. The Republic Water Directorate performs professional, administrative, and technical activities for the National Conference (see below) within the relevant ministry. Secretariats for environmental protection exist in some cities (i.e., Belgrade, Novi Sad and Niš), however, this is not the case in all municipalities. Instead of such secretariats, some municipalities have an Environment Board.

Public enterprises for regional, multi-purpose water activities are being established on the territory of two or more local self-government units. These are intended to secure drinking water supply needs, irrigation, water, and flood protection requirements. LSGs provide organisational, material, and other requirements for the construction, maintenance and operation of communal facilities. They also ensure technical and technological unity of the system, and develop, regulate, and carry out communal utility activities. The Institute for Nature Conservation of the Republic of Serbia and the Provincial Institute for Nature Conservation of Vojvodina are responsible for professional control, support, protection and improvement of Serbia's natural heritage and its biological and geological diversity. The Provincial Secretariat for Urban Planning, Construction and Environmental Protection performs nature conservation activities, elaborates natural resource protection, adopts plans and programmes for natural resource asset management in accordance with the strategic documents, and secures approval of natural resource plans and programmes for the Autonomous Province.

The National Conference on Waters is to ensure public participation in national water management issues²⁵⁰. It is composed of representatives of local self-governments from each water district, representatives of water users and representatives of civic associations.

The Ministry of Environmental Protection is responsible for leading, monitoring and reporting on the waste management implementation process. This includes waste collection, transport, recycling, treatment and disposal. Permits are granted by LSGs for waste management activities in their jurisdiction. In cases when waste management activities are performed on the territories of more than one municipality, permits are issued by the Ministry of Environmental Protection or by the Government of the Autonomous Province of Vojvodina.

Possibilities for judicial remedy, rules of the administrative courts, and the cooperation framework and connections of the authorities

If the use of natural resources directly threatens the survival of a species, its habitat or natural ecosystem, the Ministry of the Environment, in consultation with the Ministry of Agriculture, Forestry and Water Management and the Ministry of Mines and Energy, may order the restriction or permanent suspension of such activity.

The Environmental Inspectorate is directly responsible to the Ministry of Environment and Spatial Planning, operating in all areas of environmental protection in Serbia, and performs both monitoring and enforcement. The tasks of the Environmental Inspectorate, which are connected with hazards to public health, follow the Manual for Environmental Inspectors (2005), which covers environmental legislation and minimum criteria for environmental inspection, including checklists, reports, orders and lawsuits. In case of violations, inspectors can issue orders and prohibitions within their own field of authority. They cannot impose fines, but can order and impose provisional measures, including bans, or order the confiscation of equipment in case of clear danger to human health and the environment. They can also propose prosecution by the courts. Only the courts can impose fines, prison sentences and other measures for environmental crimes. An

²⁵⁰ National Conference tasks include monitoring implementation of the Water Management Strategy, participating in public discussions during the preparation of water management plans, monitoring the implementation of water sector plans, making proposals to improve public participation in planning and decision-making, and educating the public on the importance of water and the need to rationalise its consumption.

unjustified restriction of property rights due to the decision of the Environmental Inspectorate may be appealed to the Ministry of Environmental Protection.

Serbia needs to improve its administrative capacities at both the central and local level, including the capacity of the Inspectorate. The Inspectorate must have greater facility to draft legislation, be given adequate time for legislative consultations and carry out qualitative public consultations, particularly at the local level. Strengthening the capacities of the judiciary, the environmental inspectorate and establishing a track record on implementing the Environmental Crime Directive remain priorities. Serbia needs to improve the implementation of the polluter pays principle, for example by strengthening capacities at local level to collect environmental fees.

Professional background

Involvement of private institutions and other stakeholders in the legislative process is realised through participation in working groups coordinated by the Ministry of Environmental Protection. They are also involved in public hearings, which are mandatory in the process of passing new laws. However, since the responsibility lies solely with the Government to pass the draft law, and Parliament to adopt the law, there is no guaranty that private sector or other stakeholders' opinions will be taken into consideration or upheld during this process. There are no requirements to involve any other stakeholders in preparation of low-level legal frameworks, adoption and passing of bylaws or regulations.

According to unofficial data, there are more than 500 environmental NGOs in Serbia. In most of cases, the adoption of the law takes place by voting in Parliament, without considering the opinion of NGOs and citizen's initiatives. There are rare occasions of public referendum. A public referendum also requires a law declaring that the referendum decision is valid. Although draft laws and proposals should be open to NGOs and scientific bodies contributions and participation, the deadlines for achieving such goals are often short. Consequently, NGOs do not have enough time to prepare, and the influence of such organisations is simply prevented and marginalised. Some NGOs are associated with political parties. In most of the cases, decision-making power rests with local authorities unless a decision is taken by a public vote, referendum, or participatory decision-making mechanism. One of the main issues is a lack of interest by local authorities to provide adequate time and resources for consultations to ensure the participation of different levels of civil society.

The contribution of NGOs and citizen's initiatives should be in advocacy and its influence on decision-makers before voting, however, such influence is almost non-existent or not sufficiently present due to increasing corruption and pre-agreed decisions at the higher levels of authority. Open plenary sessions or committee meetings, which should be attended by the members of the civil sector to ensure open access to debates during decision-making often takes place behind 'closed doors' without the knowledge or involvement of the civil sector. Even if access is allowed to the civil sector, only those who support the decision, a decision that is made in advance, will have the opportunity to attend.

Informing and raising awareness about environmental protection are the main goals of many different NGOs in Serbia, however, some local as well as national TV stations and information channels are often not allowed to show such content. As a result, only social media remains as possible communication channels with the general public.

Social engagement

Involvement of the broader public and NGOs in decisions and regulation preparation is conducted through public hearings, which is mandatory step in the process of passing new laws. In other cases, it is not mandatory and is often avoided.

Although the National Assembly of the Republic of Serbia adopted the Law on Ratification of the Aarhus Convention²⁵¹ on access to information, public participation in decision-making and the right to legal protection in environmental matters in 2009, it has yet to be fully implemented.

²⁵¹ The aim of the Aarhus Convention is to strengthen the role of citizens and civil society organisations in environmental protection and other issues.

The Constitution²⁵² affirms that everyone has the right to a healthy and clean environment. All citizens have the right to receive timely and complete notification about the state of their environment. Furthermore, the Constitution declares that everyone is responsible for environmental protection. However, it seems that this is not sufficiently respected and implemented.

Although many NGOs try to point out environmental problems, it seems that the responsibility of public authorities is lacking. Sharing information with other institutions, and quick responses by authorities to points made by NGOs and civil society is often neglected and side-lined. Particularly worrying are the persistent efforts of the supreme executive and local authorities to prevent civil society organisations from actively defending the public interest. NGOs and citizen's initiatives that indicate the environmental problems of different industrial investors, or that demand answers from the government and ministers about the constant degradation of the environment, are immediately classified as political parties that want to destabilise the government and local authorities.

Awareness-raising tools, civil initiatives and volunteers

Environmental awareness-raising activities in Serbia are generally at a low level. These activities are mostly conducted by NGOs or informal local groups and are often focused on specific issues. There is a lack of systematic governmental activities regarding awareness-raising on any environmental topic. Depending on the organisation leading the awareness-raising campaign, different tools are used, such as national and local traditional media, or social media. NGOs have various useful tools and mechanisms in different areas of cooperation with the domestic population and local authorities. The existence of a key government contact often allows civil society access to information about ongoing policy initiatives and is a crucial tool for creating campaigns and involvement of other organisation, people and volunteers.

NGOs members are often people from different scientific fields. Thus, NGOs have researchers that are well able to understand a current problem and find a suitable solution. Bigger NGOs have strong awareness-raising campaigns and lobbying ability. Recently, petitions have become more common. NGOs have petitions that can be submitted online such as e-petitions or a web forum, however, volunteer petitions door-to-door are also frequent because they provide an opportunity for a more detailed explanation of the problem.

NGOs and other civil initiatives, if possible, can organise public hearings and public forums with stakeholders that address the sensitivities and interests of different groups. Gatherings of NGOs and civil initiatives for the protection of natural and cultural assets are becoming more frequent. However, media coverage is often omitted due to agreements that put profits before environmental protection.

Control and sanctioning system

The Act on Fees for the Use of Public Goods includes environmental protection fees. The Act confirmed the abolition of the earmarked character of the funds and enabled the use of money from environmental protection fees for purposes other than environmental protection. As a result, this economic instrument is rendered senseless since it is based on the Polluter Pays Principle. Companies in Serbia pay a fee for the protection and improvement of the environment with fixed amounts ranging from 5,000 to two million dinars, depending on the activity and size, and not on an amount based on harmful substances released into the waterways or soil; this financial mechanism has so far not had the expected effect on reducing pollution.

A charge for the import or domestic production of plastic (polyethylene) bags was introduced in autumn 2010 and applied as from 2011. Those subject to the tax are the legal persons that import or produce these bags in the domestic economy. The tax base is the weight in tons of the bags placed on the domestic market.

The system of pollution charges was extended in 2010 to include charges on products that become a specific waste stream after use. These include car tyres, asbestos-containing products, batteries and accumulators, mineral and synthetic oils and lubricants, electrical and electronic products and motor vehicles. The current system of water pollution charges does not explicitly take into account the actual discharge of water pollutants. Wastewater discharge charges are very low, which does not encourage investment in wastewater

²⁵² Official Gazette of the RS, No. 98/06

treatment. These charges are also far below those that would be necessary to ensure the financial viability of modern wastewater treatment plants.

The economic and financial context for environmental policy has deteriorated significantly in the aftermath of the global financial crisis in 2007/2008. The earmarking of revenues from pollution charges was abolished in 2012. In this context, the operation of the Environmental Protection Fund was also terminated. The key problems that cause the failure of this financial mechanism are the closure of the Environmental Fund, abolishment of specific-purpose funds collected based on environmental protection fees, and insufficient allocation of funds from the national budget.

According to Serbia's Criminal Code²⁵³, violations of environmental protection regulations can be punished by imprisonment from six months to 8 years and a fine. A person who fails to undertake prescribed environmental protection measures or fails to proceed according to the orders of the competent authority in respect to environmental protection, shall be punished by fine or imprisonment of up to 3-5 years. Violation of environmental regulations while exploiting natural resources, construction of buildings, executing various works or otherwise causing damage to the environment of a substantial extent or over a wide area, shall be punished by imprisonment of up to three years.

Romania

Legislative bodies and managing bodies of the sector

The legislative system for environmental protection, nature conservation, water management and waste management comprise of the **Parliament**, the **Romanian Government** and various relevant **ministries**. Citizens' initiatives require 100,000 signatures from at least a quarter of the total of counties to enter the Parliamentary procedure, and a minimum support of 5000 signatures from each county and the Municipality of Bucharest. When in session, Parliament has the power to initiate laws. During a Parliamentary recess, the Government can issue laws based on the preliminary rule adopted by the Parliament before recess. The Government can adopt Emergency Governmental Order (EGO). However, EGOs are debated later in Parliament with the possibility of accepting them, or in a modified version or rejecting them. Even though the name would suggest that this power can only be used in emergencies, it has become an everyday tool of governmental rule. The Government may assume responsibility before the Chamber of Deputies and the Senate, in joint sitting, upon a programme, a general policy statement, or a bill. However, if Parliament calls for and passes a vote of no confidence, then the Government is dismissed, and the legislative project fails. If Parliament does not call for a vote of no confidence, or the vote fails, then the legislative project is adopted and enters into force. Governmental Decisions are the basis of the application of laws adopted by Parliament. Ministries, in this case the **Ministry of Environment, Waters and Forest**, can also adopt Ministerial Orders which are acts that govern some aspect of the application of a certain law. The **National Agency for Environmental Protection** and the **National Environmental Guard** (governance of environmental protection) and the **National Administration of Romanian Waters** (governance of water management) come under the Ministry of Environment, Waters and Forest. The Ministry itself is responsible for the governance of waste management, although some of the responsibilities of the National Agencies can overlap with each other. For local matters lower-level authorities enforce environmental protection legislation. They have the power to designate local protection areas, and they can have input in local level waste management.

