

**D 5.3.1 Report on analyzing legislative framework of WWT processes in both countries with proposing legal issues to improve local water quality objectives
(combined D 5.3.1 & D 5.3.2 from AF)**

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PART 1: CROATIAN LEGAL FRAMEWORK

Division of competences between State and local and regional self-government units

1. Introduction

The main objective of this section is to show how the competence of state bodies and local and regional self-government bodies in relation to environmental protection in general, and water protection against pollution in particular, is regulated in the Croatian legal system. In doing so, due attention is paid to both the legislative and implementing competences of these bodies.

2. Constitutional division of competences between State and local and regional self-government units

The Constitution of the Republic of Croatia stipulates that in the Republic of Croatia state power is organized on the principle of division of power into legislative, executive and judicial, and is limited by the constitutionally guaranteed right of citizens to local and regional self-government.¹ In 2001, the current Law on Local and Regional Self-Government (LLRS)² was passed, after major changes in the constitutional regulation of local and regional self-government.³ The most important change is the inclusion of citizens' rights to local and regional self-government in Article 4 of the Constitution which reformulates the principle of separation of powers. By this change the local and regional self-government were assigned the role of fourth authority in the division of powers in Republic of Croatia. Thus, the state government on the one hand and the local government on the other are constitutionally placed in a relationship of equality. This fact should have far-reaching repercussions on legal regulation, as well on the actual position of local and regional self-government in everyday functioning.

¹ The Constitution of the Republic of Croatia, consolidated text, Official Gazette, Nos. 56/90, 135/97, 08/98, 113/00, 124/00, 28/01, 41/01, 55/01, 76/10, 85/10, 05/14, Art. 4 (1).

² Law on Local and Regional Self-government, Official Gazette, Nos. 33/01, 60/01, 129/05, 109/07, 125/08, 36/09, 150/11, 144/12, 19/13, 137/15, 123/17, 98/19, 144/20.

³ Amendments to the Constitution from November 2000 (Official Gazette, No. 113/00).

The Constitution (Art. 129) defines two levels of territorial self-government, local and regional.⁴ Local self-government units are municipalities and cities, and regional self-government units are counties. Their territory is determined in the manner prescribed by special law.

In determining the competencies of local and regional self-government units, the Constitution (Art. 129a, paragraphs 1 and 2) attends to the so-called constitutional guarantee of citizens' rights to local and regional self-government. Their competencies are determined by a combination of a general clause and an open list of individual competencies which are defined very broadly.⁵ General clause for local self-government units formulated is so that they *“perform tasks from the local scope which directly meet the needs of citizens”*, and for regional units it is formulated so that they *“perform tasks of the regional significance”*. Competencies explicitly listed in the open lists of competencies are the so-called constitutionally guaranteed competencies of both levels of self-government. But, the existence of a general clause means that self-governing units can themselves expand their scope beyond the guaranteed competencies, of course within the limits determined by the general clause.

The Constitution prescribes that groups of guaranteed competencies are to be regulated in more detail by the specific law regulating each corresponding field. In the allocation of specific competencies by the law the principle of subsidiarity should apply, as the Constitution prescribes: *“In the allocation of competencies those bodies that are closest to the citizens will take precedence.”* (Art 129a, paragraph 3)

The principles of efficiency and economy are also stipulated by the Constitution: *“When determining the competencies of local and regional self-governments units the breadth and nature of the assigned matter and the requirements of efficiency and economy must be taken into account.”* (Art 129a, paragraph 4).

Determining the relationship between the state government and local and regional units, Constitution in several provisions especially emphasizes the principle of independence and autonomy of local and regional self-government units. So Art. 130 of The Constitution prescribes: *»In performing tasks within the scope of the unit bodies of the local and regional self-governments are independent and are subject*

⁴ The third form of self-government, namely sub-local self-government is also recognized by Constitution. It is given the role of the optional form of organizing citizens in the settlement or part of the settlement, and it is left to further regulation by the law.

⁵ For example, “communal activities, social activities, protection and improvement of the natural environment” etc.

only to the review of the constitutionality and legality of the authorized state bodies.” This principle of legality in supervision serves to protect generally weaker bodies of local and regional self-government from unauthorized and overemphasized supervision or even from possible abuses of supervisory powers belonging to the in fact stronger bodies of central government.⁶

The Constitution also guarantees financial independence to the local and regional self-government units. In order to be able to carry out their tasks it is necessary that they have adequate resources. So Art 131, paras. 1 and 2 of The Constitution guarantees them the right “... *to their own income which they freely dispose of in the performance of their competences*”, and prescribe that their income “... *must be proportionate to their powers defined by the Constitution and the law.*”

For the implementation of this modern concept of local and regional self – government⁷ the adoption of Law on Local and Regional Self – Government (LLRS) in 2001 was crucial. As prescribed by general constitutional norms, the LLRS regulates in more detail local and regional self-government units, their competencies and organizational structure, the manner of work of their bodies, supervision over their acts and work and other issues relevant to their work. But, at the same time many particular elements of the system of local self-government are regulated by several other laws. So, although Croatia have a basic law on the self-government (LLRS), the overall legal regulation of the system is exceptionally fragmented. Because of that, in addition to this basic law, for a complete and fully grounded assessment of the various elements and institutes of the local self-government system it is necessary to consider a multitude of other laws and regulations.⁸

3. The local and the regional level of the self-government

The **local level** is the basic level of self-government and the most important purposes for which territorial self-government exists are realized on that level. Organization of local self-government in Croatia is conceived as multi-type organization, that is, in such an organization the types of local units

⁶ Also in the terms of independence Art. 129b of The Constitution guarantees organizational autonomy to the local and regional self-government units: “*Local and regional self-government units have the right within the law, to regulate independently by its statutes internal structure and scope of their bodies and adapt them local needs and opportunities.*”

⁷ The concept of local and regional self - government defined by the Constitution is based on The European Charter of Local Self-Government, international law treaty which was adopted in 1985 by the Council of Europe.

⁸ For example, The Law on the Area of Counties, Cities and Municipalities in the Republic of Croatia, Official Gazette, Nos. 86/06, 125/06, 16/07, 95/08, 46/10, 145/10, 37/13, 44/13, 45/13 and **110/15**; The Law on Financing Local and Regional Self-government units, Official Gazette, No. 127/17; The Law on Local elections (, Official Gazette, Nos. 144/12, 121/16), The Law on Referendum and Other Forms of Personal Participation in the Exercise of State Power and Local and Regional Self-government, Official Gazette, Nos. 33/96, 92/01, 44/06, 58/06, 69/07, 38/09, 100/16, 73/17, and many other laws.

differ in the degree of urbanization, and possibly in others criteria (e.g. size measured by population, etc.). Since 1993, at the level of local self-government, there are **cities** (urban-type settlements with over 10,000 inhabitants) and **municipalities** (local units of a predominantly rural character).⁹

By Amendment to the LLRS from 2005 a special category of **large cities** was established, namely those with over 35,000 inhabitants. There are 16 of them, without Zagreb.¹⁰ Of the coastal cities (as relevant for this report), Split, Rijeka, Zadar, Pula, Šibenik, Dubrovnik and Kaštela belong to this special category. Their self-governing scope has been expanded with two additional competences, namely maintenance of public roads and the issuance of construction and location permits, issuing other acts related to construction and implementation of spatial planning documents. In the legal literature it is often stressed that the most important characteristics of local self-government in Croatia are: too complex territorial structure, insufficient stability of territorial structure, unbalanced structure of local units, insufficient efficiency of local self-government, weak development potential and structure ensuring a centralist way of governing the country.¹¹

A **county** is a unit of **regional self-government** whose area represents a natural, historical, traffic, economic, social and self-governing whole, and is organized for the purpose of performing activities of regional interest (Art. 6 LLRS). The county includes several spatially connected municipalities and cities in its area. There are twenty counties in Croatia. Unfortunately, all the above-mentioned criticisms directed at the system of local self-government in Croatia can also be directed at the system of regional self-government.

Cities, municipalities and counties have legal personhood and are legally represented by the mayor (cities and municipalities) or by the prefect (counties).

Municipal council, city council and county assembly are representative bodies of citizens in local and regional self-government units. This bodies adopt decisions and other general acts within the competence of the unit of local or regional self-government and perform other tasks in accordance with the law and the statute of the unit (Art. 27 and Art. 35 LLRS).

⁹ Today in Croatia there are 128 cities with an average of 18,328 inhabitants, 428 municipalities and 6755 settlements.

¹⁰ The City of Zagreb, as the capital of the Republic of Croatia, is a special and unique territorial and administrative unit whose structure is regulated by the Law on the City of Zagreb.

¹¹ See: Ivan Koprić: Karakteristike sustava lokalne samouprave u Hrvatskoj, HRVATSKA JAVNA UPRAVA, Year 10. (2010.), No. 2, pp. 371–386.

The executive body of the cities and municipalities is the mayor and of the counties is the prefect (Art. 39 and Art. 44 LLRS). The mayor or prefect, in performing activities within the self-governing scope of the municipality, city or county, has the right to suspend the application of the general act of the representative body if it assesses that this act violates a law or other regulation (Art. 42, paragraph 4 LLRS).

Administrative departments and services (administrative bodies) are established for the performance of tasks within the self-governing scope of local and regional self-government units as well as for the performance of state administration tasks transferred to these units. Administrative bodies of local self-government units and regional self-government units in the execution of general acts of the representative body adopt individual acts by which they decide on the rights, obligations and legal interests of natural and legal persons (administrative matters). An appeal may be lodged with the competent administrative body of the county against individual acts issued by municipal and city administrative bodies, and an appeal may be lodged with the competent ministry against individual acts issued by the administrative bodies of the county and large cities in the first instance, if it is not otherwise prescribed by a special law.

4. Generally on the competences of the local and regional self-government units

Although local and regional self-government is the "fourth" authority in the division of powers according to the Constitution of the Republic of Croatia, the manner in which the division of competencies between state and self-government bodies is regulated indicates a *de facto* significant degree of centralization of powers, especially in some sectors. As will be explained below, this also applies to the field of environmental protection.

LLRS as a basic law governing local and regional self-government determines the competence of these units in a very general way. Thus, according to the Art. 19 and 19a of the LLRS cities and municipalities *"...perform tasks of local importance that directly meet the needs of citizens, and which are not assigned to state bodies by the Constitution or the law."* In addition to this general provision, Art. 19 and 19a also contain an open list of tasks that especially fall within the competence of cities and municipalities,¹² and among them are tasks of *"protection and improvement of the natural*

¹² For municipalities and the cities enlisted competences are: - settlement arrangement and housing; - spatial and urban planning, - communal economy, - child care, - social welfare, - primary health care, - upbringing and primary education, - culture, physical culture and sports, - consumer protection, - protection and improvement of the natural environment, - fire and civil protection, - traffic in its area.

Large cities have two additional competencies: - maintenance of public roads, - issuance of construction and location permits and other acts related to construction, and implementation of spatial planning documents.

environment". The list of competences is open because it is explicitly stated that the competence of municipalities and cities includes also "other jobs in accordance with special laws."

The same approach is adopted by LLRS when determining the jurisdiction of the county. Thus Art. 20 contains a general provision according to which the County in its self-governing scope performs activities of regional significance, and in addition contains the open list of especially assigned competences.¹³ As for municipalities and cities, the jurisdiction here also includes "other tasks in accordance with special laws."

Due to this approach of the legislator to the regulation of the competencies of local and regional self-government units, in order to determine the scope of competences of these units it is necessary to examine special state regulations governing certain areas. In other words, although the LLRS very broadly determines the competence of local and regional self-government units in accordance with the principle of subsidiarity, special state regulations (mostly laws) ultimately determine the exact scope of this competences for each individual area.

With regard to the subject matter of this report, this means that a number of state laws and regulations in the field of environmental protection, and in particular the protection of the sea, should be examined. The legal regulation of jurisdiction in this area is extremely fragmented as there is a large number of state laws and other state normative acts that define it. I mention here only some of the most important laws whose provisions will be analyzed later in the report. Among the framework laws should be mentioned the Environmental Protection Act,¹⁴ the Nature Protection Act,¹⁵ the Waters Act,¹⁶ the Water Services Act,¹⁷ etc.

However, before embarking on the analysis of this legal regulation, it is necessary to point out some more peculiarities in determining the competencies of local and regional units. Thus, according to the provisions of many of special laws, certain public services are often entrusted (instead to the administrative departments and services of the local and regional units) to different legal forms, from

¹³ Enlisted competences are - education, - health, - spatial and urban planning, - economic development, - traffic and traffic infrastructure, - maintenance of public roads, - planning and development of the network of educational, health, social and cultural institutions, - issuance of construction and location permits, other acts related to construction and implementation of spatial planning documents for the area of the county outside the area of the big city.

¹⁴ Official Gazette, Nos. 80/13, 153/13, 78/15, 12/18, 118/18.

¹⁵ Official Gazette, Nos. 80/13, 15/18, 14/19, 127/19.

¹⁶ Official Gazette, Nos. 66/19, 84/21.

¹⁷ Official Gazette, No. 66/19.

various state-established public institutions and companies onwards. For example, the Law on Waters entrusts a very significant range of competencies related to the protection of water from pollution to the state-established public institution Hrvatske vode.

Another specificity in defining the delimitation of the competencies of the central state and local and regional self-government units arises from the acceptance of the **system of decentralized state administration**. The new Law on the State Administration System¹⁸ enacted in 2019 provides for a significant deviation from the previous legal regulation of performing state administration tasks which was based on the model of deconcentrated state administration. Throughout the period from 1993 to 2019 the laws governing the system of state administrations provided for the possibility that central state administration bodies for performing part of the tasks within its scope on the territory organize their regional offices. In that period the main bearers of state activities in the territory were county offices, that is, state administration offices in counties.¹⁹

The new Law on the State Administration System provides abolition of state administration offices with entrusting their affairs to the counties.²⁰ Which tasks the state administration will entrust to the counties is determined by the Art. 34 paragraph 1 of the Law on the State Administration System in very general terms: *“The affairs of the state administration are entrusted to the units of local and regional self-government if this is justified given the nature of the affairs and it is in the special interest of the citizens.”* The Law also stipulates that units of local and regional self-government and legal persons with public authority may be entrusted by a special law with *“...tasks of direct implementation of the law in the first instance and other administrative and professional tasks.”* (Art. 33 paragraph 1).

By the amendments from 2019, the LLRS is harmonized with the new system of entrusted powers adopted by the Law on the State Administration System. So it is prescribed that administrative bodies of local and regional self-government units shall decide on administrative matters in the first instance in the performance of entrusted tasks of state administration. An appeal may be lodged with the competent state administration body against individual acts issued by administrative bodies of local and regional self-government units in the performance of entrusted state administration tasks in

¹⁸ Official Gazette, No. 66/19.

¹⁹ Until 2001 the work of this offices was coordinated by prefect as a representative of the state authority in the territory and holder of executive power in counties as units of local self-government and administration.

²⁰ The Law on the State Administration System stipulates that affairs can be entrusted also to the cities and municipalities or to the legal persons with public authority. However, in the transitional and final provisions (Art 67, paragraph 1), the Law envisages that the affairs of the previous state administrative offices will be taken over by the counties.

accordance with a special law governing individual administrative areas (Art. 76 paragraphs 2 and 4. of the LLRS). In performing the entrusted tasks of the state administration, the administrative bodies of the local and regional units have the powers and obligations of the state administration bodies in accordance with the law governing the state administration system (Art 53 paragraph 3 of the LLRS).

It is also prescribed that the mayor or county prefect is responsible for the lawful and proper performance of the entrusted tasks of the state administration to the state administration body responsible for administrative supervision in the appropriate administrative area (Art. 42 paragraph 2 of the LLRS).

From the above analysis it follows that these changes in the regulatory framework have not led to full and proper decentralization of administrative activities. Namely, by this changes the state administration office affairs are placed only in the *delegated competence* of the county, meaning that counties do not have any regulatory authority in relation to the transferred tasks, but act only as extended hand of state power by applying centrally defined regulations in individual administrative matters and their decisions are subject to control by competent state administrative bodies.

The limited scope of this reform is evidenced also by the fact that the entrustment of competencies does not include affairs of administrative supervision, inspection and supervision over the legality of general acts (although they were previously performed by state administration offices on the local level), which were now transmitted to the central bodies of the state administration.

Finally, it is necessary to draw attention to the very broad **supervisory powers** of state administrative bodies over the legality of work and legality of acts of local and regional self-government. Art. 78a of the LLRS prescribes that the supervision of the legality of the work of the representative body of local and regional self-government is performed by the central state administration body responsible for local and regional self-government. When it finds irregularities in the work of the representative body, the central state administration body responsible for local and regional self-government shall issue a decision declaring the session of the representative body or its part illegal and declaring the acts adopted at the session null and void. No appeal is allowed against this decision, but an administrative dispute may be initiated before the High Administrative Court of the Republic of Croatia.

Supervision of the legality of general acts adopted in the self-governing scope by representative bodies of municipalities, cities and counties is performed by state administration bodies, each within its scope, in accordance with a special law. When the competent state body assesses that the general act is in

conflict with the Constitution and the law or that irregularities have been committed in the process of adopting the general act, it shall instruct the representative body to rectify the observed deficiencies within 15 days of receipt of the instruction. If the representative body does not act on the instructions of the competent state administration body and does not eliminate the deficiencies within the legal deadline, the competent state administration body shall make a decision to suspend the application of the general act or the individual provisions of the general act (Arts. 79 and 80 of the LLRS).

Moreover, Art. 80b of the LLRS additionally stipulates that except in the above cases of supervision of the legality of general acts, all state administration bodies within their scope determined by a special law may directly monitor the legality of general acts issued by the representative bodies of municipalities, cities and counties and make a decision to suspend them. The procedure for monitoring the legality of a general act may be carried out by the competent state administration body at any time after learning that the general act or individual provisions of the general act are not in accordance with the Constitution or law.

Overview of the Croatian legislation

1. General remarks

The analysis of the legal regulation of the protection of the marine environment in the Croatian legal system shows a very complex and unfortunately fragmented approach of the legislator to this problem. Relevant legal sources that regulate this matter can be found in a number of laws and bylaws, with the proviso that it is mainly state regulations.

At the general level, the basic EU regulations governing the protection of the environment from municipal wastewater were transposed into Croatian law by the adoption and subsequent amendments to the 2019 Waters Act.²¹ Thus, this law is the basic regulation by which is in the legal order of the Republic of Croatia implemented the EU Water Framework Directive,²² with all its

²¹ Official Gazette, Nos. 66/19 and 84/21. However, it should be noted that the earlier Water Act from 2011 (Official Gazette, Nos. 153/09, 63/11, 130/11, 56/13, 14/14 and 46/18) already transposed the rules of the EU Water Framework Directive into Croatian law. This law was repealed by the enactment of the current 2019 Law on Waters.

²² Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (EU Water Framework Directive), Official Journal L 327, 22/12/2000 P. 0001 – 0073.

amendments, including the Directive 2014/101/EU of 30 October 2014²³ and Directive 2008/105/EC.²⁴ Also, the EU Directive on urban wastewater treatment was transposed,²⁵ as well as its amendments.²⁶ The EU Directive on bathing water quality has also been transposed,²⁷ as well as EU Directive on technical specifications for chemical analysis and monitoring of water status.²⁸

However, this Act cannot be considered an integral source of law for the said matter for two main reasons. On the one hand, many issues related to environmental protection from pollution (including the pollution by the discharge of municipal wastewater) are regulated by other general regulations such as the Environmental Protection Act²⁹ and the Nature Protection Act.³⁰ On the other hand, a number of issues relevant to the determination of the existence of the said pollution, its prevention, control and sanctioning are regulated by special laws and bylaws, such as, for example, the Water Services Act,³¹ the Financing Water Management Act,³² the Regulation on the Standard of the Water Quality,³³ Ordinance on the Waste Water Emission Limit Values,³⁴ etc.

Regarding the protection of waters from pollution the relationship between the Waters Act on the one hand and the Environmental Protection Act as well as the Nature Protection Act on the other hand can be defined as the relationship between *lex specialis* and *legi generali*. This is especially pronounced if the relationship between the Waters Act and the Environmental Protection Act is examined.

²³ Commission Directive 2014/101/EU of 30 October 2014 amending Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for Community action in the field of water policy Text with EEA relevance, Official Journal, L 311/32.

²⁴ Directive 2008/105/EC of the European Parliament and of the Council of 16 December 2008 on environmental quality standards in the field of water policy, amending and subsequently repealing Council Directives 82/176/EEC, 83/513/EEC, 84/156/EEC, 84/491/EEC, 86/280/EEC and amending Directive 2000/60/EC of the European Parliament and of the Council, *OJ L 348, 24.12.2008, p. 84–97*.

²⁵ Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment, Official Journal L 135, 30/05/1991.

²⁶ Commission Directive 98/15/EC of 27 February 1998 amending Council Directive 91/271/EEC with respect to certain requirements established in Annex I thereof (Text with EEA relevance), Official Journal L 067, 07/03/1998 P. 0029 - 0030

²⁷ Directive 2006/7/EC of the European Parliament and of the Council of 15 February 2006 concerning the management of bathing water quality and repealing Directive 76/160/EEC, *OJ L 64, 4.3.2006, p. 37–51*.

²⁸ Commission Directive 2009/90/EC of 31 July 2009 laying down, pursuant to Directive 2000/60/EC of the European Parliament and of the Council, technical specifications for chemical analysis and monitoring of water status (Text with EEA relevance), *OJ L 201, 1.8.2009, p. 36–38*.

²⁹ Official Gazette, Nos. 80/13, 153/13, 78/15, 12/18, 118/18.

³⁰ Official Gazette, Nos. 80/13, 15/18, 14/19, 127/19.

³¹ Official Gazette, No. 66/19.

³² Official Gazette, Nos. 153/09, 90/11, 56/13, 154/14, 119/15, 120/16, 127/17, 66/19.

³³ Official Gazette, No. 96/19.

³⁴ Official Gazette, No. 26/20.

Namely, although the Waters Act, as a special regulation, regulates *saedes materiae* with regard to the protection of waters from pollution (Chapter V, Articles 46-85 of the Waters Act), the provisions of the Environmental Protection Act apply to those issues that are not specifically regulated by Waters Act. Moreover, the provisions of the Environmental Protection Act may take precedence in application if the provisions of the Waters Act regulate certain elements of water protection against pollution in conflict with the provisions of the Environmental Protection Act.

Such a relationship is explicitly defined in Art. 5. of the Environmental Protection Act. Thus, Art. 5 paragraph 6 determines that special regulations governing the protection of individual components of the environment, or regulating the protection of the environment from individual loads, shall apply to issues of environmental protection that are not regulated by this Act and relate to individual components of the environment or individual loads.

At the same time, Art. 5 paragraph 7 of the Environmental Protection Act determines that in the event that a special regulation referred to in paragraph 6 does not regulate the protection of an individual component of the environment or environmental protection from individual loads in accordance with this Act, this Act shall apply accordingly to that component or load. This provision of the Environmental Protection Act should be interpreted in a way that implicitly includes the rule that the provisions of the Act should be applied to all those aspects of the protection of individual components of the environment that are not explicitly regulated by a special regulation. Thus, for example, in the case of pollution caused by municipal wastewater, the rules of the Chapter X (Articles 173-208) of the Environmental Protection Act will apply to liability for pollution damage, since the Waters Act does not specifically regulate this liability.

In addition, the provisions of the Waters Act governing the protection of waters against pollution often directly refer to the application of environmental protection regulations, which in most cases means the application of the Environmental Protection Act. For example, the duty to regularly sample and test the composition of waste water is imposed by the Article 75 paragraph 1 of the Waters Act not only on persons who are required to have a water legal permit to perform their activity, but also on those who, according to environmental regulations, must have an environmental permit.