Permitting and control bodies

The **Ministry of Environment, Waters and Forests** is the top public authority for environmental protection, nature conservation, water management and waste management. The Ministry of Environment, Waters and Forests shares its responsibility for environmental protection issues with the National Agency for Environmental Protection and the National Environmental Guard.

The **National Agency for Environmental Protection** implements environmental protection policies, strategies and legislation at national level. The agency with its subordinates is responsible for the 42 counties,

²⁵³ Official Gazette of the RS, No. 85/2005, 88/2005 - corr., 107/2005 - corr., 72/2009 and 111/2009

and for Bucharest. The county-level offices issue environmental permits; establish emission limits based on the degree of pre-existing pollutants; and monitor activities regarding environmental quality, etc.

The **National Environmental Guard** implements government pollution prevention policies, ascertaining if environmental laws have been broken and sanctioning law breakers. The General Secretariat of the National Environmental Guard guides and controls the activities of its 41 county-level subordinates, Bucharest and the Danube Delta Biosphere Reserve. It controls activities that impact upon the environment and applies administrative sanctions to the natural or legal persons responsible; carries out environmental compliance control; and ascertains if something has been done in contravention of environmental laws. In case of violations, the Guard applies the necessary sanctions or notifies the appropriate judicial organs if it believes a possible crime was committed.

The **National Administration of Romanian Waters** is an autonomous public entity administrating and preserving the integrity of the national water management system. It applies quantitative and qualitative management strategies and national policies for water resources. The office is comprised of 11 river basin directorate subordinates organised by river basin or groups of river basins, the National Institute of Hydrology and Water Management, the Training and Documentation Centre of Water Management and the *Hidrotechnica Magazine*.

The **National Agency for Protected Natural Areas** has the mission to ensure the united and efficient administration of protected natural areas. The agency proposes strategies and policies in the domains of protected natural areas and protected flora and fauna; the conservation measures, management plans and regulations of protected natural areas and forwards them to the Ministry for approval; coordinates the implementation of management plans and the sector-specific activities carried out by the administrative structures of protected natural areas; and establishes and puts into practice the performance criteria of the administrators of the protected natural areas. The National Scientific College of Protected Natural Areas is inside the National Agency of Protected Natural Areas and plays the specific role of scientific authority.

Possibilities for judicial remedy and the rules of the administrative courts

Carrying out their various tasks and missions, it is inevitable that the managing, licensing and control bodies of the environmental protection sector come into legal conflict with the natural persons or legal entities they are supposed to regulate or control. As public entities, their decisions and dispositions are administrative acts. Unilateral acts with an individual or normative character that are issued to create, modify or extinguish legal relationships. Judicial oversight is necessary, however, as the acts in question are administrative in nature, there is a special set of procedures which must be followed. The first and most important derogation from common procedure is to file a complaint before addressing the court in administrative matters. After the complaint, the public authority has 30 days to address it. Most cases are decided in favour of the initial position of the public authority and complaints are rejected. If a complaint is rejected, or an answer is not received within 30 days, judicial redressing is possible within 6 months of the resolution of the prior complaint. The competence of the court is determined by the type of public authority one wishes to sue, or upon the monetary value of the dispute. If the suit is against local or county level authorities, and the dispute value is lower than 3 million RON (600,000 Euro), one must address the administrative section of the country court. However, if the suit is against the central authorities or the dispute value is higher than 3 million RON, the court of first instance will be the administrative section of the Court of Appeals closest to one's residence. If the first court renders its verdict, and one wishes to appeal the decision, one has 15 days to do so starting from the day the verdict is communicated to the plaintiff.

Professional organisations promoting, establishing and inspecting regulation and control

The **Romanian Water Association** is a professional organisation with the mission to identify new long-term, cost-effective approaches and solutions to improve water quality management, supplying the public with water, and sewage treatment.

The **Employer and Professional Organisation REMAT** represents waste collection, recovery and recycling industry operators, and is a partner of the competent authorities in the development of new legislation.

The Romanian Environmental Association is a professional organisation which is active in matters of environmental protection and has the objective of perfecting the existing legal framework by cooperating with public institutions.

Social engagement

Act 52/2003 on Transparent Decision-Making in the Public Administration governs how private persons, institutions or professional organisations can take part in the decision-making process. This is to increase the public responsibility owed by the authorities to the citizenry, to actively involve citizens in the decision-making process and to increase the degree of transparency of the whole administration.

Authorities must announce publicly their legislation plans (except defence, public order, strategic economic and political interests) and after 10 days, the authority organise a public debate. This opportunity does not mean that many take advantage of it. It would be worthwhile to raise awareness about public participation rights and opportunities and increase the number of people taking part. Promoting closer cooperation between NGOs could also be beneficial so they can organise and present a more harmonised position. If the opinions of people taking part in the decision-making are diverse or diametrically opposed, the public authorities would find it easier to discount the opinions heard.

Awareness-raising tools, civil initiatives and volunteers

Greenpeace is present in Romania with the mission to protect biodiversity and to prevent pollution and abuses related to water, land and air management. It attracts the attention of the government and corporations through direct creative actions and non-violence when there is danger to the environment.

WWF is present in Romania since 2006, focusing mainly on the area of the Carpathian Mountains, the Danube River and the Danube Delta. Through their programmes, they work to achieve a transition to a green economy and educate the youth of Romania about the environment. One of their current main projects involves the restoration of the Gârla Mare-Vrata wetland by reconnecting this area to the Danube River. The completed project (expected in June 2021) will boost the area's rich biodiversity and contribute to building climate resilience and flood and water management in the area. The restoration is expected to **increase water retention capacity by 5.2 million m³**; reinstate a more natural flow regime across the marsh; help to reduce the impact of flooding on local communities; restore and maintain biodiversity, especially of the habitats necessary for fish for spawning; and provide ecotourism and fishing opportunities. WWF has rewilded European bison in Romania and changed its status from endangered to near threatened on the IUCN Red List; included 24000 ha of virgin beech forest in the UNESCO World Heritage List; banned the use of circus animals; prohibited trophy hunting; and restored more than 1500 ha of wetlands to their natural state along the Danube River and the Danube Delta.

Act for Tomorrow is an NGO with the mission to promote a culture of civic and social responsibility, educate the citizenry on how to improve their quality of life in a sustainable way without endangering the resources of future generations. They recently released a report on micro-plastic pollution in Romanian freshwater sources in partnership with the British Embassy. The research analysed water from 21 of the most important Romanian rivers and found micro-plastics in all the samples.

Civil initiatives could also be useful in awareness-raising by undertaking actions to promote sustainable approaches to waste collection, recycling, carpooling, and other worthwhile activities. Another effective tool of awareness-raising is the publication of investigative journalism, with an impact both on the local and the national level by exposing abuses committed by authorities in the fields of environmental protection or water management.

Control and sanctioning system

The possibility for the Polluter Pays Principle is set forth in many legislations which deal with the endangerment, pollution and damage of the environment. **Emergency Governmental Order 68/2007 on Environmental Accountability, Preventing and Remedying Environmental Damage** lays down liability rules for imminent danger or damages caused to the environment. Article 26 states that the culpable party must bear the costs of reparatory actions. To guarantee the recovery of the incurred costs, a mortgage can be

instituted on the properties and an attachment order can also be instituted upon the accounts of the culpable party. Annex 2 of the EGO establishes acceptable methods for the environmental damage to be repaired. Primary reparation re-establishes the damaged natural resources to their initial or close to initial levels. Complimentary reparation is applied to the damaged area, or similar areas, and compensates for the fact that the primary reparation failed to re-establish the affected resources to their original state. Compensatory reparation is meant to counterbalance any intermediary losses until the primary reparation is achieved.

The Act 107/1996 on Waters prohibits the disposal of wastewaters or emitting pollutants into waters in contravention to, or in the absence of a water management permit. Fines for such illegal activities are set at 75,000-80,000 RON for legal persons and 25,000-30,000 RON for natural persons. Article 92 of 107/1996 makes it a crime to release, throw or inject wastewater, waste, residues or products of any kind which contain solid, liquid, gaseous substances or high concentrations of bacteria or microbes into surface or groundwater, interior maritime waters or the national maritime waters which would render the water harmful to human health, animals, agricultural production, fish stocks and the environment in general. This criminal offense is punishable by 1-5 years imprisonment. If the deed was carried out by negligence, the penalty is imprisonment ranging from 6 months to 2.5 years. Article 92 also criminalises the systematic pollution of water resources in any way. Lawbreakers face 1 to 5 years in jail, or, if the crime was committed out of negligence, the penalty is imprisonment between 6 months to 2.5 years.

Annex 7 of the Emergency Governmental Order 107/2002 on the establishment of the National Agency of Romanian Waters lists the civil fines for releasing more than the permitted maximum concentration of pollutants in evacuated wastewater.

Bulgaria

Legislative bodies and managing bodies of the sector

State environmental protection policy is implemented by the **Minister of Environment and Waters (MOEW)**. MOEW may issue an order delegating powers to Deputy Ministers. The competent bodies under the Environmental Protection Act are the Minister of Environment and Waters, the executive director of the Executive Agency for Environment, the directors of the Regional Inspectorates for Environment and Waters (**RIEW**); the directors of the Basin Directorates (BD), the mayors and district mayors of municipalities, and the regional governors.

RIEWs are administrative structures at the Ministry that were established to ensure the implementation of state policy on environmental protection at the regional level. RIEW conduct inspections, draw up warning and ascertainment protocols; suggest solutions and oversee their implementation; request references, documents and written explanations from the representatives of the inspected sites; draw up acts for establishing administrative violations; provide access to sites for inspection when the activities in them are current or potential sources of pollution or damage to the environment; and request and receive assistance from state and municipal bodies, organisations, legal entities and individuals.

BDs have managerial, regulatory, control and information functions. They develop, update and implement River Basin Management Plans, Flood Risk Management Plans and Marine Strategy. The basin directorates also manage mineral waters - exclusive state property, which are not granted on concession and/or to municipalities. They plan and participate in monitoring under the Water Act, summarise and analyse the data, determine the natural and available resources of groundwater bodies, and establish sanitary protection zones around drinking water supply facilities. The regulatory functions the Water Act are related to the permit regime for water extraction and use. BDs supervise the fulfilment of the conditions specified permits and collect the payment of fees.

According to the Water Act, **water management** is performed at the national and the basin levels. MOEW proposes legislation and carries out national water management policy; develops and proposes national strategies, plans and programmes for water management, protection and sustainable use of waters; issues permits and plans for water extraction and/or water use; determines the basin districts and protected areas

under EU legislation; directs the Environment Agency (responsible for data collection and water monitoring) and RIEW (responsible for environmental protection of waters).

Other relevant **ministries** include the Ministry of Regional Development (for water supply, sewage and wastewater treatment systems and protection from the harmful impacts of waters (including floods) in urban areas); Ministry of Agriculture (irrigation systems and protection from the harmful impacts of water outside urban areas); Ministry of Health (quality control of drinking water, mineral water for health use and bathing waters). Basin Directorates (representatives of the MOEW) carry out national water management policy at the basin level, prepare and implement the RBMPs and FRMPs, and issue permits for water use and wastewater discharge. The Association of Water Supply and Canalisation Systems (WSCS) manages water supply and sewage when owned by the state and multiple municipalities. Agencies responsible for regional level water management are Basin Directorates located in Pleven, Plovdiv, Varna and Blagoevgrad. At the local level, municipal councils and mayors develop and implement local policies and strategies on water supply and sewage in accordance with national strategies and plans (e.g., RBMPs); and oversee the management of the drinking water supply, sewage and wastewater treatment services that are municipal property. The Ministry of Environment and Water plays a leading role in collection, publication and dissemination of information on the state of the environment, and in particular, information related to waste management. The Ministry performs these functions in compliance with the Waste Management Act through the Executive Environmental Agency and through the system of Regional Inspectorates of Environment and Water.