Or, according with the provisions of Art. 63 paragraph 1 of the Waters Act, when, in accordance with the regulations on environmental protection, an assessment procedure is carried out on the need to assess the impact of the interventions in space on the environment, the impact of the interventions in space on water from the point of view of water protection objectives is also assessed in that procedure.

For the subject matter of this report, it is important to emphasize that the Environmental Protection Act introduced the Framework Directive on Marine Strategy³⁵ into the Croatian legal order (Article 2 paragraph 1, point 8 of the Environmental Protection Act). Therefore, Environmental Protection Act contains general provisions on the protection of the sea and the coastal area from pollution (Article 25), rules on the content, objectives and manner of adoption of the Strategy for the Management of the Marine Environment and the Coastal Area and the Contingency Plan for Sudden Marine Pollution (Articles 55-57). In this context, the definition of the concept of marine pollution contained in Article 4 paragraph 1, point 36 of the Environmental Protection Act is also relevant: *“Pollution of the marine environment means the direct or indirect introduction of matter or energy into the marine environment, which causes or may cause devastating effects on the living conditions of flora and fauna in the sea and the marine subsoil, or endanger living conditions in general and endanger human health. interfere with maritime activities, including fishing and other lawful uses of the sea and submarine, cause deterioration in the usable quality of seawater and reduce the attractiveness of the marine environment,”*.

The Nature Protection Act can also be considered an act that is a *lex generalis* in relation to the Waters Act in the part in which it regulates ecologically protected areas in the Republic of Croatia within the ecological network Natura 2000. According to the Article 9 paragraph 1, point 7, the Natura 2000 ecological network is a coherent European ecological network composed of areas with natural habitat types and habitats of wild species of interest to the European Union, and enables the conservation or, where necessary, return to a favorable conservation status of certain natural habitat types and habitats of species in their natural range.

The ecological network of the Republic of Croatia, promulgated by the Regulation on the ecological network³⁶ represents the areas of the ecological network of the European Union Natura 2000. The ecological network of the Republic of Croatia covers 36.67% of the land territory and 16.26% of the coastal sea, and consists of 745 areas of conservation of significant species and habitat types and 38 areas of conservation of birds. Pursuant to the Nature Protection Act public institutions for the management of a national park or nature park and public institutions for the management of other

³⁵ Directive 2008/56/ec of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive), Official Journal L 164/19.

³⁶ Official Gazette, Nos. 124/13 and 105/15,

protected areas and / or other protected parts of nature are responsible for the management of ecological network areas.

2. Law on Waters

As already emphasized, the Waters Act is a basic act in the Croatian legal system that regulates the issue of protection of waters from pollution.³⁷ This Act regulates, *inter alia*, the legal status of waters, water resources and water structures, water quality and quantity management, protection against harmful effects of water, special activities for water management purposes, as well as the institutional structure of performing these activities.

2.1. Field of application of the Waters Act *ratione materiae*

The scope of application of the Waters Act *ratione materiae* is determined by the term "water" to which the provisions of the Act refer. Thus, according to the provisions of Art. 3 paragraph 1 of the Waters Act, the term "water", in addition to surface and underground waters, includes also coastal waters. Coastal waters are defined in the Waters Act as surface waters within a line one nautical mile from the baseline from which the width of the waters of the territorial sea in the direction of the open sea is measured, and in the direction of the mainland they extend to the outer boundary of the transitional waters.³⁸ Transitional waters are surface waters near the mouth (firth) of the river into the sea, which are partly saline due to the proximity of coastal waters, but are significantly affected by freshwater flows.³⁹

It is important to note that in terms of the Waters Act, the term "surface water" generally includes coastal waters. In other words, when a provision of the Act applies to "surface waters" it means that it also applies to coastal waters. However, that only on the condition that the provision of this or any other law does not preclude the application to coastal waters because this issue for coastal waters is regulated differently.

The term "water" to which the provisions of the Act refer also includes the waters of the territorial sea, but only in terms of their chemical status.

Therefore, the provisions of the Waters Act on the protection of surface waters from pollution (Chapter V, Articles 46-85) also apply to coastal waters. But it is important to emphasize that protection of

³⁷ Only radiological water pollution, regulated by a special regulation, is exempted.

³⁸ Art. 4 paragraph 1, point 68.

³⁹ Art. 4 paragraph 1, point 69.

coastal waters⁴⁰ against pollution from marine structures, from immersion, from air, caused by activities on the seabed and in the seabed, including pollution from artificial islands, devices and pipelines laid on the seabed, is carried out according to special regulations governing environmental protection and a special law governing safety of navigation in inland waters and territorial sea and protection and preservation of natural marine resources and environment, as well as the appropriate application of prescribed water protection objectives set by the Regulation on the Standard of the Water Quality,⁴¹ and according to the Water Districts Management Plan.⁴²

2.2. Water management and legal persons competent for water management

Water management consists of all activities, measures and actions undertaken by the competent entities on the basis of the Waters Act, and the Financing Water Management Act.⁴³ It is important to emphasize that water management activities do not include water services, that is, public water supply and public drainage services. They are generally regulated by the Water Services Act.⁴⁴

One of the goals of water management is to achieve and preserve good water status in order to protect human life and health, protect their property, protect aquatic and water-dependent ecosystems.⁴⁵

The entities competent for water management are the Republic of Croatia, legal person “Hrvatske vode” (Croatian Waters) and local and regional self-government units.

Hrvatske vode is a legal entity for water management, established on the basis of the Waters Act, and the founder is the Republic of Croatia.⁴⁶ The activities of Hrvatske vode are financed from water fees, which are regulated by the Financing Water Management Act. The Republic of Croatia is jointly and severally liable for the obligations of Hrvatske vode. The governing body of Hrvatske vode is the Management Board, which consists of seven members and six of them are appointed and dismissed by the Government of the Republic of Croatia, at the proposal of the Minister.

⁴⁰ Also protection of transitional waters and territorial sea waters.

⁴¹ Official Gazette, No. 96/19.

⁴² Art. 3 paragraph 3.

⁴³ Official Gazette, Nos. 153/09, 90/11, 56/13, 154/14, 119/15, 120/16, 127/17, 66/19.

⁴⁴ Official Gazette, No. 66/19.

⁴⁵ Art. 5, paragraph 2, point 4 of the Waters Act.

⁴⁶ Unless otherwise prescribed by the Waters Act, the regulations applicable to institutions shall apply to Hrvatske vode.

The Waters Act entrusts a very wide competence in water management to Hrvatske vode. In the protection of waters from pollution, the Water Act entrusts Croatian Waters with the following competencies:

- water quality management,
- application of measures from the National Plan of Measures in case of extraordinary and sudden water pollution,
- supervision of other taxpayers in application of measures from the National Plan of Measures in case of extraordinary and sudden water pollution,
- giving opinions, and exceptionally consent, to general acts adopted by local self-government units or units of regional self-government on the basis of the Waters Act,
- co-financing the construction of buildings for public wastewater drainage and supervision over the intended use of funds under construction.⁴⁷

In addition, for the subject matter of this report relevant are also the following competences of Hrvatske vode: - the calculation and collection of water fees in accordance with the Financing Water Management Act; - professional supervision over meeting the conditions for issuing water legal acts (so called “water supervision”); - keeping water documentation and a cumulative water information system and issuing water legal acts in accordance with the Waters Act.⁴⁸

In addition to the bodies responsible for water management, the Water Act also provides for the possibility of entrusting certain tasks necessary for water management to other legal entities. These are the so-called special activities required for water management. These activities include, *inter alia*: - the prevention of the spread and elimination of the consequences of extraordinary and sudden pollution of water and water resources; - sampling and testing of water, except water for human consumption according to special regulations; - testing of watertightness of buildings for drainage and wastewater treatment.⁴⁹

In order to perform special activities required for water management, the Waters Act provides for the establishment of the Water Institute (Institut za vode) with the legal status of a public institution. The purpose of this Institute is to provide scientific and professional support to water management in

⁴⁷ Art. 199, paragraph 2, point 6 of the Waters Act.

⁴⁸ Art. 199, paragraph 2, points 9, 11 and 13 of the Waters Act.

⁴⁹ Art. 209 of the Waters Act.

accordance with the water management strategy, the provisions of the Waters Act and the law governing the financing of water management.⁵⁰

In the light of the subject of this report, the most important work to be entrusted to the Water Institute is the surveillance of the condition of surface waters, including coastal waters, and is to be carried out by systematic monitoring of the state of waters. The Institute is also entrusted with laboratory tasks for monitoring purposes. The Central water laboratory within the Water Institute is the Official Laboratory for sampling and analysis within the monitoring and other official water controls. The Water Institute is also competent body for the interpretation of monitoring results. It prepares an annual report on the interpretation of monitoring results by 30 June of the current year for the previous year and submit the report to the Ministry and the state administration body responsible for the environment and nature.⁵¹

At the moment, the Regulation of the Government of the Republic of Croatia establishing the Water Institute “Josip Juraj Strossmayer” is still in the process of adoption. Until the expiration of three months from the establishment of the Water Institute Hrvatske vode shall continue to perform the following tasks: - carry out the monitoring and perform laboratory tasks in the implementation of monitoring; - are responsible for interpreting the results of monitoring, on which they prepare an annual and submit the report to the Ministry and the state administration body responsible for the environment and nature.⁵²

2.3. Legal status of waters

Article 8 paragraphs 1 and 2 of the Waters Act stipulates that, waters are a common goods. Waters in surface and groundwater bodies cannot be the object of property rights and other real rights. This provisions are in accordance with Art. 3 paragraph 2 of the Law on Ownership and Other Real Rights⁵³ which defines the concept of the common goods in the Croatian legal system: “Those parts of nature which by their nature cannot be in the power of any natural or legal person individually, but are in the use of all, such as atmospheric air, *water in rivers, lakes and the sea* and the sea coast, are not capable of being the object of property rights and other real rights (common goods).”

⁵⁰ Art. 212 of the Waters Act.

⁵¹ Art. 50, paragraphs 6, 7 and 9 of the Waters Act.

⁵² Art. 252, paragraph 1 of the Waters Act.

⁵³ Act on Ownership and Other Real Rights, Official Gazette, Nos. 91/96, 68/98, 137/99, 22/00, 73/00, 129/00, 114/01, 79/06, 141/06, 146/08, 38/09, 153/09, 143/12, 152/14, 81/15 – consolidated text; 94/17.

Waters in surface and groundwater bodies are therefore the objects out of legal circulation, but that does not mean that no one exercises power on them and care for them. Under the provision of Art. 3 paragraph 3 of the Law on Ownership and Other Real Rights, the Republic of Croatia takes care of, manages and is responsible for common goods, unless otherwise provided by a special law. The application of this provision to waters means that in principle they are managed and cared for by the Republic of Croatia, but that the Waters Act and other regulations determines the conditions under which other persons may use waters and acquire certain rights on waters.⁵⁴ Also, in accordance with this provision Art, 8 paragraph 1 of the Waters Act determined that waters have special protection of the Republic of Croatia.⁵⁵

Regardless of who is entrusted with management of the water as a common good, it is obliged to respect the provision of Art. 35, paragraph 7 of the Law on Ownership and Other Real Rights under which whoever decides on common goods or manages them, is obliged to act as a good host and is responsible for it.

According to the Art. 35 paragraph 3 of the Waters Act, surface waters are divided into first-order waters and second-order waters. Coastal waters belong to the waters of the first order, and their list is determined by a decision of the Government of the Republic of Croatia

2.4. Water management planning documents

The most important planning documents for water management are the Water Management Strategy, the Water Districts Management Plan, Multi-annual construction programs, Financial plan of Hrvatske vode and the Water Management Plan.

A) The Water Management Strategy is a planning document which determines the vision, mission, goals and tasks of the state policy in water management in the long term. The strategy is adopted by the Croatian Parliament.⁵⁶ At its session on 15 July 2008, the Croatian Parliament adopted the currently in force Water Management Strategy.⁵⁷

⁵⁴ Thus prescribed by Art. 8 paragraph 3 of the Water Act: "The waters referred to in paragraph 2 of this Article shall be used and rights shall be acquired in them in the manner and under the conditions determined by this Act and other regulations."

⁵⁵ This is also in accordance with the provision of Art. 52 of the Constitution of the Republic of Croatia.

⁵⁶ Art. 38 of the Waters Act.

⁵⁷ Official Gazette, No. 91/08.

B) The Water Districts Management Plan is adopted by the Government of the Republic of Croatia for each water district separately.⁵⁸ The Water Districts Management Plan is adopted for a period of six years, after which it is amended for a period of the next six years. The content of the Water Districts Management Plan is regulated in detail by the Ordinance on the Content of the Water Districts Management Plan, issued by the competent minister.⁵⁹

The water district⁶⁰ is the land and sea area consisting of one or more adjacent river basins with their associated groundwater, transitional and coastal waters, which is the main unit for the management of the river basins.⁶¹ In the state territory of the Republic of Croatia there are two water districts: - water district of the Danube river; - Adriatic water district. The boundaries of water districts are determined by a regulation of the Government of the Republic of Croatia.

The currently in force Water Districts Management Plan for the period 2016 - 2021⁶² contains, *inter alia*: - summary of significant pressures and impacts of human activity on the status of surface waters, including coastal waters; - assessment of pollution from point sources; - assessment of pollution from diffuse sources; - review of significant impacts on the aquatic environment; - analysis of other impacts of human activity on water status; - a map of the monitoring network and a map of the results of the monitoring of surface waters, including coastal waters and territorial sea waters and protected areas with regard to the status of those waters; - a list of quality objectives for surface waters, including coastal waters and territorial sea waters and deadlines for achieving those objectives; - a summary of the adopted programs of measures for achieving the water quality objectives, including the ways of achieving the objectives of those measures, including basic measures and additional measures.⁶³

Work Program of the Water Districts Management plan and the flood risk management plan for the period 2022-2027 developed by Hrvatske vode has been published.⁶⁴ The Work Program envisages the

⁵⁸ Art. 39, paragraph 1 of the Waters Act.

⁵⁹ Official Gazette, Nos. 74/13, 53/16 and 64/18.

⁶⁰ In the terminology of the EU Water Framework Directive: river basin district (Art. 2, point 13).

⁶¹ Art. 4, paragraph 1, point 104 of the Waters Act.

⁶² Official Gazette, No. 66/16.

⁶³ The draft Water District Management Plan for the period 2016-2021 was prepared by Hrvatske vode together with a number of scientific and professional institutions that prepared expert bases.

⁶⁴ Available on the website:

https://www.voda.hr/sites/default/files/dokumenti/program_rada_plana_2022.-2027.pdf

procedures for appropriate amendments of the; - Regulation on the water quality standard⁶⁵; - Ordinance on limit values for waste water emissions.⁶⁶

In the Work Program it is emphasized that the Water Districts Management Plan 2022-2027 will be substantially harmonized with the Strategy for Management of the Marine Environment and Coastal Areas and its action programs adopted in accordance with the provisions of Article 56 of the Environmental Protection Act, in terms of achieving the objectives and implementation of the program of measures, which will achieve synergy effects on environmental protection activities as a whole.

The Marine Strategy Framework Directive 2008/56/EC requires Member States to take measures to achieve or maintain a good state of the marine environment by 2020 at the latest. To this end, marine strategies are being developed and implemented within which an ecosystem approach to human activity management is applied. The Directive also represents an 'environmental pillar' in all EU policies oriented towards the sustainable management and use of the natural resources of the marine environment. The implementation of the Marine Strategy Framework Directive in Croatia consists of:

- harmonization of national legislation with the provisions of the Marine Strategy Framework Directive;
- preparation of marine strategy documents for marine waters under national jurisdiction with the establishment or continuation of sub-regional cooperation with neighboring countries, and cooperation at the EU level.

The obligations from the Marine Strategy Framework Directive 2008/56/EC with its amendments⁶⁷ are implemented in the Croatian legal system by adopting the Regulation on the Establishment of a Framework for the Action of the Republic of Croatia in the Protection of the Marine Environment⁶⁸ and the Regulation on the Development and Implementation of Documents of the Marine Environment and Coastal Management Strategy.⁶⁹ The latter Regulation regulates the starting points and criteria for the drafting, development, implementation and monitoring of the implementation of the Marine Environmental Protection Strategy or the so-called "Marine Strategy", which has its legal basis in the

⁶⁵ Official Gazette, Nos. 73/13, 151/14, 78/15, 61/16 and 80/18.

⁶⁶ Official Gazette, Nos. 80/13, 43/14, 27/15 and 3/16.

⁶⁷ Commission Directive (EU) 2017/845 of 17 May 2017 amending Directive 2008/56/EC of the European Parliament and of the Council as regards the indicative lists of elements to be taken into account for the preparation of marine strategies (Text with EEA relevance), OJ L 125, 18.5.2017.

⁶⁸ Official Gazette, No. 136/11.

⁶⁹ Official Gazette, Nos. 112/14, 39/17, 112/18.

Articles 55 and 56 of the Environmental Protection Act. This Regulation also contains provisions of The Protocol on Integrated Coastal Zone Management in the Mediterranean (ICZM Protocol).⁷⁰

So far various preparatory documents and action programs of the Croatian Marine Strategy have been developed. Among them, the following are the most important:

- Initial assessment of the state and load of the marine environment of the Croatian part of the Adriatic (July, 2012).⁷¹
- Program of Protection Measures and Marine Environmental Management in the Coastal Area of the Republic of Croatia (October, 2017).⁷²
- Set of characteristics of the environmental state of the sea under the sovereignty of the Republic of Croatia and a set of objectives in the protection of the marine environment and related indicators (October, 2014).⁷³
- Updating the documents of the Marine Environment and Coastal Zone Management Strategy based on the obligations from Article 8, Article 9 and Article 10 of the Marine Strategy Framework Directive 2008/56/EC (September, 2019).⁷⁴

In March 2021 The Government of the Republic of Croatia has made a decision on the adoption of the **Marine Environmental and Coastal Area Strategy Action Program; Following and Monitoring System for Continuous Assessment of the State of the Adriatic Sea (2021-2026)**,⁷⁵ in a text submitted to the

⁷⁰ This is the protocol of the Barcelona Convention (on the Barcelona Convention, see *infra*, footnote no. 81.), which was adopted into the Croatian legal order by the Act on the Ratification of the Protocol on Integrated Coastal Zone Management in the Mediterranean, Official Gazette, International Agreements, No. 8/12.

⁷¹ Text available on the website:

https://mingor.gov.hr/UserDocImages/NASLOVNE%20FOTOGRAFIJE%20I%20KORI%C5%A0TENI%20LOGOTIPO VI/doc/pocetna_procjena_stanja_i_pritisaka_na_morski_okolis_hrvatskog_dijela_jadrana.pdf

⁷² Decision of the Government of the Republic of Croatia on adoption of the Program of Protection Measures and Marine Environmental Management in the Coastal Area of the Republic of Croatia, Official Gazette, No. 97/2017.

Text available on the website:

https://mingor.gov.hr/UserDocImages/Uprava_vodnoga_gospodarstva_i_zast_mora/Strategija_upravljanja_morem/program_mjera_zastite_i_upravljanja_morskim_okolisem_i_obalnim_podrucjem.pdf

⁷³ Text available on the website:

https://mingor.gov.hr/UserDocImages/Uprava_vodnoga_gospodarstva_i_zast_mora/Strategija_upravljanja_morem/skup_znacajki_dobrog_stanja_okolisa_i_skup_ciljeva_u_zastiti_morskog_okolisa.pdf

⁷⁴ Text available on the website:

https://mingor.gov.hr/UserDocImages/Uprava_vodnoga_gospodarstva_i_zast_mora/Strategija_upravljanja_morem/Izvjesce_Azuriranje_dok_Strategije_2019.pdf

Within the implementation of Art. 17 of the Marine Strategy Framework Directive European Member States are obliged to update the preparatory documents of the Marine Strategy after the end of the first Marine Strategy Framework Directive implementation cycle. All elements of the Marine Strategy are updated periodically every six years.

⁷⁵ Official Gazette, No. 28/21.

Government of the Republic of Croatia by the Ministry of the Economy and Sustainable Development.⁷⁶ The first Following and Monitoring System for Continuous Assessment of the State of the Adriatic Sea was adopted by the Government of the Republic of Croatia in 2014.⁷⁷ Taking into account the obligation from the Marine Strategy Framework Directive⁷⁸ to review all elements of marine strategies every six years and their alignment with changes through the update process, the Republic of Croatia has an obligation to update the existing following and monitoring system with the current conditions and opportunities, thus enabling its application during the next six-year period (2021-2026). The monitoring and surveillance system is implemented in the marine environment and the coastal area under the sovereignty of the Republic of Croatia.

The currently valid Following and Monitoring System for Continuous Assessment of the State of the Adriatic Sea (2021-2026) incorporates eleven descriptors of the good state of the environment on which the monitoring and observation system is based, and which are determined by the Commission Decision (EU) 2017/848 of 17 May 2017 laying down criteria and methodological standards on good environmental status of marine waters.⁷⁹

The Croatian Following and Monitoring System for the period 2021-2026, due to the state obligations at the regional level, is harmonized with the Integrated Monitoring and Assessment Programme (IMAP)⁸⁰ within the framework of the Mediterranean Action Plan of the United Nations Environment Programme (UNEP/MAP).⁸¹ The descriptors of this updated Following and Monitoring System are considered through the connection with environmental objectives and indicators within IMAP.

⁷⁶ Text available on the website:

https://mingor.gov.hr/UserDocImages/Uprava_vodnoga_gospodarstva_i_zast_mora/Strategija_upravljanja_morem/Akcijски%20program%20Sustav%20pra%20C4%87enja%202021_2026.pdf

⁷⁷ Official Gazette, No. 153/14.

⁷⁸ Transferred to Article 23 of the Regulation on the Development and Implementation of Documents of the Marine Environment and Coastal Management Strategy.

⁷⁹ Commission Decision (EU) 2017/848 of 17 May 2017 laying down criteria and methodological standards on good environmental status of marine waters and specifications and standardised methods for monitoring and assessment, and repealing Decision 2010/477/EU (Text with EEA relevance), OJ L 125, 18.5.2017.

⁸⁰ See: <https://www.medqsr.org/integrated-monitoring-and-assessment-programme-mediterranean-sea-and-coast>

⁸¹ The MAP was the first UNEP initiative to be developed under the Regional Seas Programme. MAP's initial objectives were to assist the Mediterranean Governments to assess and control pollution, as well as to formulate their national marine environmental policies. The MAP was established over 40 years ago as a framework of cooperation in addressing common challenges of marine environmental degradation. It was adopted by the Mediterranean countries in 1976 in The Convention for the Protection of the Mediterranean Sea against Pollution (the Barcelona Convention) which entered into force in 1978. With an initial focus on pollution, which then expanded to further address biodiversity, coastal management and sustainable development, in 1995 the Convention was amended and renamed as the Convention for the Protection of the

They are also in line with the key types of measures listed in the document Program of Protection Measures and Marine Environmental Management in the Coastal Area of the Republic of Croatia, as well as with the objectives set out in the document Updating the documents of the Marine Environment and Coastal Zone Management Strategy based on the obligations from Article 8, Article 9 and Article 10 of the Marine Strategy Framework Directive 2008/56/EC.

C) The multi-year programs for the construction of urban water structures, regulatory and protective water structures and land reclamation structures are adopted by the Government of the Republic of Croatia. The programs are prepared by Hrvatske vode. Those programs must be in accordance with the Water Management Strategy and the Water Districts Management Plan.⁸² In September 2021, the Multi-Year Program for the Construction of Urban Waterworks building for the period up to 2030, was published.⁸³

D) The Financial Plan of Hrvatske vode is prepared on the basis of the Budget Act⁸⁴ by Hrvatske vode for each year. It is adopted by the Government of the Republic of Croatia and confirmed by the Croatian Parliament.⁸⁵

E) On the basis of its Financial plan Hrvatske vode adopt the Waters Management Plan for each current year. The Waters Management Plan must be in accordance with the Water Districts Management Plan, as well as with the Financial plan.⁸⁶

Marine Environment and the Coastal Region of the Mediterranean. The amendments to the Barcelona Convention entered into force in 2004.