Licensing and control bodies

The main departments and units with responsibilities in water management at the national and regional/local level include the:

- Ministry of Environment and Water (MOEW);
- Executive Environment Agency (EEA);
- Basin Directorates for Water Management - Danube region, East Aegean region, Black Sea region, West Aegean region;
- Regional Inspectorates for Environment and Water - There are 16 MOEW regional inspectorates: Blagoevgrad, Burgas, Varna, Vratsa, Veliko Tarnovo, Montana, Pazardzhik, Pleven, Smolyan, Sofia, Stara Zagora, Haskovo and Shumen;
- 3 National Parks Directorates;
- Ministry of Regional Development and Public Works;
- State Commission for Energy and Water Regulation;
- Ministry of Health;
- Regional Health Inspectorates (in particular, the former inspectorates for protection and control of public health) in Blagoevgrad, Varna, Pleven and Plovdiv;
- Ministry of Agriculture and Food - Hydromelioration Directorate;
- Executive Agency for Fisheries and Aquaculture;
- Irrigation Systems;
- Dams and Cascades State Enterprise at the Ministry of Economy, Energy and Tourism;
- Port Infrastructure State Enterprise at the Ministry of Transport, Information Technologies and Communications;
- Study and Maintenance of the Danube River Executive Agency – Ruse;
- Maritime Administration Executive Agency;
- National Institute of Meteorology and Hydrology - Bulgarian Academy of Sciences;
- National Statistical Institute;
- Chief Fire Safety and Civil Protection Directorate, Ministry of Interior (CD FSCP, Mol) ; and Municipalities

Possibilities for judicial remedy

Chapter Two of the Environmental Protection Act require public bodies to provide the public with environmental information. The **Access to Public Information Act** regulates the detailed procedures for access to public information, including environmental information. It educates the public on the procedure and forms necessary for obtaining access to information, and the means of legal protection when appealing against decisions and refusals to provide access to public information.

The websites of **MOEW** and its structures include specialised 'Access to Information' sections which provide detailed instructions on the procedures for access to environmental information.

In order to ensure transparency about its activities and to facilitate access to public information on the website of the Executive Environment Agency (EEA), a National Electronic Catalogue of Environmental Information Sources has been published and is updated annually, summarising data on environmental information collected, stored and provided to the public by Bulgarian institutions.

Professional background

State policy, environmental management bodies and competent authorities include the Minister of Environment and Water (MOEW), the executive Director of the Executive Environment Agency (EEA), the directors of the Regional Inspectorates for Environment and Waters (RIEW), directors of the Basin Directorates, directors of the National Park Directorates, mayors, and regional governors.

State water management policy aims to achieve and maintain good status of all groundwater, surface waters and marine waters, as a vital resource for life on the planet while limiting the harmful effects on human life and health, environment, cultural heritage and business.

Water management policy is carried out by the MOEW, assisted by the Water Management Directorate. At the basin level, 4 Basin Directorates and 16 Regional Inspectorates of Environment and Water that monitor and control waste waters within their respective territorial scope. Water management policy is focused on development and implementation of River Basin Management Plans as the main planning documents for integrated water management and Marine Strategy. It provides sufficient quantity and quality of water for the population, economy and ecosystems; continuous water supply, reduces consumption and improves water efficiency and management; controls wastewater discharges; develops monitoring system; mitigates adverse climate impacts such as threat assessment and flood risk; identifies areas with potential significant flood risk; develops and implements Flood Risk Management Plans to take specific preventive and protective measures and the preparedness of the competent authorities and the population; finances sustainable water infrastructure investments.

Bulgaria is a partner in several international water conventions including The Convention on Cooperation for the Protection and Sustainable Use of the Danube River, The Convention on the Protection of the Black Sea against Pollution and The Convention on the Protection and Use of Transboundary Watercourses and International Lakes.

Social engagement

Guided by a long-term vision, the EU is taking a forward-looking approach when it comes to protecting the environment. It has set detailed biodiversity and climate goals to be achieved by 2030 and 2050. Environmental non-governmental organizations (NGOs) play an important role in better informing the public about environmental issues and raising the question of what EU environment and climate policy should be about - both now and in the future. The European Union funds environmental NGOs under the LIFE Programme to help them contribute to current and future policies. Environmental NGOs that are non-profit and independent and operate at European level can apply for such funding each year. In principle, the EU supports between 25 and 30 organisations a year. Currently, funding recipients include WWF Europe, Climate Action Network Europe, Friends of the Earth Europe, BirdLife Europe and Slow Food.

Green Balkans is the oldest environmental NGO in Bulgaria and a leading organisation in rare species and habitats conservation. Hundreds of volunteers and experts with international and national support achieve

significant results in preserving the unique natural heritage of Bulgaria. Green Balkans implemented, in partnership with WWF-International, GEF/World Bank, UNDP, EU Life Programme, EURONATURE, Environment Operational Programme and others, over 25 projects and public campaigns aimed at protecting the Bulgarian wetlands, mainly along the Danube, Maritsa and the Black Sea coast successfully.

The Bulgarian Society for the Protection of Birds (BSPB) protects wild birds, their places and habitats since 1988. They protect the right of wildlife to exist, thus contributing to the sustainable use of natural resources and human well-being. BSPB upholds the public interest and the right of everyone to a protected and healthy natural living environment. They regularly collect and analyse scientific data and monitor the condition of bird populations. They care for the conservation of biodiversity and contribute to the sustainable use of natural resources.

The Black Sea NGO Network (BSNN) was established in 1998 for developing an NGO community in all Black Sea countries. The International Black Sea Non-Governmental Forum, the first NGO attempt aimed to protect and restore the Black Sea. BSNN focuses on regional and European environmental policies; international water management; international and EU legislation; conservation of international and Black Sea biodiversity; coastal zone management; capacity-building for lobbying and advocacy; developing expertise in international environmental governance, agriculture and the environment; and reviewing national legislation and harmonising it with EU policies and practices.

Responsibility for environmental protection is nurtured in children from the earliest age. Pre-school education is effective means for successful learning and development. The state education expects results related to the recognition of safety rules in case of natural disasters, awareness of the need for animal care and their right to life, awareness of the need for conditions for growth and development of plants and others.

Awareness-raising and the possibilities for civil initiatives and volunteers

The Internet is widely used in Bulgaria in increase civic participation in the formulation, implementation and monitoring of environmental legislation. In practice, the administration and civil society organisations can apply for access to information, create electronic portals and registers, publish information on official government websites and agencies, disseminate information in the media, portals and newspapers of NGOs, etc. There are also consultations through the above-mentioned information sources, public hearings, conferences, public discussions and debates, civic councils, focus groups, online events, expert panels and discussions, inquiries via email lists, etc.

The parallel use of different models of participation involves more stakeholders in the process. For example, the publication of bills, the collection of civic comments and opinions can be combined with the organization of public debates to hear opinions, discussions and finding better solutions to various cases through dialogue and active stakeholder participation. Another argument in favour of the parallel application of different models of participation is the fact that not every citizen (or civic organisation) has the opportunity, ability and right to participate at every stage of the process or to take advantage of every existing participation tool. Parallel implementation expands the scope of the target group of citizens involved in the process. It is good practice to keep the civic participation process active and open as long as possible to amend the regulations, even after sending the document for government approval.

The Black Sea NGO Network (BSNN) web-based tool improves capacity-building, information exchange and integration for youth and other regional stakeholder groups. The interactive, flexible, user-friendly ICT tool is a central output of MARLITER Project. It consists of background information, toolkits, spatial databases, a communication platform, policy recommendations, best practices, e-learning material and serves as a channel for compilation, synthesis, exchange and dissemination of knowledge related to marine litter.

The Black Sea Basin Directorate (BSBD) holds information meetings to raise awareness of the environmental effects of marine litter. BSBD implemented a program of measures to achieve the objectives of the Bulgarian Marine Strategy: For example, Measure № 5 coordinated organisation/ support of annual campaigns to raise awareness of the business sector (traders, beach concessions, users of beach services, fishermen, etc.) and the public (tourists, students, children, etc.), regarding the environmental effects of marine litter and the need for recycling. The events are organised in partnership with various NGOs, national institutes and

foundations. Participants are involved in cleaning the beaches. In pursuance Measure 5, audio-visual materials have been developed and disseminated on national television to inform and raise public awareness about the negative effects of marine litter.

Control and sanctioning system

The ordinance on the procedure determines and imposes sanctions in case of damage or pollution of the environment above the admissible norms or in case of non-observance of the emission norms and restrictions determined in the permits. Sanctions imposed on the persons or legal persons responsible by order of the Minister of Environment and Water. The Minister of Environment and Water may authorise Ministry officials to impose sanctions for established pollution or damage to the environment. The Minister or the designated official shall determine the sanction amount and duration after an inspection by the control bodies of the MOEW and a statement of findings. Sanctions can be one-off or ongoing. A one-time sanction is imposed for any allowed or accidental massive pollution incident, or damage to the environment above the established norms.

When pollution or damage to the environment above the permissible norms is established by measurements and/or laboratory tests and analyses, the protocols from these measurements and/or tests and analyses must be attached to the statement of findings. The control bodies of the MOEW take samples in the presence of a representative of the entity that is a source of pollution or damage to the environment. Sampling, measurements, tests and analyses are performed by accredited laboratories or by laboratories with normative and metrological provision of measurements in the system of the Ministry of Environment and Water, as well as by laboratories performing their own periodic measurements.

It is prohibited to site new residential buildings and outbuildings on floodplains. Disturbance of the natural condition of riverbeds, riverbanks and coastal floodplains; reducing the conductivity of riverbeds, including barrages and weirs without the relevant permit; the use of riverbeds as landfills, earth and rock mass; and the execution of constructions over covered river sections is also prohibited. Administrative violations and penalties shall be levied against a person or legal person who dumps waste in unauthorised places; hands over waste to persons who do not have a permit, complex permit or registration document in cases when such are required; disposes of waste marked with separate collection symbols; fails to comply with the provisions for reuse, recycling and recovery of construction waste; or disposes of household waste in containers designated for separate collection.

Directive 2005/35/EC on Ship-source Pollution introduces rules and penalties for infringements in the event of discharges of oil or other polluting substances from ships. The current legislation states that ship-source pollution discharges constitute a principle criminal offence. Minor discharges are not automatically considered as offences, except where repeated discharges lead to a deterioration in water quality.

The persons responsible for discharging polluting substances may be subject to criminal penalties if they have acted with intent, recklessly or with serious negligence. The act of inciting or aiding and abetting a person to discharge a polluting substance may also lead to criminal penalties. The Directive applies to all types of vessels, irrespective of their flag.

Furthermore, discharges of pollution are forbidden in the internal waters and ports of an EU country; the territorial waters of an EU country; straits used for international navigation subject to the right of transit passage as laid down in the 1982 United Nations Convention on the Law of the Sea; the exclusive economic zone (EEZ) of an EU country; and the high seas.

Ukraine

Legislative bodies and managing bodies of the sector

The current system of central executive bodies in the field of environment is quite complex, consisting of ministries and their departments, each with its own purpose, decision-making powers. For some ministries and departments, environment protection is the main, dominant function. They are part of the group of specially empowered executive bodies in the field of environment. For other executive agencies,

environmental protection is only part of the main functions. An integral part of the state system of environmental agencies are the sectoral executive authorities - ministries, which carry out the relevant environmental functions based on general principles of administration and subordinate bodies management. The tasks of the ministries are primarily limited to the area of state control entrusted to them, the aim of which is to ensure environmental protection and nature management through the development and implementation of preventive measures by subordinate bodies and legal entities.

Control is delegated to authorised State bodies and certain State formations, namely the Councils of People's Deputies, the State administration and the Ministry of the Environment and Natural Resources and its local bodies.

The national environmental regulatory bodies, the public authorities empowered by legislative acts, have competence in areas such as environmental safety and protection. In accordance with the tasks assigned to them, they exercise overall public control in this area, such a bodies ss The Verkhovna Rada of Ukraine²⁵⁴ or the President of Ukraine²⁵⁵. The National Security and Defence Council of Ukraine amongst other duties²⁵⁶ is responsible for environmental security. The Cabinet of Ministers of Ukraine implements environmental policy, aims to ensure the protection of the environmental interests of the state and its citizens, and establishes the State Committee for Technogenic and Environmental Safety and Emergency. For the central executive bodies, ensuring the implementation of environmental policy at national and local level is the single, main objective. The Ministry of Ecology and Natural Resources of Ukraine plays the leading role among the central executive bodies with special environmental powers. In the field of environment protection, certain tasks are performed by the Ministry of Health of Ukraine, implementing certain sanitary, hygiene and epidemiological regulations.