The Barcelona Convention and its seven Protocols, adopted in the framework of the Mediterranean Action Plan (MAP), constitute the principal regional legally binding Multilateral Environmental Agreement (MEA) in the Mediterranean. By the Barcelona Convention contracting parties pledge to implement the MAP to pursue the protection of the marine environment and the natural resources of the Mediterranean, meeting the needs of present and future generations in an equitable manner.

The former Yugoslavia was a contracting party of the Barcelona Convention, and the Republic of Croatia became a contracting party to the Convention by succession on October 8, 1991. See: Official Gazette, International Agreements, No. 12/93.

⁸² Art. 43 of the Waters Act.

⁸³ Available at website: https://mingor.gov.hr/UserDocsImages/UPRAVA-ZA-PROCIJENU-UTJECAJA-NA-OKOLIS-ODRZIVO-GOSPODARENJE-OTPADOM/Spuo/06_09_2021_Visegodisnji_program_vodne_gradjevine.pdf

⁸⁴ Official Gazette, Nos. 87/08, 136/12 and 15/15.

⁸⁵ Art. 44, paragraph 1 of the Waters Act.

⁸⁶ Art. 44, paragraphs 2-4 of the Waters Act.

2.5. Protection of water from pollution

2.5.1. General provisions on the protection of waters against pollution

As already pointed out, the Waters Act is the basic regulation which in the Republic of Croatia regulates the protection of waters in general, and thus the protection of waters from pollution.⁸⁷ This means that the provisions of this Act also apply to the protection of marine waters (primarily coastal waters, and in terms of chemical status also on the protection of the territorial sea waters) from pollution, including pollution caused by municipal wastewater.

However, the analysis of the Croatian legal regulation of water protection against pollution requires a parallel examination of a number of other laws and bylaws, and should not be limited exclusively to the provisions of the Waters Act. Namely, the Waters Act itself refers to the obligation to regulate some issues relevant to the protection of water from pollution by bylaws, which the Republic of Croatia has done. Also, the Croatian legal framework governing the protection of water from pollution includes certain provisions of other laws, such as the Water Services Act and the Financing Water Management Act. Therefore, these regulations will be analyzed in the following discussions. It should also be emphasized that the Waters Act and other regulations relevant to this issue are highly harmonized with EU directives governing the protection of water against pollution. Therefore, the following analyzes contain only a brief general overview of the Croatian legal framework.

Goals of water protection:

Art. 46 paragraph 1 of the Waters Act determines **the goals of water protection**, so as one of the goals sets: better protection and improvement of the state of the aquatic environment, inter alia through specific measures for the gradual reduction of discharges, emissions and dissipations of hazardous substances from the priority list and the cessation or gradual abatement of discharges, emissions or dissipations of hazardous substances from the priority list.⁸⁸ It is clear from this provision that protection of water from pollution always includes the protection of the aquatic environment and, where applicable, other components of the environment.⁸⁹ The legal definition of the aquatic

⁸⁷ Chapter V, Articles 46-85 of the Waters Act.

⁸⁸ Achieving this goal contributes to the protection of inland surface waters and sea waters, but also to the realization of the objectives of relevant international agreements, including those aimed at eliminating marine pollution in accordance with regulations ensuring the cessation or phasing out of discharges, emissions and dissipations of hazardous substances from the priority list, with the ultimate goal of achieving values in marine environment close to basic concentrations which occur naturally and concentration around zero for synthetic substances.

⁸⁹ Specially stated in Art. 46, paragraph 5 of the Waters Act.

environment is: aquatic environment is an aquatic system, including aquatic and water-dependent ecosystems (organisms and their communities), man and the material and cultural heritage created by man in the totality of interaction.⁹⁰

Protection of water from pollution is not the only goal of water protection as regulated by the Waters Act. Thus, for example, the goals of water protection are also to protect and improve the state of aquatic ecosystems, or to promote sustainable water use based on long-term protection of available water resources. But, it is important that the Art. 48 of the Waters Act prescribes when more than one water quality goals has been set for a given water body,⁹¹ the goal with the most stringent requirements applies.

Instruments of water protection:

In accordance with the Water Framework Directive and other relevant EU directives, the main **instruments for the protection of water from pollution** established by the Waters Act, are:

- monitoring the quality of water and pollution sources;
- pollution control;
- banning the release of pollutants into water and banning other actions and behaviors that can cause pollution of the aquatic environment and the environment as a whole;
- construction and management of drainage and sewage treatment plants.⁹²

Water protection structures:

Water protection structures provided by the Waters Act are also in line with EU directives. The basic organizational structure for management of waters, and thus also for water protection, is the concept of **water districts**. It is at the level of such water districts that, according to the Waters Act, the protection of water resources should take place.⁹³

⁹⁰ Art. 4, paragraph 1, point 102 of the Waters Act.

⁹¹ Art. 4, paragraph 1, point 90 of the Waters Act defines water body: a surface water body is a clearly defined and significant element of surface water, such as a lake, reservoir, stream, river or canal, part of a stream, river or canal, transitional water or coastal water belt.

⁹² Art. 46, paragraph 3 of the Waters Act.

⁹³ See supra, page 15.

The second level of protection is implemented by establishing **protected areas** on the basis of the Water Act and other laws. According to the Art. 55, paragraph 1 of the Waters Act, protected areas or areas of special water protection, *inter alia*, are: - areas suitable for the protection of economically important aquatic organisms; - bathing and recreation areas in accordance with this Act and regulations on environmental protection; - areas intended for the protection of habitats or species where the maintenance or improvement of water status is an essential element of their protection in accordance with this Act and/or regulations on nature protection; - areas subject to eutrophication; - areas of poor water exchange in coastal waters, the sensitivity of which is assessed in relation to the discharge of municipal wastewater.

Criteria for determination of protected areas are determined by the Art. 56-67 of the Regulation on the Standard of the Water Quality.⁹⁴ Hrvatske vode is keeping a register or registers of protected areas - areas of special water protection, summaries of which are an integral part of the Water Districts Management Plan.

For the subject matter of this report relevant are those protected areas established by the Republic of Croatia on the coastal waters. According to the data submitted by the Republic of Croatia to the European Commission in 2019,⁹⁵ the following protected areas have been established on the *coastal waters*:

- Recreational waters, including areas designated as bathing waters in accordance with Directive 2006/7/EC⁹⁶: 882
- The protection of species for the protection of which the maintenance or improvement of water status is an important factor, including relevant Natura 2000 sites determined in accordance with Directive 79/409/EEC⁹⁷: 3

⁹⁴ Official Gazette, No. 96/19.

⁹⁵ Source: COMMISSION STAFF WORKING DOCUMENT, Other river basin management plans - Member State: Croatia; attached to the document: REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL on the implementation of the Water Framework Directive (2000/60 / EC) and the Floods Directive (2007/60 / EC), Bruxelles, 26.2.2019. SWD (2019) 43 draft.

⁹⁶ Directive 2006/7/EC of the European Parliament and of the Council of 15 February 2006 concerning the management of bathing water quality and repealing Directive 76/160/EEC, OJ L 64, 4.3.2006, (Council Directive 76/160/EEC of 8 December 1975 concerning the quality of bathing water, OJ L 31, 5.2.1976).

⁹⁷ Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds, OJ L 103, 25.4.1979, DIRECTIVE 2009/147/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 30 November 2009 on the conservation of wild birds, (codified version), OJ L 20/7, 26.1.2010.

- The protection of habitats or species for the protection of which the maintenance or improvement of water status is an important factor, including relevant Natura 2000 sites determined in accordance with Directive 92/43/EEC:⁹⁸ 224
- Nutrient sensitive areas identified as vulnerable areas in accordance with Directive 91/271/EEC (Urban Wastewater Treatment Directive):⁹⁹ 57
- Areas designated for the protection of economically important aquatic species: 15

In accordance with Annex IV of the Water Framework Directive, the Waters Act also regulates **sensitive areas** as a type of protected area.¹⁰⁰ Art. 55 paragraph 1 of the Waters Act distinguishes between sensitive and less sensitive areas. So, sensitive areas are areas where, in order to achieve water quality objectives, it is necessary to carry out a higher level or a higher degree of urban wastewater treatment than prescribed by the relevant bylaw. Less sensitive areas are areas where the natural characteristics of water allow the implementation of a lower level or lower degree of urban wastewater treatment than prescribed by the relevant bylaw. However, although it sets the above rules, the Waters Act does not regulate sensitive areas in more detail. Areas subject to eutrophication¹⁰¹ and areas of very poor water exchange in coastal waters, whose sensitivity is assessed in relation to the discharge of municipal wastewater, are in detail regulated by the Regulation on the Standard of the Water Quality. These provisions are in accordance with the Annex II of the Urban Waste Water Directive which defines sensitive and less sensitive areas.

Article 65 paragraph 1 of the Regulation on the Standard of the Water Quality defines which areas are to be declared sensitive. These include, but are not limited to, estuaries, transitional and coastal waters which are found to be eutrophic in accordance with the criteria set out in Annex X to this Regulation or which may become eutrophic in the near future if protection measures are not taken, in particular:

⁹⁸ Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, OJ L 206, 22.07.1992.

⁹⁹ Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment, OJ L 135, 30.05.1991.

¹⁰⁰ In line with its "framework" nature, Directive 2000/60/EC in this matter relies on the regulation of sensitive areas in the Nitrates Directive (Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources, Official Journal L 375 , 31/12/1991 P. 0001 – 0008) and in the Urban Waste Water Directive (Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment, OJ L 135, 30.05.1991).

¹⁰¹ Art. 4, paragraph 1, point 19 of the Waters Act defines eutrophication (in accordance with the definition of eutrophication from the Urban Waste Water Directive, Art. 2, point 11) as the enrichment of water with nutrients, nitrogen and/or phosphorus compounds, which cause accelerated growth of algae and higher forms of plant species, and leads to unwanted imbalance of organisms in water and changes in water status.

estuaries, bays and other coastal waters which are found to have poor water exchange or which receive large amounts of nutrients. Discharges from small agglomerations are usually of less importance in these areas, but for large agglomerations it is necessary to include the removal of phosphorus and/or nitrogen, unless it can be shown that the removal would not affect the level of eutrophication. In order to determine areas subject to eutrophication and areas of very poor water exchange in coastal waters, in addition to monitoring carried out to assess the state of water, additional monitoring is established over a period of one year and repeated every four years¹⁰²

Pursuant to the provisions of Art. 65, paragraphs 2 and 3 of, the Regulation on the Standard of the Water Quality coastal and transitional waters and associated areas may be identified as less sensitive areas if the pollution does not harm the environment due to favorable morphology, hydrology or special hydraulic conditions that exist in the area. When identifying less sensitive areas, the possibility of a negative impact of pollution on the surrounding areas is taken into account. In identifying less sensitive areas, the following elements shall be taken into account: open bays, estuaries and other coastal waters with good water exchange and which are not subject to eutrophication or lack of oxygen, or which are considered unlikely to become eutrophic or to occur the lack of oxygen due to municipal wastewater discharge.

The decision on determining sensitive and less sensitive areas shall be made by the Government of the Republic of Croatia, in accordance with the criteria established in the Regulation on the Standard of the Water Quality.¹⁰³ The Government Decision on the designation of sensitive areas, adopted in 2010 and amended in 2015, is currently in force.¹⁰⁴

Determining the Water Status; Environmental quality standards (EQS); Monitoring

The concept underlying the protection of water from pollution is that of environmental quality standards. “Environmental quality standard” means the concentration of a particular pollutant or group of pollutants in water, sediment or biota which should not be exceeded in order to protect human health and the environment.¹⁰⁵ It has been introduced into Croatian law from the relevant EU directives,¹⁰⁶ and is regulated by the Regulation on the Standard of the Water Quality.

¹⁰² Art. 66, paragraphs 1 and 6 of the Regulation on the Standard of the Water Quality.

¹⁰³ Art. 56, paragraph 2 of the Waters Act.