The bodies responsible for regulating nature conservation at **territorial level** are local authorities and local public administrations as local enforcement bodies.

The organisation of the environmental governance system, the implementation of environmental policy can be divided into two main parts according to territoriality: **administrative-territorial** and **sectoral**. The first is organised according to the administrative-territorial structure, where management is exercised by institutions at different levels: national, regional, district and local municipalities. Control activities are carried out by central and local enforcement bodies, which differentiate their activities according to the type of natural resource. In general, the regulatory structure is represented by public authorities at all levels. The main task of state regulation is to create preconditions for the use of natural resources in economic activities, giving priority to the human right to an environment safe for life and health, and to achieve sustainable development through technological and biological mechanisms of self-reproduction of potential natural resources.

The system of governing bodies in the field of environmental protection includes institutions: **general management**²⁵⁷ and **special public administration**²⁵⁸. The rights of public inspectors for environmental

²⁵⁴ It performs a legislative function - the adoption of legislative documents containing conceptual, programmatic provisions to address pressing environmental issues, as well as ratification of international agreements and harmonization, in accordance with these agreements, national legislation.

²⁵⁵ It acts as a guarantor of the stability of public law, including the law of the ecological sphere, in accordance with the rights granted, and has the possibility to actively influence the development of ecological legislation, the improvement of the organisational system of regulation in the field of maintaining ecological security).

²⁵⁶ Its power include, in particular, making proposals to the President of Ukraine on the implementation of the principles of domestic and foreign policy in the field of national security and defence, including in the field of environmental security; coordination and control over the activities of executive bodies in the field of national (including environmental) security and defence in peacetime; coordination and control over the activities of executive bodies in the field of national security and defence in conditions of martial law or state of emergency and in the event of crisis situations that threaten the national security of Ukraine.

²⁵⁷ Verkhovna Rada of Ukraine, President of Ukraine, Cabinet of Ministers of Ukraine, National Police

²⁵⁸ Ministry of Ecology and Natural Resources of Ukraine, its territorial departments, The State Service of Ukraine for Emergencies, the State Agency of Land Resources of Ukraine, the State Agency of Water Resources of Ukraine, the State Agency of Forest Resources of Ukraine, the State Agency of Fisheries; local self-government bodies, as well as public administration bodies (public environmental associations and organizations).

protection have been restored²⁵⁹, preventing violations of the law on illegal logging, mining, control over the prevention of corruption by law enforcement agencies in the field of poaching in hunting and fishing, etc.

The state bodies exercising control over the observance of the environmental legislation requirements:

- The State Agency of Fisheries of Ukraine carries out state supervision (control) in the field of protection, use and reproduction of aquatic bioresources;
- State Service of Geology and Subsoil of Ukraine;
- State Agency of Forest Resources of Ukraine;
- Public inspectors for environmental protection (Regulations on public inspectors for environmental protection, approved by the order of ecology and natural resources of Ukraine²⁶⁰;
- State Ecological Inspectorate of Ukraine and its territorial subdivisions²⁶¹.

One of the **important tasks of the State Ecological Inspectorate of Ukraine**, which has not been implemented in the last 3 years, is the state supervision of law enforcement, in particular the settlement of environmental violations in border areas. Currently, these tasks are carried out by the State Customs Service and the Border Guard Service. This situation deserves particular attention, as it is of utmost importance to identify the environmental violation at the border, as only in this case, according to Ukrainian law, it is possible to return dangerous goods to the return address. Once the dangerous goods enter Ukraine, it is not possible to return them, the disposal of the dangerous goods is carried out at Ukrainian expense and on Ukrainian territory.

The administrative and legal system of environmental protection and security in Ukraine includes: the Verkhovna Rada of Ukraine, state bodies and their officials (the President of Ukraine, the Cabinet of Ministers of Ukraine, the courts, the Prosecutor's Office of Ukraine, the National Police, ministries and other central executive bodies), the Ukrainian people (individual citizens, social organisations), united by the goals and obligations of nature protection and acting in a coordinated manner within the law of Ukraine.

Licensing and control bodies

A legal entity may carry out certain activities only after obtaining a license²⁶². The list of types of economic activities subject to authorisation is set out in Article 9 of the Act on Licensing is exhaustive. The authorising body is the executive body designated by the Cabinet of Ministers or the executive body of the local councils specifically empowered for this purpose. In Ukraine there is no single state licensing body that issues licences for all activities. Licences are issued by different higher or local executive bodies, which are determined by the Cabinet of Ministers. Disputes in the field of environmental protection are resolved by the court, local councils or bodies formed by them, in accordance with their competence and in the manner prescribed by the legislation of Ukraine. Disputes arising in the field of waste management are resolved by the court in the manner prescribed by law. International treaties of Ukraine may provide for a different procedure for resolving disputes concerning transboundary movements of waste.

Professional background

Ukraine's Ministry of Environment and Natural Resources formulates and implements environmental protection policy, e.g. in the field of development of water management and hydraulic land reclamation, management, use and reproduction of surface water resources; implementation of state supervision (control) in the field of environmental protection, rational use, reproduction and protection of natural resources, implementation of state geological control, as well as in the field of ozone layer conservation,

²⁵⁹ Act of Ukraine "On Amendments to Certain Legislative Acts on Protection wildlife "and" On Amendments to Certain Legislative Acts of Ukraine Concerning the Protection of Biodiversity "

²⁶⁰ 27 February 2002, № 88

²⁶¹ The State Ecological Inspectorate of Ukraine is a central executive body, the activities of which are directed and coordinated by the Cabinet of Ministers of Ukraine through the Minister of Environmental Protection and Natural Resources of Ukraine. The State Ecological Inspectorate of Ukraine shall, within the powers provided by law, exercise state supervision (control) over the observance of the requirements of the legislation.

²⁶² According to Art. 91 of the CCU

regulation of negative anthropogenic impact on climate change and compliance with the UN Framework Convention on Climate Change, the Kyoto Protocol and the Paris Agreement.

Subordinate institutions are the State Ecological Inspectorate of Ukraine, State Agency for Exclusion Zone Management, State Service of Geology and Subsoil, State Agency of Water Resources, State Agency of Forest Resources and State Agency of Fisheries Institutions of the nature reserve fund belonging to the sphere of management of the Ministry of Environment.

Social engagement

An Aarhus Information and Education Centre has been established in 2003 under the Ministry of Environmental Protection and Natural Resources of Ukraine.

The Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters was adopted on 25 June 1998 at the 4th Environment Ministerial Conference in Aarhus, Denmark. Ukraine ratified the Aarhus Convention on 6 July 1999. The Aarhus Information Centre was established in 2003 within the Ministry of Environment in the framework of the Ukrainian-Danish project "Assistance to Ukraine in the implementation of the Aarhus Convention", since 2004 - Aarhus Information and Education Centre, since 2013 - Aarhus Information and Education Centre.

Public consultations and public receptions are also held at various agencies, namely the State Ecological Inspectorate, the State Agency of Exclusion Zones Management, the State Service for Geology and Soil Protection, the State Agency for Water Management, the State Agency of Forestry and the State Agency of Fisheries.

River basin councils have also been established as advisory bodies to the Ukrainian State Water Agency. The Watershed Council was established by the State Water Agency and is an advisory body to the State Water Agency within the watersheds.

Awareness raising tools are community councils, community receptions, Basin Councils, Aarhus Center.

Control and sanctioning system

Control and sanctions are carried out by the State Ecological Inspectorate. Environmental protection is carried out by the lawful central executive bodies, their territorial bodies, state collegial bodies, executive bodies, local state administration bodies and local self-governments within the powers granted by law. These detect and prevent violations of the law by economic operators and ensure the interests of society, in particular the adequate quality of products, works and services, the permissible level of threats to the population and the environment.

Conclusions 2

Upon exploring the situation each of the parties has given a hierarchical structure of legislative bodies, organization for control and sanctions in the sector, environmental protection, nature conservation, water and waste management, also illegal dumping of waste, sewage sludge, surface and ground water pollution. It is noted regarding awareness-raising campaigns that civil initiatives are very important, organising clean-up actions at local level, usually with youth organizations. Thus, the responsibility for environmental protection is nurtured in children and students from the earliest age.

It is necessary to note the intersection of the campaigns for cleaning the maritime beaches, given the fact that the final recipient of waste from the river is the marine environment.

Best practices



Austria

As there are no assessments of the existing anti-litter measures, we cannot name 'best practice' examples, but nevertheless the following actions help to reduce the amount of litter disposed of into Austria's nature. Also, there are no particular measures for litter near water bodies.

Awareness-raising solutions

Austria has a lot of awareness-raising campaigns. All federal states have their own awareness campaigns in the form of poster actions, which often are accompanied by media reports and/or events. The aim is to raise awareness of the litter problem or how to dispose of litter properly. The posters are placed alongside roads, public areas, and litter hot spots (Stoifl & Oliva, 2020).

Clean-up Days are organised by municipalities, district waste associations, NGOs, schools, companies, etc. They collect litter in cities and in the woods, combined with activities to strengthen the sense of community. The majority of these campaigns take place in spring and often refer to 'spring cleaning'. The collection equipment is most often provided by public facilities; the waste is recycled by sorting it according to the waste stream. Clean-up campaigns are promoted through various media, such as advertisements in regional newspapers, television, poster campaigns and social media channels. (Stoifl & Oliva, 2020).

To improve the appearance of public areas, regular and frequent cleaning of those areas is necessary. A clean appearance is worth striving for, due to the 'broken window effect'²⁶³.

The Viennese campaign is called 'Wien räumt auf. Mach mit!' The clean-up has been held each spring since 2006 and the organising body is the municipal administration 48 (MA 48). Stoifl and Oliva (2020) name three types of cleaning actions: self-organised cleaning action (actions planned by individuals); joint cleaning action for schools and kindergartens (actions planned by municipal administration explicitly for schools and kindergartens); and underwater cleaning action (action planned by a municipal administration for divers).

The Vorarlberg Association of Municipalities informs residents about current developments on the issue of littering via the *umweltV* website. Vorarlberg's municipalities are very committed to awareness-raising campaigns and organise Clean-up Days with two target dates each year. The Association of Municipalities also implements graphic campaigns, such as using big yellow arrows pointing at litter along roads to show how much litter is lying around. The arrows can be borrowed from the environmental association for a few weeks at a time.

Regulatory solutions

Waste collection system

The area around the Danube Canal is maintained by MA 42, which means they are primarily responsible for litter removal alongside the canal. In general, MA 48 is responsible for the cleaning of streets in Vienna. This includes roadsides, pathways and green areas like grass strips, roundabouts or traffic islands next to roads and pathways. There are 25,000 litter bins in parks and on pathways. Twenty thousand of the bins have an integrated ashtray, and there are 2,000 additional stand-alone ashtrays at highly frequented areas. MA 48 is also in charge of 16 waste management centres for legal and free disposal of bulky waste (Stoifl & Oliva, 2020).

Areas around the Old and New Danube are maintained by MA 45 at a frequency depending on the density of visitors. The litter bins are provided by MA 45 and MA 48, but both function independently of each other.

Litter bins provided by MA 48 in the general areas of the city are designed to be eye-catching and more noticeable (Stoifl & Oliva, 2020). They have a bright orange stripe and stickers with funny quotes on them which are meant to animate people to dispose of their litter correctly. The newest ones are related to the

²⁶³ This effect states that people are more likely to litter if there is already litter around and vice-versa (not litter if there is no litter around) (Stoifl & Oliva, 2020).

facemask wearing regulation to remind citizens about the correct disposal of face masks. The stickers show a mask with cartoon eyes saying, 'old masks belong to the bin!' ('alte Masken g'hörn 'kübelt'!) (Thon, 2021).

Public water fountains

Vienna has a high density of public drinking fountains which provide free drinking water throughout the city in public areas. They can contribute to the reduction of single-use beverage containers. In total, there are about 1100 public drinking fountains. Some of them are mobile units called *Brunnhilde* that are set up at highly frequented public places in the summer months (Stadt Wien, 2021).

Sanctioning solutions

Waste Watcher

The Viennese Cleanliness Act²⁶⁴ regulates the sanctions of littering and increased controls in public areas. The increased control aims to make people feel like they are being watched so they try to behave in the desired way allowing the monitoring of public areas by trained staff. The so-called 'Waste Watchers' are part of MA 48 and other municipal departments. The Act authorises them to warn violators and impose fines, and if necessary file a report to the Water Law Department (MA 58). The imposed fines range from € 50 to € 2000 (Stoifl & Oliva, 2020). The collected fines are earmarked and are used for further cleaning actions in Vienna. Since 2017, the pollution of water bodies (Old and New Danube, Danube canal, fountains and ponds), as well as 'street furniture' and playground equipment can be punished by the Waste Watchers (Thon, 2018). The Waste Watchers focus on abandoned dog droppings, illegal bulky waste deposits, cigarette butts, abandoned shopping trolleys and incorrect disposal of grit in spring (Stoifl & Oliva, 2020). Waste Watchers also play an informative role with around 19,000 consultations carried out last year. In 2020, MA 48 had portable ashtrays produced out of PET-blanks, the ashtrays were distributed by the Waste Watchers who gave them out to smokers for free (Thon, 2021). Waste Watchers have been consistent in their activities over the last few years (Thon, 2018; Thon, 2019; Thon, 2020; Thon, 2021).

Slovakia

Several projects have been implemented by different municipalities in Slovakia aiming to optimise water distribution operations or halt inefficiencies like water leakage. For instance, a project on smart water meters has been deployed in the city of Trenčín, which is the major shareholder in Trenčianske Waterworks and Sewers. The project utilises the IoT network, as a unifying solution for the data and information flow in the city from multiple services and making the operation more efficient.

The 'NanoScreen POP Project' by Saftra Photonics, created by scientists from Pavel Jozef Šafárik University in Košice, won the 2017 Startup Award. The technology they developed simplifies, speeds up and reduces the cost of the detection of harmful persistent organic pollutants (POPs) in water and food. The solution is based on a chip (NanoScreen POP - a combination of nanotechnology, photonics, organic chemistry and digital technology) which can be performed (without spectrometry, chromatography etc.) directly in the field at the same level of sensitivity and on a portable device.

The pilot project "Klimasken" is based on a tool to assess the contribution of cities, neighbourhoods and buildings to climate change. The tool consists of dozens of indicator fields that the user fills in with data and simple calculations. It monitors key signs of climate change, such as temperature rises, heat waves, precipitation, drought or extreme weather events affecting the city, district or building concerned.

The mobile app called TrashOut facilitates communication between citizens and municipalities to map illegal dumpsites. The app was developed by an NGO and by 16 April 2021, 8,731 illegal dumpsites had been reported through the app. Municipalities have the ability to insert custom widgets that can be used to highlight statistics that inform citizens about the current situation of landfills in their city. Regions in the west of Slovakia, namely Bratislava, Zsolna and Nitra, have been the most active in the fight against illegal landfills. Of the 773 illegal landfills reported in Slovakia in 2019, two hundred and fifty-one have already been closed.

²⁶⁴ Wiener Reinhaltegesetz, 2008

The introduction of bulk collection in some municipalities is a good example of how to reduce the amount of mixed municipal waste. For example, the city of Dojč electronically scans waste bins to set fees based on the amount of waste generated. The Sensoneo Company introduced hardware to garbage cans or trucks and equipped the containers with RFID chips that measure the volume of waste. This has also made waste management operations, especially logistics, more efficient.

Hungary

Regulatory

Some new measures for waste disposal were defined by Act II of 2021. These instruments include the elimination of illegal dumping and the return of glass, plastic bottles and metal cans. It is hoped that the changes will create the legal basis for the transition to a circular economy.

The establishment of the Parliamentary Commissioner for Future Generations (Ombudsman) in Hungary was a unique institutional and international achievement. The post was created in 2008 to protect the fundamental right to a healthy environment but was eliminated in 2012²⁶⁵ by the current government. The office played an important role in providing constitutional proposals, resolutions, legislative opinions, advocating unresolved citizen environmental complaints, and sending petitions to the Constitutional Court.

The National Council for Sustainable Development (NFFT) was established in 2008 as a Parliamentary advisory and conciliation body. Its task is to facilitate the definition of domestic sustainable development principles, objectives and comprehensive tasks; consider related international cooperation; strengthen public and social participation; and implement the UN Sustainable Development Goals (SDGs). The NFFT's main aim is to promote the change of attitude necessary for sustainability in all segments of society. Every two years, the NFFT reports to society and Parliament on its progress in implementing the Framework Strategy.

Awareness-raising

The "Let's clean up the country" project is a national programme aimed at cleaning up public spaces (between 2020 and 2022). Funding is provided by the Government, the Hungarian State Railways, the Hungarian Public Roads, the National Water Directorate General, local authorities, state forestry and national park directorates. The location of illegally dumped waste will be mapped, documented, removed and treated. Cleaned areas are monitored by installing cameras and barriers where necessary.²⁶⁶

Hungary's 10 national parks are flagship sites for environmental education. The network of science workshops and their educational programmes are key elements of environmental education. Education for sustainability as well as respect and protection of nature are at the heart of these programmes. In addition to learning, it is essential to bring children as close as possible to nature and to outdoor classroom activities.

The European Week for Waste Reduction (ewwr.eu) has more participating organisations in Hungary every year. The initiative to enhance waste prevention is a perfect opportunity to involve local communities along rivers of the Tid(y)Up! project countries.

Since 2014, the subject of the environment has been included in the ethics curriculum for 11th-grade secondary school students; sustainability will be an optional subject from autumn 2021 with textbook and programme packages for 9th and 10th-grade students.

The eco-school label is awarded to schools that educate students in the spirit of ecology. The educational materials and tools reflect ecological values, the activities (e.g. recycling, composting, water and energy

²⁶⁵ http://www.jno.hu/hu/?&menu=rolunk_egyeb&doc=dorev-110326 , <http://www.jno.hu/en/>

²⁶⁶ During phase I of the Project, National Park Directorates

- cleaned 211 sites, of which 33 were reported on the WasteRadar application
- removed 5325 m³ of collected waste
- a 8730 meter-long riverbank of Bodrog River, and an approx. 40-kilometre riverside bank of the Tisza was cleaned
- 16 barriers and 45 cameras were installed to prevent further illegal dumping
- 65 trees were planted in the cleared areas

saving, eco-friendly products, joining waste collection campaigns, plastic-free Fridays) appeal to parents and achieve a wider dissemination.

There are also joint, long-term environmental awareness-raising projects like JoinTisza, the Day of Hungary's Nature (<http://magyartermeszt.hu/magyartermesztnapja/>) or LIFE VisPO cleaning up the river Po in Italy and the Danube in Hungary.

The Plastic Cup is a PET boat race created to eliminate the huge waste pollution of Tisza River and the project that brought Tid(y)Up! to life. The Plastic Cup contributes to a clean Tisza River by organising events, waste collection campaigns, research and development, team-building activities, exhibitions and professional discussions throughout the year.

VALYO, 'City and River' is an association working for the valorisation of the banks of the Danube in Budapest. As the largest and most characteristic natural treasure of the Hungarian capital, the Danube is currently cut off by roads and access difficulties. VALYO uses art and community development to draw attention to these places and to propose ways in which they can be used by the community. Originally founded in 1995 by five environmental organisations in Hungary, the HUMUSZ Association works to provide users with low-waste, environmentally conscious solutions and lifestyle models, educators with support materials and decision-makers with comprehensive and realistic recommendations.

Sanctioning solutions

The system of sanctions has been modified by the principle of proportionality to improve the deterrent effect. If the act does not fall into the category of a "criminal offence" or the perpetrator cannot be identified, the law establishes the liability of the property owner on the basis of presumptions.

Effective control and punishment of illegal waste disposal and dumping can only realistically occur with the use of adequately designed technological solutions. The use of human resources in this direction should be minimised due to its high cost and low control efficiency. Recently introduced regulation²⁶⁷ allows the road manager to use data recording systems to keep public roads clean. In doing so, the law also seeks to ensure the application of the principles of personal data protection, particularly concerning data storage, purpose limitation, limited retention and usability.

Serbia

WWF Adria Serbia is focused on improving the governance systems of natural resources and management of protected areas. The aim is to achieve conservation outcomes and improve regional cooperation with a growing team and dedicated staff focusing on national and regional priorities.

There are some examples of good environmental practice and innovative approaches in Serbia that could serve as local-level examples. The Provincial Secretariat for Energy, Construction and Transport has, for many years, allocated grants for co-funding the implementation of projects concerning the use of biomass in the production of heating energy in public institutions in the territory of the Autonomous Province of Vojvodina. The aim is to use local resources such as crop residues, as well as waste from the wood processing industry and forestry.

A project to strengthen the Aarhus Centres for the transition to a circular economy and the more efficient use of natural resources is being implemented by the Organization for Security and Co-operation in Europe (OSCE) which is supported by the Ministry of Environmental Protection, and financed by the Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management. The project brings together Aarhus Centres in eight countries, with the first workshop was held on 6 March 2018 in Belgrade. The project aims to increase capacity and exchange experience, as well as redistribute smaller donations for activities at the local level.

During 2018 – 2020, 17 towns and municipalities were supported through the German Development Agency (GIZ) Climate Sensitive Waste Management Project, a revision of local waste management plans in line with

²⁶⁷ <https://net.jogtar.hu/jogszabaly?docid=98800001.tv>

circular economy principles, development/revision of regional waste management plans in the context of the circular economy; development and promotion of regional value chains in the waste sector; and the introduction of waste separation at source, home composting, and construction of two central composting plants.

The efficient use of resources is promoted in pilot municipalities through such measures as the primary separation of waste, recycling and composting/home composting. Public utility companies and municipal administrations are followed closely in order to showcase that customised environmental policy can become a valuable economic factor.

Romania

In Romania, a plan to introduce a cash deposit scheme for plastic, aluminium and glass packaging is currently being developed to reduce the amount of waste generated and achieve a better recycling rate for this type of packaging. Under the plan, consumers would pay an extra RON 0.5 (about €0.10) for these products, which would be refunded to them when they return the packaging to designated collection points or to shops selling these types of products. The legislation will be adopted sometime in the next few months and the rest of the year will be spent on putting in place the necessary infrastructure to make the system applicable and fully operational by the beginning of 2022.

Another legislative proposal exists for the implementation of a special prosecutorial body under the General Prosecutor's Office which would focus on illegal logging, non-compliance with pollution prevention rules and the killing of protected species. The law was adopted last year by Parliament, however the Constitutional Court found it in breach of the Constitution, so it re-entered Parliamentary procedure and is not yet currently in force.

Investigative journalism plays an important role in raising awareness in Romania. One such piece was made by *Recorder*; the newspaper used freedom of information requests for monitoring data sent to local public health authorities to compile a map of drinking water quality. They found that in a huge number of cases, mostly in rural areas, even though the public health authorities found the water to be harmful, the localities and operators operating the water supply systems neglected to inform the population that the water was not fit for human consumption. Moreover, after the article was published, it came to light through information provided by readers that there were more than 150 localities where the water supply system was in use without the necessary approvals of the local public health authority.

Bulgaria

Waste production prevention includes promoting better consumer behaviour and recycling programs, reducing the most used disposable plastic items, researching new, innovative and rapidly degradable materials. Awareness campaigns for public awareness and engagement can be increased through the implementation of education and environmental campaigns in the countries of the region. Stakeholders should be invited to assist in the development of the campaign and may act as intermediaries to increase their visibility. Economic instruments supporting sustainable development must be encouraged, through the implementation of economic initiatives, the introduction of environmentally friendly technologies, activities and practices, the cessation of subsidies that encourage the use of environmentally harmful technologies, activities and practices and the introduction of fines for those who use them. Funding research, development and innovation can also lead to waste prevention. Internet portals present the results and good practices of research and development in the field of products and technologies that use less resources and generate less waste. Training development, information on European and national policies and programs for efficient use of resources and techniques can also prevent industrial waste generation.