¹⁰⁴ Official Gazette, Nos. 81/2010 and 141/2015.

¹⁰⁵ Art. 4, paragraph 1, point 84 of the Waters Act (Art 3, point 35 of the Directive 2000/60/EC).

¹⁰⁶ Annex X of the Water Framework Directive; Directive 2008/105/EC of the European Parliament and of the Council of 16 December 2008 on environmental quality standards in the field of water policy, amending and

This Regulation thus regulates the elements for determining the ecological and chemical status of waters, the categories of ecological and chemical status and ecological potential of waters, also the elements for designating surface water body as an artificial and heavily modified surface water body, as well as the categories of its ecological potential.¹⁰⁷ The Regulation on the Standard of the Water Quality also regulates the Environmental quality standards¹⁰⁸ and contains in Annex 5.A. a *List of priority substances and other pollutants for surface waters*,¹⁰⁹ to which the Environmental quality standards referred to in Annex 5.B. applies, in accordance with the requirements set out in Annex 5.C. An indicative list of basic pollutants, from which specific pollutants are determined, is set out in Annex 4 to this Regulation, which sets out the quality standards of the aquatic environment and programs for their monitoring with deadlines for the implementation of appropriate measures.

In accordance with the Water Framework Directive, the Regulation on the Standard of the Water Quality also regulates the monitoring of ecological status and chemical status for surface waters.¹¹⁰ Surface water monitoring is carried out by the Water Institute according to the monitoring plan adopted in accordance with the Monitoring Harmonization Program¹¹¹ adopted in accordance with the Water District Management Plan. The monitoring plan is adopted for the next current year, with the prior consent of Hrvatske vode. The Water Institute submits to Hrvatske vode a report on the monitoring carried out, the results of the monitoring and the interpretation of the monitoring by 31 March of the following year for the previous year. The monitoring activities are performed as a public service.¹¹²

Surface water monitoring is carried out as surveillance and operational monitoring, and if necessary as investigative monitoring. A network of measuring sites shall be established to monitor the condition of surface waters. The Regulation on the Standard of the Water Quality sets the criteria for determining

subsequently repealing Council Directives 82/176/EEC, 83/513/EEC, 84/156/EEC, 84/491/EEC, 86/280/EEC and amending Directive 2000/60/EC of the European Parliament and of the Council, OJ L 348/84, 24.12.2008; Directive 2013/39/EU of the European Parliament and of the Council of 12 August 2013 amending Directives 2000/60/EC and 2008/105/EC as regards priority substances in the field of water policy Text with EEA relevance,
OJ L 226, 24.8.2013.

¹⁰⁷ Art. 10-18 of the Regulation on the Standard of the Water Quality.

¹⁰⁸ Art. 19-28 of the Regulation on the Standard of the Water Quality.

¹⁰⁹ Which is taken from Annex X (LIST OF PRIORITY SUBSTANCES IN THE FIELD OF WATER POLICY) of the Water Framework Directive, and approximately 20 of them are characterised as “hazardous priority substances”.

¹¹⁰ Art. 29-37 of the Regulation on the Standard of the Water Quality.

¹¹¹ The monitoring harmonization program is adopted by Hrvatske vode and is based on the results of the assessment of the surface water status and analyzes of the characteristics of the river basin district referred to in Article 51 of the Waters Act.

¹¹² Article 50, paragraph 11 of the Waters Act.

the frequency of supervisory and operational monitoring, as well as the criteria for determining the location of measuring sites.¹¹³

Monitoring of the state of surface waters is harmonized with the monitoring carried out on the basis of environmental protection regulations. Monitoring of substances listed on the surface water Watch List is carried out at selected representative monitoring stations for a period of at least 12 months in accordance with the applicable Commission (EU) Regulation establishing a monitoring list for substances to be monitored throughout the Union in the field of water policy.¹¹⁴

Measures

Based on the results of monitoring for each water body, an assessment of its status is made individually and each is classified into the appropriate category determined by the Regulation on the Standard of the Water Quality.¹¹⁵ The status of a surface water body is determined on the basis of the ecological or chemical status of that body, whichever is worse.¹¹⁶

For each water district a Program of measures for the protection of surface waters, including coastal waters, is prepared, taking into account the results of the analysis of its characteristics. The Program of measures is a component of the Water District Management Plan. The realization of the Program of measures determined by the Water Management Plan achieves, in addition to the general goals of water protection specified in Article 46 of the Waters Act, also **special goals of water protection** determined in Article 4 of the Regulation on the Standard of the Water Quality, among which the gradual reduction of pollution with priority substances and specific pollutants and the cessation and phasing out of emissions of priority hazardous substances should be emphasized.¹¹⁷

¹¹³ Art. 34-37 of the Regulation on the Standard of the Water Quality.

¹¹⁴ The surface water Watch List (WL) under the Water Framework Directive is a mechanism for obtaining high-quality Union-wide monitoring data on potential water pollutants for the purpose of determining the risk they pose and thus whether Environmental Quality Standards (EQS) should be set for them at EU level. According to the Art. 8b paragraph 1 of the Directive 2008/105/EC, this list should be updated every 2 years. The 1st Watch List was established by the EU Commission Implementing Decision (EU) 2015/4951 in March 2015. The list was updated in June 2018 by Commission Implementing Decision (EU) 2018/840.

¹¹⁵ Articles 51 and 52 of the Waters Act.

¹¹⁶ In accordance with the procedure shown in the diagram in Annex 3.A. of the Regulation on the Standard of the Water Quality.

¹¹⁷ - Preventing the deterioration of all surface waters without permanently endangering the status of other waters in the same water district; - protection, encouragement of renewal and renewal of all surface waters in order to achieve good surface water status, without permanently endangering the status of other waters in the same water area; - protection and preservation of all artificial and significantly changed bodies of surface waters in order to achieve good ecological potential and good chemical status of surface waters, without permanently endangering the state of other waters in the same river basin district: - gradual reduction of

The program of measures contains the ‘basic’ measures that have been determined by the Ordinance on the Content of the Water Districts Management Plan.¹¹⁸ The program of measures also contains additional measures that are implemented in protected areas - areas of special water protection and in significantly changed water bodies.¹¹⁹ When monitoring or other official data indicate that the objectives of water protection are unlikely to be achieved, Hrvatske vode will, *inter alia*, ensure that additional measures are taken to achieve these objectives, including possibly the establishment of stricter environmental quality standards. The list of supplementary measures, which may be further supplemented, is contained in the Ordinance on the Content of the Water Districts Management Plan.¹²⁰

The Waters Act¹²¹ and the Regulation on the Standard of the Water Quality transposes into the Croatian legal system Article 4 of the Water Framework Directive, which allows, under certain conditions and justifications, **exemptions from the goals of water protection:**

- extension of deadlines to achieve water protection objectives;^{122 123}
- less stringent goals of water protection;¹²⁴
- temporary deterioration of good status/potential;¹²⁵
- deterioration or failure to achieve good status/potential due to new developments.

The application of the exemptions must be in accordance with the regulations on environmental protection, and must not permanently exclude or jeopardize the achievement of the objectives of water protection in other waters in the same river basin district.

pollution with priority substances and specific pollutants and cessation and phasing out of emissions of priority hazardous substances.

¹¹⁸ Official Gazette, Nos. 74/13, 53/16 and 64/18.

¹¹⁹ Art. 54 of the Waters Act.

¹²⁰ Art. 65, paragraphs 1 and 3 of the Waters Act.

¹²¹ Art. 61 and 62 of the Waters Act.

¹²² Art. 5 of the Regulation on the Standard of the Water Quality.

¹²³ Art. 243 of the Waters Act prescribes that the objectives of good surface water status, good ecological potential and good surface water chemical status, and compliance with all standards and objectives applicable to protected areas shall be achieved by the deadline set in the art. 4 paragraph 1 points (a) (ii) and (iii), (b) (ii) and (c) of the Water Framework Directive (at the latest 15 years after the date of entry into force of this Directive).

¹²⁴ Art. 6 of the Regulation on the Standard of the Water Quality.

¹²⁵ Art. 7 of the Regulation on the Standard of the Water Quality.

2.5.2. Discharge, drainage and treatment of the waste water

2.5.2.1. The concept of waste water; Principles of waste water discharge control

The basic provisions governing discharge, drainage and treatment of the waste water in Croatian law can be found in the Waters Act,¹²⁶ but numerous provisions of the Water Services Act,¹²⁷ the Financing Water Management Act,¹²⁸ the Regulation on the Standard of the Water Quality, the Ordinance on the Waste Water Emission Limit Values,¹²⁹ and a number of other bylaws are also relevant to this matter. All these regulations are highly compliant with relevant EU directives, including the Urban Wastewater Directive 91/271/EEC,¹³⁰ and its amendments.¹³¹

As a general regulation, the Waters Act in this chapter contains some common rules for the drainage and treatment of all types of waste water. In Art. 4 paragraph 1 point 38 it defines **waste water** as all potentially polluted industrial water, sanitary water, rain water and other waters. In accordance with the Urban Waste Water Directive, **urban waste water** is defined as a waste water from a public sewerage system that consists of sanitary waste water or waste water that is a mixture of sanitary waste water with industrial waste water and/or run-off rain water of a particular agglomeration.¹³²

The term **sanitary waste water** from Art. 1, paragraph 1, point 81 of the Waters Act also corresponds to the definition from Urban Waste Water Directive:¹³³ sanitary waste water is waste water that is discharged after use from residential buildings and service facilities and which mainly originates from human metabolism and household activities. The same goes for the definition of the **industrial waste water**: all waste water, except sanitary waste water and run-off rain water, which is discharged from areas used for trade or industrial activities,¹³⁴ and for the definition of **agglomeration**: an area in which the population and/or economic activities are sufficiently concentrated that urban waste water can be collected and discharged to a waste water treatment plant or to the final point of discharge.¹³⁵ In addition, the Waters Act defines the notion of **run-off rain water**: run-off rain water is waste water

¹²⁶ Art. 66-80 of the Waters Act.

¹²⁷ Official Gazette, No. 66/19.

¹²⁸ Official Gazette, Nos. 153/09, 90/11, 56/13, 154/14, 119/15, 120/16, 127/17, 66/19.

¹²⁹ Official Gazette, No. 26/20.

¹³⁰ Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment, Official Journal L 135, 30/05/1991.

¹³¹ Commission Directive 98/15/EC of 27 February 1998 amending Council Directive 91/271/EEC with respect to certain requirements established in Annex I thereof (Text with EEA relevance), Official Journal L 067, 07/03/1998 P. 0029 – 0030.

¹³² Art. 4 paragraph 1 point 34 of the Waters Act.

¹³³ Although the Urban Waste Water Directive uses a term “domestic waste water”.

¹³⁴ Art. 4 paragraph 1 point 25 of the Waters Act.

¹³⁵ Art. 4 paragraph 1 point 1 of the Waters Act.

generated by leaching precipitation from road surfaces, parking lots or other areas, gradually dissolving pollutants in these areas.¹³⁶

As a general regulation, the Waters Act defines in Art. 66-69 the *principles of wastewater discharge control*, in accordance with EU directives:

- a. Damage caused to water and the aquatic environment is remedied primarily at the source of damage.**
- b. The polluter bears the costs of polluting the water and the aquatic environment.** The costs are: - costs of the prevention of further damage; - costs of the restoration of the previous situation, including the costs of assessing the damage and repairing the damage; - the expenditure on preventing the occurrence of future pollution. The polluter also bears the costs of: - monitoring the state of water; - implementation of water protection measures; - implementation of plans and programs of state investments in the construction of public drainage buildings and costs of taking measures to prevent water pollution. Polluter bears the costs either on the basis of liability for pollution or by payment of fee for water protection.¹³⁷
- c. Combined approach to discharges.** According to the Art. 10 paragraph 1 of the Water Framework Directive, discharges into surface waters are controlled by a “combined approach for point and diffuse sources”. The Water Framework Directive refers in this respect to other EU Directives, both those in force at the time of its adoption or subsequent ones, pertaining to water or impacted by water, included “any other relevant community legislation”. “Combined approach” aims at controlling discharges at point sources and diffuse sources. It also means that Member States shall ensure the establishment and/or implementation of a diversity of instruments. For point sources this includes emission limit values or controls based on available techniques. In the case of diffuse impacts the controls including, as appropriate, best environmental practices provided for by those other EU Directives.