Ukraine

On June 22, 2017, a contract was signed with the EMIT Group Consortium - Ercole Marelli Impianti Tecnologici S.R.L. and ATZWANGER S.p.A. Reconstruction of treatment facilities is envisaged, which includes mechanical

treatment facilities, biological treatment facilities, wastewater disinfection facilities and sludge treatment complexes. The project will be implemented on the territory of the city's existing wastewater treatment plants, which will provide full mechanical and biological treatment of household wastewater from Ternopil and several neighbouring municipalities. The planned capacity of the treatment plants is 50 000 m³/day (2083,3 m³/h). The estimated maximum flow of wastewater is 64 thousand m³/day, which will be taken into account in the design of the technological solutions. The implementation of the project as a whole will also have a positive socio-economic impact and will result in an improvement in the quality of wastewater treatment through the introduction of modern wastewater treatment technology, the use of state-of-the-art equipment; an increase in the local level of environmental awareness of the population; a reduction in the likelihood of environmental pollution through safer operation of the city's wastewater treatment plants; and an improvement in the ecological and chemical status of the MPV Seret through the introduction of innovative solutions for wastewater treatment in Ternopil.

In the last few years, bottom-up initiatives started to bloom in Transcarpathia establishing selective waste collection points in those regions which are operating without proper communal waste collection. Furthermore, they installed waste-filter systems on heavily contaminated rivers.

Unfortunately, there are very few best practices of regulatory decisions, awareness-raising decisions and sanctions to prevent illegal dumping and water pollution that we would recommend to other countries and that have been applied in Ukraine in recent years.

Conclusions 3

Sanctions and good regulatory practices to prevent illegal dumping are presented by each country. Information campaigns and public awareness-raising have been carried out mainly through projects and other similar initiatives with the active participation of the public and NGOs. In general, no single example of best and most effective practice was provided.

Proposals



Austria

Most of the problems concerning **macro plastic** waste in Austria are solved. Introducing a one-way deposit system esp. for plastic bottles might additionally assist the good performance.

In the area of the use of **microplastics** in cosmetic products, there are already some manufacturers who voluntarily renounce the addition of microplastics. In addition, manufacturers that carry the EU eco-label "rinse-off" cosmetic products commit to the elimination of microplastics. With regard to secondary microplastics from environmental pollution, there are numerous projects and legislative initiatives within the EU (see European Strategy for Plastics in the Circular Economy) that aim to address and reduce plastic/microplastics. In this context, a legal framework for reducing the environmental impact of certain plastic products is currently being developed at EU level and should be implemented.

Every consumer can contribute to avoiding the formation of further microplastics by properly disposing of plastic products that are no longer needed via recycling collection points or household waste.

Slovakia

Despite the fact that the Waste Act prohibits the disposal of sorted waste in landfills, this is massively violated and historic illegal landfills from the 1960s to the 1980s are used. The perpetrators are unknown and, after the land was privatised in the 1990s, the current owners are unwilling to take responsibility. Judicial decisions are often subject to significant delays due to unknown landowners and a lack of communication between the judiciary, public organisations and owners of land with illegal dumps or environmental hazards.

Many companies do not usually have waste management, waste treatment and recovery, or waste collection facility operation permits; nor do they classify waste according to the Waste Catalogue. This is a violation of the obligation to collect sorted waste according to types of waste and secure it against deterioration or theft. Other companies and municipalities hand over waste to an unauthorised person or company for waste disposal.

Even though Slovakia does not meet its national targets for municipal waste recycling and the diversion of waste from landfills, the partial targets that are passed on to producers are being met. Major water pollution is linked to industrial activity, as in the case of the Upper Nyitra River and to agriculture, as seen for example in the Lower Nyitra River. Mining, electricity and chemical production are also factors of environmental pollution. Another major problem is illegal dumping of waste

State official control bodies should address deficiencies in pollution prevention and controls at the source by implementing more stringent control mechanisms. Furthermore, pollution from households (e.g., pharmaceutical residues, microplastics, fluoride, chlorine and bacteria etc.) are not being properly cleaned due to retired or deficient wastewater treatment plants. This untreated water causes problems with groundwater and contaminates the soil.

Recommended measures

Recommendations on eliminating environmental pollution problems based on some of mentioned weaknesses are for example:

- allocating significantly more financial and staff resources to provide systematic inspection and monitoring.
- improving legislation, e.g., a recycling fee amendment.
- strengthening the weaknesses in the judicial decision-making process by controlling the time period of the process, and ensuring more transparent communication between the courts, the state administration and the owners of land where environmental hazards threaten environmental quality.
- strengthening cooperation among the state control bodies and other state administration bodies or institutions such as the police.

- inviting the third sector and public into more frequent and more open consultations, either on the preparation of strategic or legislative documents.
- involving municipalities in revitalisations or transferring some of the tasks related to revitalisations to municipalities (currently they can only undertake monitoring and analyses of water and soil samples in order to provide more sufficient data on pollution);
- investing in maintenance, repair and investments in wastewater treatment plants also, to small municipalities to avoid pollution at the source from households;
- preparing waste prevention awareness-raising campaigns in cooperation with water management companies, municipalities and NGOs; especially on plastic waste usage or production, recycling, and implementing the zero-waste concept;
- involving municipalities in robust monitoring of pollution and polluters in their territories, and informing public and state administrations about the results of their investigations;
- creating more platforms interconnecting the state administration with the private sector and the third sector to openly and transparently discuss the above-mentioned problems and search for solutions;
- developing and supporting start-ups on eco-innovation;
- creating an environment that enables innovative solutions for nature protection; for example, digital and smart solutions, frameworks, action plans and support schemes with financial mechanisms; and
- preserving and revitalising lateral river branches, inundation areas with wetlands and related ecosystems with natural purifying ecosystem services.

Hungary

National

In Hungary, various Government actors deal with the problems of waste carried by rivers in a fragmented organisational system. However, to deal effectively with such a complex problem, it is necessary to consolidate existing powers, simplify procedural processes. The result would be a more structured and efficient, long-term planning, prevention and enforcement capability. Another priority is to address environmental problems as a whole and not to keep them separate or divide them by geographical and administrative territories. A stable system of rules and organisational procedures would ensure better permanence in the long run. Constant changes in sectoral administration, organisational and territorial divisions, or tasks and responsibilities require adaptation from the bodies and potentially jeopardise efficient operation.

The concept of Planetary Boundaries (Nature, 2009) predicts that only systemic and dynamic environmental law can compete with ecological disasters.²⁶⁸ Certain problems require cooperation by the different sectors e.g., water-, environmental-, nature-protection, water- waste- and disaster management, agricultural law, chemical safety, town planning and construction law. There is a need for a more coherent, focused, holistic, inter-sectoral approach to problem solving.

Legal disposal of construction and other hazardous waste should be facilitated with stricter penalties, simplification of evidence protocols, creation of conditions for more effective and rapid enforcement, and creating and simplifying requirements and measures for authorities. Construction and demolition waste, which constitutes the biggest amount of waste in the illegal stream, is still not regulated in Hungary. Scavenging is not controlled, and the data and the practice of waste producers is not double-checked by the responsible authorities.

International

Global conventions and transboundary cooperation are in place to protect rivers from environmental damage. Unfortunately, this kind of cooperation often exists only on paper and is not very well implemented in practice. It also does not cover shipping issues or the biodiversity of migratory fish, such as the critically

²⁶⁸ http://emla.hu/sites/default/files/EMLA%2020_kiadvany.pdf

endangered sturgeon. Some²⁶⁹ do not operate at all. Removing waste from rivers will not be effective if we do not eliminate the sources. These challenges know no boundaries. Hungary has to deal with waste from outside the EU, for example the waste floating in the Tisza in the absence of a proper waste management system in Ukraine. The necessary review of cooperation would take years, so urgently needed measures may be delayed or left to the countries directly affected by the problem, while partners are not even open to negotiation. All transboundary activities and strategic aspects could be of potential interest to the ICPDR, with relevant outcomes and activities (e.g., monitoring, pollution assessment, etc.). The assessment of plastic pollution, possible mitigation measures and policy recommendations are of utmost importance for the next Hungarian river basin management plan.

Environmental problems related to transboundary rivers, such as the Tisza, highlight the need for decision-making processes that go beyond the borders of individual nation states. In the age of digitalisation, camera surveillance systems shall be implemented and used in all cooperating countries to predict, monitor and gain time for appropriate preparation and remediation.

We cannot emphasise enough the importance of prevention. It would serve the interest of proper water management and protection if the rivers or big lakes would have joint protection and representation, as some believe that granting legal status to water bodies might help the better enforcement of environmental protection.²⁷⁰

Serbia

Problems:

- lack of coordination between the water management and environmental protection sectors;
- lack of specific strategies to improve investment in wastewater treatment facilities;
- absence of public participation in policy development;
- non-compliance of sectoral policies;
- scarcity of active protection measures;
- insufficient funds;
- inconsistent implementation of laws; and
- inadequate control and monitoring.

Proposed Measures:

- develop a plan and measures for improvement of water quality monitoring.
- create specific strategies to improve investment in wastewater treatment facilities.
- design strategies and models for knowledge transfer on wastewater treatment technologies.
- establish and consolidate public institutions' capacity, particularly at the local level.
- improve inter-sectoral cooperation between environment protection, energy, agriculture and spatial planning.
- integrate nature-based solutions in water management practices, and better consideration of ecosystem services.
- introduce adequate penalties for burning of agricultural stubble, illegal hunting of wild animals, and inappropriate use of pesticides.

²⁶⁹ i.e. Environment Protection Agreements between AT, RO, HR, UA, SK and HU

²⁷⁰ 'In 2008, Ecuador became the first country to declare 'the legal rights of nature' in its constitution. Bolivia passed a similar law in 2011. In 2017 New Zealand was first to grant legal entity and rights to one of its natural watercourses, the Whanganui River. India, a court in the state of Uttarakhand has granted legal entity to the Ganges and Yamuna rivers, as one billion Indians consider them sacred. Consequently, if someone pollutes rivers, the authorities can treat the perpetrator in the same way as if they had hurt a person'. (ZG2021) <https://www.npr.org/2019/08/03/740604142/should-rivers-have-same-legal-rights-as-humans-a-growing-number-of-voices-say-ye?t=1614951025111>; see also recent decision of the Hungarian Constitutional Court on forests (14/2020 AB-[http://public.mkab.hu/dev/dontesek.nsf/0/e7ebea823ab5fcd4c1258392005f8646/\\$FILE/14_2020%20AB%20hat%C3%A1rozat.pdf](http://public.mkab.hu/dev/dontesek.nsf/0/e7ebea823ab5fcd4c1258392005f8646/$FILE/14_2020%20AB%20hat%C3%A1rozat.pdf))

- more efficiently organise work within the Ministry, allocation of financial resources, and better planned activities.
- improve the nature conservation staff's communication skills and visitor management.
- introduce adequate penalties for waste disposal on illegal dumpsites.
- set penalties for public utility companies in case of poor waste collection performance.
- enhance inspection and capacity-building for monitoring of waste collection and treatment as well as for litter prevention; and
- elevate the targets and financial stimulation for packaging waste collection.

Romania

The current inefficiencies of the Romanian system are mostly related to legal penalties. The enforcement of statues is very weak, illegal dumping is prevalent, and the authorities have very little they can do to stop it. Since the institutions responsible for carrying out controls are heavily politicised, there are also problems on the controlling side. Every time the national government changes hands, competent people are forced out to make way for the sympathisers of the party currently in power. The National Agency of Romanian Waters and the National Forest Guard are the two most affected institutions by this high turnover rate and political appointments of unqualified people to positions responsible for flood prevention and the management of waters. New legislation should be adopted which would completely depoliticise these institutions and which would allow the formation of a corps of dedicated public servants based on competence and merit.

Nature-based solutions in the area of flood prevention should become more prevalent instead of building traditional flood prevention infrastructure. The current flood risk management plans (2016-2021) do contain several wetland restoration proposals, but the upcoming revision of these plans present an opportunity to push for the implementation of even more nature-based solutions and propose free-flowing river restoration through barrier removal. A **recent WWF report** identified 2288 barriers in Romania, out of which 727 have a high; and 978 have a good potential for removal, with a further 582 having a moderate potential.