This concept is adopted by the Art. 68 of the Waters Act, defining a combined approach: - prescribing water quality standards; - application of the prescribed emission limit values; - control of emissions by applying the best available techniques in cases of point sources of pollution in accordance with the regulations on environmental protection and in accordance with this Act and regulations adopted on the basis thereof; - in cases of dispersed sources of

¹³⁶ Art. 4 paragraph 1 point 48 of the Waters Act.

¹³⁷ The fee for water protection is regulated by the Financing Water Management Act, and liability for damage is regulated by the general rules on civil liability.

pollution, the application of good environmental practice in accordance with the provisions of this Act relating to the treatment of urban waste water, and regulations on agriculture and environmental regulations. Further elaboration of the combined approach principle with regard to emission limit values for pollutants in waste water can be found in the Art. 10-11 of the Ordinance on the Waste Water Emission Limit Values.

2.5.2.2. Systems of drainage and discharge of waste water

Drainage and discharge of wastewater is carried out through two types of urban waste water treatment plants: - public drainage systems; - individual drainage systems. All urban waste water treatment plants, public and individual, must meet the technical requirements for the design, construction, maintenance and control of technical correctness.¹³⁸ The stated technical requirements are regulated by the Ordinance on technical requirements for waste water drainage buildings, as well as deadlines for mandatory checking of construction of waste water drainage and treatment of waste water, dated in 2011.¹³⁹ The current Waters Act prescribes the adoption of a new Ordinance, but this has not been done to date.

a) Public drainage and discharge system: is a technically and technologically related set of buildings for public sewerage from the connection of water service users to the end point of discharge.¹⁴⁰

Urban water structures (buildings) for public drainage and discharge are: channels for collection and drainage of urban wastewater, collectors, pumping stations, wastewater treatment plants, buildings and equipment for waste sludge management in the process of wastewater treatment, lagoons, outlets and other structures belonging to these buildings, including the secondary canal network.¹⁴¹ Issues of ownership, management, construction and maintenance of urban water structures for public drainage are regulated by Water Services Act.¹⁴²

Urban water structures are public goods in public use and are owned by the public water service supplier in the particular service area. Such legal status means that the ownership rights over urban water structures are exercised for the benefit of citizens and other legal entities that use water services. Urban water structures can only be in legal circulation

¹³⁸ Art. 78 of the Waters Act.

¹³⁹ Official Gazette, No. 3/11.

¹⁴⁰ Art. 3, paragraph 1, point 16 of the Waters Services Act.

¹⁴¹ Art. 25, paragraph 1, point 2 of the Waters Act.

¹⁴² Art. 9-10 of the Waters Services Act.

between public water service suppliers. In case of bankruptcy or liquidation of the public supplier of water services, urban water structures are transferred to the ownership of the local self-government unit, which is their founder. In that case local self-government units shall transfer the ownership of urban water structures, free of charge, to the ownership of a new public supplier of water services within three months of its establishment.

For the construction of water structures, it is necessary, *inter alia*, to obtain Water law conditions from Hrvatske vode.¹⁴³ Water law conditions are a type of Water law acts.¹⁴⁴ The Ordinance on the Issuance of Water Law Acts¹⁴⁵ regulates the form of water law acts, the necessary evidence for the issuance, the mandatory content and term of validity of water law acts and professional supervision over the implementation of conditions from water law acts. The Water law conditions determine the conditions for construction or any other intervention in space in order to harmonize it with water regulations, especially in the case when spatial interventions affect the water management objectives or water protection objectives established by the Waters Act.

The design, construction and maintenance of public wastewater drainage systems must be carried out in accordance with the best technical knowledge, taking into account the costs of construction and maintenance of the system, bearing in mind: - quantities and properties of municipal wastewater; - watertightness of the wastewater collection and drainage system; - restrictions on the contamination of the receiver in relation to its receiving capabilities.¹⁴⁶

Urban water structures are in principle managed by a public supplier of water services. Management tasks are: tasks of investors in the construction of urban water structures, their operation and maintenance, and preservation and use for the purposes for which urban water structures serve. The costs of managing urban water structures and the operating costs of the public water service provider are financed from the price of the water service.

b) Individual drainage system: is a technically and technologically connected set of buildings, lines and equipment for drainage and treatment of sanitary waste water from one or more households and/or one or more business premises, which are not connected to the public drainage system; individual drainage systems in particular include drainage channels, collection pits, small sanitary facilities, industrial waste water treatment plants, drains,

¹⁴³ Art. 158, paragraph 3, point 8 of the Waters Act.

¹⁴⁴ Art. 156-175 of the Waters Act.

¹⁴⁵ Official Gazette, No. 9/20.

¹⁴⁶ Art. 7, paragraph 4 of the Ordinance on the Waste Water Emission Limit Values.

household lines, etc.¹⁴⁷ In accordance with Art. 3 of the Urban Waste Water Directive, individual drainage systems (or other appropriate systems which achieve the same level of environmental protection) are allowed only where the establishment of a collecting system is not justified either because it would produce no environmental benefit or because it would involve excessive cost.¹⁴⁸ But, just like buildings for public waste water drainage, individual drainage systems must be designed, built and maintained in such a way as to ensure the protection of water prescribed by relevant regulations. Owners or other legal possessors of individual drainage systems are obliged to conduct professional supervision over the maintenance of individual drainage systems, through public suppliers of water services. They are also obliged to empty them through the public water service supplier or through the concessionaire and under the supervision of the water warden appointed by public supplier of water services, in accordance with the Water Services Act.¹⁴⁹

2.5.2.3. Public sewerage service

The system of public drainage and discharge of urban waste waters is based on the following rule: Local self-government units are obliged to ensure the collection and treatment of urban waste water through the water service supplier, before their direct or indirect discharge into water, in accordance with the issued water legal permit for wastewater discharge.¹⁵⁰

Public sewerage service¹⁵¹ is defined as the activity of collecting urban wastewater, treating it and discharging it into a natural receiver through public sewerage facilities and managing those facilities; public sewerage is also the activity of emptying and removal of urban wastewater from individual drainage systems, which includes emptying and removal of sludge from small sanitary devices; public sewerage does not include urban wastewater treatment if the urban wastewater treatment plant is not in functional use, and includes treatment if the collector of the public sewerage system is connected to the industrial waste water treatment plant.¹⁵²

¹⁴⁷ Art. 4 paragraph 1 point 23 of the Waters Act.

¹⁴⁸ Art. 7 paragraph 3 of the Ordinance on the Waste Water Emission Limit Values.

¹⁴⁹ Art. 79 of the Waters Act.

¹⁵⁰ Art. 72 of the Waters Act.

¹⁵¹ Water services are public water supply service and public sewerage service.

¹⁵² Art. 3, paragraph 1, point 4 of the Water Services Act.

Water services (public water supply service and public sewerage service) are activities of general interest and are performed as a public service.¹⁵³ As already stressed, local self-government units are obliged by the law to ensure the provision of water services.

Water services are provided in **service areas**. The service area is established in areas where water for human consumption of at least two million cubic meters per year is supplied with a possible deviation of -10%. The Government of the Republic of Croatia establishes service areas and determines their boundaries by a Regulation on service areas.¹⁵⁴ Currently, the Regulation on Service Areas issued in 2014 is in force, according to which there are 20 service areas in the Republic of Croatia.¹⁵⁵ A draft Regulation on Service Areas envisaging 44 supply areas is still in the process of public discussion. The important novelty brought by the 2019 Water Services Act is that water services in one service area are provided through only one public water service supplier.¹⁵⁶ In an effort to further consolidate the municipal water services sector, the Law on Water Services also provides for the possibility of merging water service providers from neighboring water areas into a single legal entity. Until the adoption of 2019 Water Services Act in one service area several public suppliers could provide services, which led to a great fragmentation of the system. Because of that, currently about 190 public water service suppliers provide services in still existing 20 service areas.

As explained, the entry into force of the new Regulation on service areas will lead to a significant reform of the system of water services in the Republic of Croatia. In this sense, the Water Services Act prescribes that all existing public water service providers in the service area are obliged to merge with the public water service provider which is determined by the new Regulation on service areas as the acquiring company,¹⁵⁷ and the acquiring company is obliged to accept the merger within of six months from the date of entry into force of the new Regulation.¹⁵⁸ The Water Services Act also prescribes the obligation of all local self-government units¹⁵⁹ that after the entry into force of new Regulation transfer

¹⁵³ Art. 4 of the Water Services Act. Water services are of interest to all local self-government units in the service area and to the Republic of Croatia.

¹⁵⁴ This Regulation shall be adopted after consultation with local and regional self-government units and public water service providers.

¹⁵⁵ Official Gazette, No. 67/14.

¹⁵⁶ The only exception is that the water service in the service area can also be performed by concessionaires for the discharge and removal of urban wastewater from individual drainage systems.

¹⁵⁷ The acquiring company will be the existing public water service provider that has had the highest total revenue in the service area or has delivered the largest amount of water in the last three years.

¹⁵⁸ Art. 88 of the Water Services Act.

¹⁵⁹ And other legal entities that may be the owners of urban water structures.

ownership of urban water structures to new public water service suppliers, which will be established by a future Regulation.¹⁶⁰

2.5.2.4. Public Supplier of Water Services

Under 2019 Water Services Act, a **public supplier of water services** is a limited liability company whose sole founders are local self-government units in the service area, or a legal entity whose sole founder is a local self-government unit.¹⁶¹ The Water Services Act prescribes general conditions that must be met for the performance of water services, while special conditions are prescribed by the Government of the Republic of Croatia by regulation.¹⁶² To date, the regulation has not been passed.

Therefore, with regard to the conditions for performing public sewerage activities, the 2011 Ordinance on special conditions for performing public drainage activities¹⁶³ is still in force. The 2011 Ordinance prescribes the conditions related to minimum requirements of equipment and machines for management and maintenance of public drainage buildings, as well as to the professional qualifications and number of employees. The 2011 Ordinance also prescribes that the public supplier must ensure regular sampling and testing of the composition and measurement of the amount of wastewater in accordance with the relevant regulations. If the public supplier is operating public sewerage facilities and/or waste water treatment plants with a receiving load of more than 100 000 p.e.¹⁶⁴ it must have its own laboratory authorized to perform sampling and wastewater testing activities. If the receiving load is less than 100 000 p.e., public supplier may perform sampling and testing of wastewater through its own laboratory or another laboratory authorized to perform the activities of sampling and testing of wastewater.¹⁶⁵

It should be emphasized that these, still valid, provisions of the 2011 Ordinance are in conflict with the provisions of the Water Services Act. Namely, the Act exhaustively lists the tasks that a water service supplier can perform, and among them are not tasks of sampling and testing of wastewater.¹⁶⁶

¹⁶⁰ Art. 89 of the Water Services Act.

¹⁶¹ Art. 12 of the Water Services Act.

¹⁶² Art. 16 of the Water Services Act.

¹⁶³ Official Gazette, Nos. 28/11 and 16/14.

¹⁶⁴ p.e. (population equivalent) means the organic biodegradable load having a five-day biochemical oxygen demand (BOD5) of 60 g of oxygen per day. Art. 4, paragraph 1, point 17 of the Waters Act; Art. 2, point 6 of the Urban Waste Water Directive.

¹⁶⁵ Art. 5 of the Ordinance on special conditions for performing public drainage activities.

¹⁶⁶ Art. 13-15 of the Water Services Act.