As seen above, the report done by Act for Tomorrow has shown that micro-plastic pollution is present in all the major Romanian rivers. A broader, quantitative study should be realised in order to measure the concentration of micro-plastics in surface waters, and measures to prevent and combat this type of pollution must be urgently adopted.

The Romanian waste collection system also needs to be greatly improved, which could also help with the illegal waste import problem the country is facing. In this way, domestic recycling businesses could flourish, and the demand for legal waste imports could be reduced and lead to a more successful enforcement of the Basel Convention and EU Shipments of Waste Regulation rules.

On the international side, Romania should work with the other EU Member States to help control and prevent the flow of illegally imported waste into the country. Through cooperation, the contents of shipments could be controlled not only at the destination, but also at their origin; relieving some of the pressure the Romanian authorities currently are facing.

Instead of building traditional flood prevention infrastructure which have a negative impact on the aquatic environment, the EU should try to do more to encourage nature-based solutions to address flood prevention. For example, the EU could make more funds available for these kinds of projects so that countries would be more incentivised to adopt them. Barrier removal should also be encouraged by the EU, especially in Eastern Europe, as the above-mentioned WWF report identified 5830 barriers with removal potential in Romania, Hungary, Bulgaria and Slovakia.

Bulgaria

The following measures proposed are valid at national, regional and European level:

- Identify, sanction and prevent illegal dumpsites.
- More frequent cleaning of riverbeds and regular monitoring of litter in rivers.

- Construction of new and upgrade of the existing waste-water facilities in accordance with the current legislation.
- Improvement of national (regional, international) legislation to prohibit plastics use.
- Raising the awareness of the general public about the need to stop the production of disposable goods.
- Education, knowledge and encouragement to change behaviour / habits regarding the use of natural resources; and
- Control over plastic waste management and monitoring during disposal / recycling.

Ukraine

National and international level

Tougher environmental fines for businesses and citizens.

Adequate, dedicated funding for environmental programmes such as the "National target programme for the development of water management and environmental rehabilitation of the Dnieper river basin up to 2021"; the "National Target Programme for Drinking Water of Ukraine for 2011-2020"; the "Environmental Protection Programme for the period 2016-2020"; the "National Programme for the development of protected areas for the period up to 2020"; the "State Target Programme for Development of Land Relations of Ukraine until 2020". Relevant regional (oblast local) programs are also not adequately funded by both the state budget and local budgets. The idea of environmental funds is that polluters pay for the restoration or repair of a site that has been polluted or degraded as a result of their activities. There is worldwide evidence that dedicated revenues provide a reliable source of funding. However, in Ukraine, a paradoxical situation is emerging, polluters are paying while most environmental problems, including water, remain unresolved and the situation is worsening. Why is this so? The answer is very simple. Resolution of the Cabinet of Ministers of Ukraine²⁷¹, which stipulates that all environmental funds are to be included in the consolidated budget and that environmental measures are to be financed on a residual basis and on the basis of the principle of urgency in the event of a critical, urgent environmental situation.

Ukraine has a good practice in attracting international investment and thus technical assistance to solve problems. **The Ivano-Frankivskvodokotekhprom** utility company has been selected as one of the participants in an urban infrastructure development project financed by the International Bank for Reconstruction and Development. During the implementation of the project in 2012-2015, the company disbursed funds worth USD 10,823 million. The design and appraisal documentation for the project "Reconstruction of Wastewater Treatment Plants and Construction of Sludge Treatment Line in Ivano-Frankivsk" was developed and approved. The value of design work is 607,555 USD. A consortium of CH2MHill International Ltd. and WPK Eko-Consulting (USA-PL) carried out the project with the help of a SIDA loan and grant. The project implement has two phases - Stage I. **"Reconstruction of sewage treatment plants in Ivano-Frankivsk"** is the reconstruction of the mechanical and biological wastewater treatment unit to ensure compliance with the established standards for pollutants in the river and collection (Completed, Bystrica). Stage II. **"Construction of sludge treatment line"** the drying and fermentation of sewage sludge, resulting in biogas, which will be converted into electricity as a result of cogeneration.

In addition, restoring the powers of the State Environmental Inspectorate and extending them to the borders is an important step to ensure national and international environmental security.

Conclusions 4

From a multilateral perspective, the above-mentioned measures are a proposal by countries to be applied at national and international level. The aim is to mark and possibly eliminate ineffective regulatory practices, lack of control and sanctions for waste pollution of the environment.

²⁷¹ No. 634 of 7 May 1998 "On Approval of the Regulations on the State Environmental Fund" (in force as amended by Cabinet of Ministers Resolution No. 1065 of 4 December 2019)

Recommendations

The level of waste pollution (micro- and macro) in rivers and marine environment is greatly underestimated. As a global challenge the problem of waste pollution is the lack of land management (at the source). The current example is the situation with COVID-19, where we witnessed how the widespread use of disposable protective equipment generates a new wave of waste. Based on the results of this survey - it could contribute to a better understanding of the extent of pollution problem and possibly find the adequate solutions. Only a coordinated, unified, integrated and coherent approach alongside and up-to-date legislative framework on environmental waste could help to solve the problem.

APPENDIX 1

Country Specific Legislation

List of regulations addition to the legislation listed / detailed in in Survey

AUSTRIA

General **water quality targets** laid out in WRG, there are three regulations that define quality targets for ground and surface water (*Qualitätszielverordnungen*).

1. For groundwater, there is a regulation regarding quality targets with respect to chemical contamination.
2. For surface waters, two relevant regulations cover chemical contamination as well as ecological conditions. All three regulations provide pollution/contamination limits and/or reference values for the evaluation of water quality. The Regulation on the Monitoring of Water Bodies (*Gewässerzustandsüberwachungsverordnung, GZÜV*) establishes rules for the creation of a sampling infrastructure, sampling intervals, etc.
3. Regarding the methodological requirements of water quality sampling and (laboratory) analysis are presented in a separate regulation (*Methodenverordnung Wasser, MVW*). As of March 2021, the quality of water bodies in Austria are rated as follows:

Watercourses	high	14.2%
	good	26.2%
	moderate	30.3%
	bad	10.5%
	poor	2.5%
	maximum or good ecological potential	11.6%
	moderate ecological potential	0.4%

Lakes	high	6.5%
	good	37.1%
	moderate	12.9%
	bad	3.2%
	poor	-
	maximum or good ecological potential	40.3%
	moderate ecological potential	-

SLOVAKIA

Other important legislative environmental protection and waste management instruments are:

- Act no. 220/2004 Coll. on the Protection and Use of Agricultural Land which amends Act no. 245/2003 Coll. on Integrated Prevention and Control of Environmental Pollution;
- Act of the National Council of the Slovak Republic no. 205/2004 Coll. on the Collection, Storage and Dissemination of Environmental Information;
- Act. No. 24/2006 Coll. On Environmental Impact Assessment (EIA), and the Water Act.
- Decree no. 309/2012 Coll. on requirements for bathing water;
- Decree no. 308/2012 on water quality, water quality control, operations, operating equipment, premises, and facilities at a natural or artificial swimming pool;
- Decree no. 550/2007 Coll.; Decree no. 100/2006 regulating Act no. 538/2005 Coll. on natural healing waters, natural healing baths, spas and natural mineral waters; and Decree no. 550/2007 Coll. detailing the requirements for products intended for contact with drinking water.
- Act No. 79/2015 Coll. and its implementing Decree no. 371/2015 introduced the Polluter Pays Principle and Extended Producer Responsibility (EPR) in 2018.

- Act on Fees for Waste Disposal - Act no. 329/2018 Coll. The Act on Fees for Waste Disposal defines the fee obligation, determines the calculation of fees for the deposit of waste at a landfill and a sludge pond, and establishes the Environmental Fund as an entity to which landfill operators and sludge operators pay revenues from fees for depositing waste.
- Act no. 587/Coll Act on Environmental Fund
- Act no. 302/2019 Coll. on Disposable Beverage Packaging,
- Act no. 285/2020 amending Act no. 79/2015 Coll. on Waste.

SERBIA

Surface water conservation and nature protection related regulations:

- Law on Amendments and Modifications to the Act on Waters (Official Gazette of the Republic of Serbia, No. 101/2016);
- Strategy on Water Management in the Republic of Serbia until 2034, (Official Gazette of the Republic of Serbia, No. 3/2017);
- Act on Mining and Geological Exploration (Official Gazette of the Republic of Serbia, No. 101/2015 and 95/2018);
- Act on Communal Activities (Official Gazette of the Republic of Serbia, No. 88/2011, 104/2016 and 95/2018);
- Act on Sanitary Inspection (Official Gazette of the Republic of Serbia, No. 125/2004);
- Act on Public-Private Partnerships and Concessions (Official Gazette of the Republic of Serbia, No. 88/2011, 15/2016 and 104/2016);
- the Act on Metrological and Hydrological Activities (Official Gazette of the Republic of Serbia, No. 88/2010).
- Act on Nature Protection (Official Gazette of Republic of Serbia, no. 36/2009, 88/2010, 91/2010, 14/2016, 95/2018),
- Bylaw on Ecological Network Protection (Official Gazette of Republic of Serbia, no. 102/2010)
- Biodiversity Strategy of the Republic of Serbia 2011-2018 (Official Gazette of Republic of Serbia, no. 13/2011).

Bylaws that address certain important water sector and sanitary control issues:

- the Regulation on the Establishment of Surface and Groundwater Bodies (Official Gazette of the RS 96/2010),
- Regulation on Reference Conditions of Surface Water Types (Official Gazette of the RS 67/2011); the Regulation on the Parameters of Ecological and Chemical Status of Surface Waters and Parameters of Chemical Status and Quantitative Status of Groundwaters;
- Regulation on Emission Limit Targets for Polluting Substances in Surface and Groundwaters, including deadlines for their achievement);
- Regulation on Emission Limit Targets for Priority and Priority Hazardous Substances Which Pollute Surface Waters, including deadlines for their achievement.

BULGARIA

The European directives were transposed into Bulgarian are as follows.

- The Water Act and related ordinances introduced the requirements of Directive 2000/60/EC (WFD) establishing a framework for community action in the field of water policy, Directive 2007/60/EC (Floods Directive) regarding evaluation and flood risk management, with Art. 11 and 12 of Directive 2008/105/EC setting standards for environmental quality in the field of water policy.

- Ordinance SG №. 94 of 30 November 2010 (amended SG No. 55 of 7 July 2017) on the Protection of the Environment in Marine Waters, transposed the Marine Strategy Framework Directive 2008/56, and prepared and implemented the Marine Strategy. Decree № 273 concerns the adoption of the Ordinance on the Protection of the Environment in Marine Waters. It also established an Advisory and Coordination Council for the protection of the environment in the Black Sea and created the management tools necessary to implement the Marine Strategy and Programme of Measures.
- Ordinance on Environmental Quality Standards for Priority Substances and certain other pollutants (promulgated, SG No. 88 / 9.11.2010) transposed the Environmental Quality Standards Directive 2008/105/EC into Bulgarian legislation. Ordinance № 5 on Bathing Water Quality Management (amended, SG No. 5 of 18 January 2013) introduced the requirements of Directive 2006/7/EC of European Parliament and of the Council. Ordinance № 9 on the Quality of Water Intended for Drinking and Household Purposes (amended and supplemented, SG No. 6 of 16 January 2018) introduced the requirements of Directive 98/83/EC on the Quality of Water Intended for Human Consumption; Directive 2013/51/EURATOM laying down the requirements for protection of public health with regard to radioactive substances in water intended for human consumption; and Directive EU 2015/1787 of 6 October 2015 amending Annex II and Annex III to Directive 98/83/EC on the quality of water intended for human consumption (promulgated, OB, L 260, 7 October 2015).
- Ordinance №2 on the Protection of Waters from Pollution with Nitrates from Agricultural Sources (promulgated, SG No. 27 / 11 March 2008) introduced the requirements of Directive 91/676/EEC on the Protection of Waters against Pollution caused by Nitrates from Agricultural Sources into national law.
- Prevention and Remedying of Environmental Damage Act (ELPRED) (State Gazette 43/2008, last amended by State Gazette 96/2020). ELPRED is relevant to EU Directive 2004/35/EC on environmental liability regarding the prevention and elimination of environmental damage, and Regulation (EU) 2019/1010 on the alignment of reporting obligations under environmental legislation.
- Adopted in 1992, Council Directive 92/43/EEC of 21 May 1992 aims to conserve natural wild fauna and flora habitats and promote the maintenance of biodiversity while taking account of economic, social, cultural and regional requirements. Some 200 rare and characteristic habitat types are also targeted for conservation in their own right. Along with the Birds Directive, it forms the cornerstone of Europe's nature conservation policy and establishes the EU-wide Natura 2000 ecological network of protected areas meant to safeguard against potentially damaging developments.
- Convention on Cooperation for the Protection and Sustainable Use of the Danube (the 'Danube River Protection Convention' or DRPC) was signed on 29 June 1994 in Sofia, Bulgaria. The DRPC, which entered into force in October 1998, is the overall legal instrument for cooperation and transboundary water management in the Danube River Basin. The main objective is to ensure that surface water and groundwater within the Danube River Basin are managed and used on a sustainable and equitable basis. To accomplish these objectives, the DRPC established the International Commission for the Protection of the Danube River (ICPDR).

In accordance with the Waste Management Law (SG 53 from 13 July 2012, in force from 13 July 2012), amended, no. 66 from 26 July 2013, in force from 26.07.2013; ed. with Decision No. 11 of 10 July 2014 of the Constitutional Court of the Republic of Bulgaria - no. 61 from 25 July 2014; and EU Directive 2018/851 of 30 May 2018 amending Directive 2008/98/EC on waste:

Regulations:

- Regulation No. 6 of 27 August 2013 on the Conditions and Requirements for Building and Operation of Landfills, and other Facilities and Installations for Waste Recovery and Disposal;
- Regulation No. 8 of 24 August 2004 on the Conditions and Requirements for Building and Operation of Landfills, and other Facilities and Installations for Waste Recovery and Disposal;
- Regulation No. 2 of 23 July 2014 on the Classification of Waste;
- Regulation No. 4 of 5 April 2013 on the Conditions and Requirements for Building and Operation of Incineration Installations and Combined Combustion Plants;

- Regulation No. 1 of 09 February 2015 on the Requirements for Activities of Collecting and Treating of Medical Waste;
- Regulation No. 271 of 30 October 2012 on Packaging and Packaging Waste;
- Regulation on Waste Oils and Waste Petroleum Products. This Regulation entered into force on 8 January 2013;
- Regulation No. 1 of 4 June 2014 on the Procedure and Models for Providing Information on Waste Activities and the Procedure for Keeping Public Registers;
- Regulation No. 3 of 5 August 2014 on the Requirements for the Order and Equipment Inventory Methods for Waste Containing Polychlorinated Biphenyls. The Regulation deals with labelling and cleaning, as well as on the treatment and transportation of waste containing polychlorinated biphenyls.
- Regulation on the Procedure and Method for Calculating the Amount of the Financial Guarantee or Equivalent Insurance and for the Provision of Annual Returns for Transboundary Shipments of Waste. This Regulation entered into force on 18 July 2014;
- Regulation Determining the Order and Payment of Certain Product Taxes. This Regulation entered into force on 16 June 2016 (with the exception of article 7, par. 4 that was applicable from 1 December 2016);
- Regulation No. 7 of 19 December 2013 on the Procedure and Method for Calculating Landfill Waste Disposal Fees for (security deposits);
- Regulation No. 20 of 25 January 2017 on the adoption of the Ordinance on the Separate Collection of Organic Waste and Treatment of Biodegradable Waste; and
- Decree No. 267 of 5 December 2017 adopting the Regulation on the Management of Construction Waste, and on the Use of Recycled Building Materials.

Regulations restricting/sanctioning illegal dumping are covered by the:

- Convention for the Prevention of Pollution of the Sea by Dumping of Waste and Other Substances (1972), London Convention, as amended;
- The International Convention for the Prevention of Pollution from Ships, 1973 (MARPOL), as amended by the Protocol of 1978;
- The 1989 Convention on the Control of Transboundary Movements of Hazardous Wastes and their Storage (Basel Convention);
- 1990 International Convention on Cooperation for the Prevention and Elimination of Oil Pollution, recognising the importance of the principles adopted by the Conference on Security and Cooperation in Europe (International Convention on Oil Pollution Preparedness, Response and Co-operation OPRC, adopted 30 November 1990 and entered into force 13 May 1995); and the
- Convention for the Protection of the Black Sea against Pollution, ratified by the Bulgarian National Assembly by a law adopted on 26 November 1992 - SG, issue 99 of 1992. (in force in Bulgaria since 15 January 1994).

Ordinances concerning water:

- Ordinance №1 for Research, Use and Protection of Groundwater (amended and supplemented, SG No. 102 of 23.12.2016, effective as of 23 December 2016);
- Ordinance №1 on Water Monitoring (amended and supplemented, SG No. 20 of 15 March 2016);
- Ordinance №2 on Protection of Waters from Pollution with Nitrates from Agricultural Sources (promulgated, SG No. 27 / 11 March 2008);
- Ordinance №2 on the Issuance of Permits for the Discharge of Wastewater into Water Bodies and Determination of the Individual Emission Limits of Point Sources of Pollution (supplemented, SG No. 44 of 17 May 2013, amended, SG No. 48 of 27 June 2015);
- Ordinance №4 on the Quality of Water for Fish Farming and for Breeding of Shellfish (promulgated SG No. 88/2000);
- Ordinance № H-4 for Characterisation of Surface Waters (September 23, 2014);
- Ordinance № 5 on Bathing Water Quality Management (amended, SG No. 5 of 18 January 2013);

- Ordinance № 6 on Emission Standards for the Permissible Content of Harmful and Dangerous Substances in Wastewater Discharged into Water Bodies (promulgated, SG No. 97 / 28 November 2000);
- Ordinance № 7 on the Conditions and Procedure for Discharge of Industrial Wastewater into Residential Sewerage Systems (promulgated, SG No. 98 / 1 December 2000);
- Ordinance № 8 on the Quality of Coastal Sea Waters (promulgated, SG No. 10 / 2 February 2001);
- Ordinance № 9 on the Quality of Water Intended for Drinking and Household Purposes (amended and supplemented, SG No. 6 of 16 January 2018);
- Ordinance № 11 on the Quality of Bathing Water (promulgated, SG No. 66 / 27 July 2001);
- Ordinance on Environmental Quality Standards for Priority Substances and Certain Other Pollutants (promulgated, SG No. 88 / 9.11.2010);
- Ordinance on the Protection of the Environment in Marine Waters (Promulgated SG No. 94 of 30 November 2010, amended SG No. 55 of 7 July 2017);
- Ordinance on the Use of Surface Water (promulgated, SG No. 100 of 16 December 2016);
- Decree № 273 on the Adoption of an Ordinance on the Protection of the Environment in Marine Waters which also established the Advisory and Coordination Council for the Protection of the Environment in the Marine Waters of the Black Sea, and created the management tools necessary to implement the Marine Strategy and Programme of Measures.

UKRAINE

The list of acts regulating the maximum allowable discharges (GDS) of wastewater:

- Law of Ukraine "On Environmental Protection" of 25.06.1991, №1264-XII.
- Water Code of Ukraine dated 06.06.1995, № 213/95-VR.
- Law of Ukraine "On ensuring the sanitary and epidemiological well-being of the population" of 24.02.1994 №4004-XII.
- Resolution of the Cabinet of Ministers of Ukraine №465 of March 25, 1999 On approval of the rules for protection of surface waters from pollution by return waters.
- Resolution of the Cabinet of Ministers №1100 of 11.09.1996 on the Procedure for development and approval of standards for maximum permissible discharge of pollutants and the list of pollutants whose discharge is regulated.
- SNiP 2.01-14-83 "Determination of calculated hydrological characteristics" - Moscow, 1985.
- On approval of the Standards of ecological safety of water bodies used for the needs of fisheries on the maximum permissible concentrations of organic and mineral substances in marine and fresh waters (biochemical oxygen demand (BSC5), chemical oxygen demand (HSC), suspended solids and ammonium nitrogen). Order of the Ministry of Agrarian Policy №471 dated 30.07.2012
- The generalized list of maximum admissible concentrations (MPC) and approximately safe levels of influence (OBRV) of harmful substances for water of fishery reservoirs./Minrybgosp of the USSR. - M., 1990. - 44 p.
- Instruction on the procedure for development and approval of maximum permissible discharges (MRLs) of substances into water bodies with return waters/ Minprirody of Ukraine-Kyiv, 1994. - 89 p.

Other important regulation reducing anthropogenic pressure on the environment and achieving a level of environmental safety that would meet EU standards

- Resolution of the Cabinet of Ministers of May 18, 2017 № 336 "On approval of the Procedure for developing a river basin management plan".
- Order of the Ministry of Ecology and Natural Resources of Ukraine January 14, 2019 N4 "Methods for determining the massifs of surface and groundwater."
- Law of Ukraine of 04.10.2016 № 1641-VIII "On Amendments to Certain Legislative Acts of Ukraine on the Implementation of Integrated Approaches in Water Resources Management on the Basin Principle"

- Order of the Ministry of Ecology and Natural Resources of Ukraine dated 26.01.2017 № 23 “On approval of the Standard Regulations on Basin Councils” (registered with the Ministry of Justice on February 17, 2017 at № 231/30099)
- Order of the State Water Agency of Ukraine dated 31.07.2018 №565 “On the formation of basin councils”.

Water protection related rules:

- Harmful effects of water until 2010 and the forecast until 2020" (approved by the Cabinet of Ministers Of Ukraine dated 03.07.2006 № 901); -
- "Program of integrated flood protection in the Tisza River basin in the Zakarpattia region for 2002-2006 and the forecast until 2015" (approved by the resolution of the Cabinet of Ministers of Ukraine dated 24.10.2001 № 1388); -
- "State target program of integrated flood protection in the basins of the Dniester, Prut and Siret rivers" (approved by the resolution of the Cabinet of Ministers of Ukraine dated 27.12.2008 № 1151).

Rules on protection, treatment and management of special protection zones regulated by the following Acts.:

- "On the ecological network of Ukraine";
- "National program for the formation of the national ecological network of Ukraine for 2000-2015";
- "On environmental protection";
- "On environmental impact assessment";
- "On the nature reserve fund of Ukraine";
- "On fisheries, industrial fishing and protection of aquatic bioresources";
- "On the plant world";
- "On the animal world";
- "On Strategic Environmental Assessment";
- "On the Red Book of Ukraine" and others;
- "Regulations on the Green Book of Ukraine";
- "Concepts of the National Biodiversity Conservation Program for 2005-2025", etc.

APPENDIX 2

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3. *National Report on the State and Protection of the Environment in the Republic of Bulgaria, Executive Environment Agency (ExEA):* <http://eea.government.bg/bg/soer/2019>
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9. *National Waste Information System.* <https://nwms.eea.government.bg/app/base/home>
10. *Official site of the National Assembly of the Republic of Bulgaria. Bill Amending the law on Maritime Areas, Inland waters and Ports of the Republic of Bulgaria.* <https://parliament.bg/bg/bills/ID/163641>
11. *National Plan for Protection of the Most Significant Wetlands in Bulgaria, 2013 – 2022.* <http://forthenature.org/upload/documents/2013/02/Wetlands-plan-final.pdf>
12. *Flood Risk Management Plans. Criteria and method for Determination and Classification of Areas with Potential Significant Flood Risk (APSFs):* <https://www.moew.government.bg/bg/vodi/planove-za-upravlenie/planove-za-upravlenie-na-riska-ot-navodneniya-purn/>
13. *Official site of Green Balkans Organisation:* <https://greenbalkans.org/en/>
14. *Official site of the Bulgarian Society for the Protection of Birds:* <https://bspb.org/>
15. *Official site of the Black Sea NGO Network:* <https://www.bsnn.org/about.html>
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