Fulfillment of general and special conditions for the start of business of a public water service provider is determined by the Ministry by a decision. If certain conditions cease to exist, the Ministry will *ex officio* revoke the decision in whole or in part.¹⁶⁷

The public water services supplier is liable for its obligations with all its assets, except for urban water structures.¹⁶⁸ If a public water service provider makes a profit in the performance of its activity, it shall be used exclusively for the performance and development of the water services activity.¹⁶⁹ Business shares and stocks in a public water service supplier are not transferable, they cannot be the subject of pledge, other real right or enforcement, except in favor of another local government unit from the same service area.¹⁷⁰

The public water services supplier issues the plan for the **construction of urban water structures**. The plan must be harmonized with the Multi-year programs for the construction of urban water structures. Hrvatske vode shall issue a written opinion on the said compliance.¹⁷¹ Public water service providers are obliged to implement a multi-year construction program within the deadlines set by that program. Local self-government units are obliged to ensure the implementation of a multi-year construction program by co-establishing public water service suppliers, exercising membership and shareholder rights and obligations in public water service suppliers or in other ways.¹⁷²

The public water service supplier is obliged to adopt the **general conditions for the supply of water services** and act in accordance with them. The general conditions have the legal nature of the general conditions of the contract for the supply of water services. The general conditions must, *inter alia*, include: - the conditions for discharging waste water into the public sewerage system; - limit values for emissions of non-industrial wastewater discharged into the public sewerage system; - conditions for waste water discharge from individual drainage systems; - plan for discharge and monitoring of waste water from individual drainage systems. With regard to the provisions relating to the conditions for the discharge of waste water and the limit values for the emission of waste water, the public water service supplier is obliged to prepare a feasibility study and obtain a preliminary opinion of Hrvatske vode on their content.¹⁷³

¹⁶⁷ Art. 17-18 of the Water Services Act.

¹⁶⁸ Art. 19 of the Water Services Act.

¹⁶⁹ Art. 34 of the Water Services Act.

¹⁷⁰ Art. 22 of the Water Services Act.

¹⁷¹ Art. 32 of the Water Services Act.

¹⁷² Art. 63 of the Water Services Act.

¹⁷³ Art. 40 of the Water Services Act.

2.5.2.5. Water legal permit

As a rule, a water legal permit issued by Hrvatske vode is required for the discharge of waste water, which means that the public water service supplier must also obtain this legal act in order to be able to perform its activity. Water legal permit is a type of water law act, and by its legal nature it is an administrative act. So, the provisions of the General Administrative Procedure Act¹⁷⁴ shall apply to the procedure for issuing water legal permit, unless otherwise prescribed by the Waters Act. The competent Ministry shall decide on the appeal against water legal permit.

A water legal permit is required for each discharge of waste water for which the emission limit values are prescribed by the Ordinance on the Waste Water Emission Limit Values. Exceptionally, a water legal permit is not required for run-of rain waste water and for sanitary waste water up to 50 p.e.¹⁷⁵ that is discharged into a natural receiver *via* an individual drainage system, except in special cases of discharge of sanitary waste water from 10 to 50 p.e. into a natural receiver in a protected area.¹⁷⁶

All types of water legal permits, including the water legal permit for the discharge of urban wastewater, are regulated in detail by the Ordinance on the Issuance of Water Law Acts. The Ordinance prescribes three different types of water permits with regard to the criterion of the impact of waste water discharge on the achievement of water protection objectives (significant impact, limited impact, negligible impact). The manner of determining the significance of the impact of waste water discharges on the achievement of water protection objectives is prescribed by the Ordinance on the Waste Water Emission Limit Values and by the guidelines of Hrvatske vode.¹⁷⁷

A water legal permit for the discharge of urban waste water is issued for the public sewerage system in the area of one agglomeration, and one water legal permit for one party. The user of the water legal permit for the discharge of urban waste water can only be a public supplier of water services in whose service area the conceptual solution determines that urban waste water is treated at the central treatment plant.

¹⁷⁴ Official Gazette, No. 47/09 and 110/21.

¹⁷⁵ p.e. (population equivalent) means the organic biodegradable load having a five-day biochemical oxygen demand (BOD5) of 60 g of oxygen per day. Art. 4, paragraph 1, point 17 of the Waters Act; Art. 2, point 6 of the Urban Waste Water Directive.

¹⁷⁶ Art. 165 and 166 of the Waters Act.

¹⁷⁷ Art. 34 of the Ordinance on the Issuance of Water Law Acts.

The Ordinance on the Issuance of Water Law Acts regulates in detail the evidence that the parties must submit in order to issue a water legal permit for the discharge of waste water,¹⁷⁸ as well as the content of the permit.¹⁷⁹

In the process of obtaining water legal permit for waste water discharge party (which includes public supplier of water services) is obliged to examine the composition of waste water to the indicators from Table 1 of Annex 1 to the Ordinance on the Waste Water Emission Limit Values, through an authorized laboratory, for the purpose of detailed determination of indicators present in waste water.¹⁸⁰

The water legal permit is *ex officio reviewed* by Hrvatske vode at most once during the period of validity of the Water District Management Plan, for the following reasons: - in order to comply with the Water District Management Plan; - if significant changes in best available techniques (BAT), as regulated by environmental regulations, enable significant reductions in emissions to water and the aquatic environment, without imposing higher costs; - for the purpose of harmonization with the provisions national water regulations or directly applicable regulations of the European Union. In this procedure, the water permit may be revoked or amended *ex officio*, e.g. due to deterioration of the water body, because of non-exercise of rights or non-fulfillment of obligations under the water legal permit.¹⁸¹ In the procedure of review and harmonization of the water legal permit, the obligation to test the composition of waste water referred to in the Art. 13, paragraph 6 of the Ordinance on the Waste Water Emission Limit Values also apply, at least once during the period of validity of the Water District Management Plan.

As for all other water legal acts, Hrvatske vode has a competence to supervise whether the holders of the water legal permit act in accordance with the conditions from the permit and to report or inform the water legal inspection of deviations from issued water legal acts (so-called water supervision).¹⁸²

2.5.2.6. Decision on waste water drainage

According to the Art. 77 of the Waters Act, legal and natural persons are obliged to discharge waste water through urban drainage buildings, urban rainwater drainage buildings and individual drainage systems, in accordance with the ***decision on waste water drainage***.

¹⁷⁸ Art. 36-37 of the Ordinance on the Issuance of Water Law Acts.

¹⁷⁹ Annex IV of the Ordinance on the Issuance of Water Law Acts.

¹⁸⁰ Art. 13, paragraph 6 of the Ordinance on the Waste Water Emission Limit Values.

¹⁸¹ Art. 171-172 of the Waters Act.

¹⁸² Art. 199, paragraph 2, point 11 of the Waters Act; Art. 49 of the Ordinance on the Issuance of Water Law Acts.

The decision on waste water drainage is made by:

- representative body of the local self-government unit for agglomeration in the area of that unit;
- representative body of a regional self-government unit for agglomeration in the area of several local self-government units within the same regional self-government unit;
- Minister for agglomeration in the area of several units of regional self-government.

The decision on waste water drainage is made with the prior opinion of Hrvatske vode, at the proposal of the public water service supplier.

The Law on Waters prescribes the minimum content of the Decision on waste water drainage: - the method of drainage of waste water from a certain agglomeration and the area gravitating to it; - geographical data on places of discharge of waste water from the public sewerage system, including from rain overflows; - areas where waste water is allowed to be discharged from individual sanitary waste water drainage systems up to 50 p.e., specific determination of discharge conditions in that area in accordance with the Ordinance on the Waste Water Emission Limit Values, and conditions for waste water disposal from collection pits ; - allowed technical solutions of individual sanitary waste water drainage systems up to 50 p.e. per area, as a temporary solution until connection to the public drainage system, and/or as a permanent solution, in accordance with the Ordinance on technical requirements for waste water drainage buildings; - technical and technological conditions for connecting buildings and other real estate to urban rainwater drainage buildings and the manner and deadlines for connecting to those buildings; - the competence of individual suppliers of water services by areas, if the service is provided by several suppliers in the area; - obligation to connect to public drainage structures in accordance with the decision on connection and the general and technical conditions for the delivery of water services.

Supervision over the implementation of the Decision regarding the discharge of waste water into the public sewerage system is carried out by water wardens appointed by public supplier of water services, in accordance with the Water Services Act.¹⁸³

¹⁸³ Art. 81 of the Water Services Act.

2.5.2.7. Obligation to sample and test the composition of wastewater; authorized laboratories

All legal and natural persons who are obliged to have a water legal permit for waste water discharge according to the provisions of the Waters Act,¹⁸⁴ are obliged to ensure regular sampling and testing of waste water composition. They are also obliged to keep a register on sampling and testing and to regularly submit to Hrvatske vode data on sampling and testing.¹⁸⁵

The Ordinance on the Waste Water Emission Limit Values regulates the methodology of sampling and testing of wastewater composition, frequency of sampling and testing, relevance of sample, form of the register of discharged waste water and manner of its management, deadlines and forms of submitting data to Hrvatske vode. According to the Ordinance on the Waste Water Emission Limit Values, the rules on sampling and testing of waste water differ depending on the type of waste water.

In the case of **industrial waste water**, the general rule of the Waters Act applies, according to which persons who, in the course of economic or other business activity, introduce, discharge or dispose of hazardous or other pollutants into water, are obliged to partially or completely dispose of these substances before discharge into public sewage buildings or other receivers in accordance with the issued water permit, or an environmental permit.¹⁸⁶ Before discharge of treated and/or untreated industrial waste water into the public sewerage system, pollutant is obliged to perform sampling from the current or composite sample, or in other way if it is determined by the water permit for waste water discharge. Sampling is performed during the discharge of industrial waste water at the marked control shaft immediately before the discharge of treated and/or untreated waste water into the public sewerage system. Composite sampling of waste water is performed every hour.^{187; 188}

Pollutants who discharge industrial waste water from the technological process with a significant load on the receiver are obliged to have, use, maintain in good condition a device for measuring water flow

¹⁸⁴ Or an obligation to have an environmental permit according to special environmental regulations.

¹⁸⁵ Art. 75, paragraph 1 and Art. 76, paragraph 1 of the Waters Act.

¹⁸⁶ Art. 71 of the Waters Act.

¹⁸⁷ Art. 13, paragraph 1 of the Ordinance on the Waste Water Emission Limit Values.

¹⁸⁸ Similar rules apply to the sampling of treated and/or untreated industrial and other wastewater before discharge into surface water and, exceptionally, into groundwater if that is permitted by a water legal permit for the discharge of wastewater or by decision on an environmental permit according to environmental laws. (Art. 13, paragraph 2 of the Ordinance on the Waste Water Emission Limit Values).

and a device for automatic sampling, and to make it available at all times for water supervision conducted by Hrvatske vode.¹⁸⁹

In the case of **urban waste water treatment plants**, the test is performed on samples proportional to the flow or to the time. Sampling is performed at a permanently marked place at the outlet of the device. Sampling is performed every hour during the sampling period prescribed in Table 4 of Annex 1 to the Ordinance. In order to determine the achieved load reduction, sampling is performed in the same way at the entrance to the urban waste water treatment plant. At the place of discharge from the public sewerage system for which the water legal permit for waste water discharge prescribes the obligation to monitor the composition of waste water, the tests must include at least the indicators from Tables 2 and 2.a. Annex 1 to the Ordinance, regardless of what is prescribed in the water legal permit for the discharge of waste water.¹⁹⁰ Extreme values of indicators on urban waste water treatment plant will not be taken into account if they are the result of emergencies, such as high rainfall.

The minimum number of annual samples for testing urban waste water is set out in Table 4 of Annex 1 to the Ordinance on the Waste Water Emission Limit Values, and depends on the size of the urban waste water treatment plant.

In order to determine the achieved degree of treatment at the urban waste water treatment plant, Hrvatske vode evaluates the operation of the plant independently of the prescribed water legal permit for waste water discharge, based on the results of testing the composition of waste water exclusively from composite samples taken during one calendar year.¹⁹¹

As already pointed out, the obligation to test the composition of waste water applies also in the process of issuing a water permit, as well as in the process of its revision. Besides, that obligation applies when changes in the location of pollutants require the amendment or issuance of a new act regulating the discharge of waste water.¹⁹²

¹⁸⁹ Art. 75, paragraph 4 of the Waters Act.

¹⁹⁰ Art. 13, paragraphs 4 and 5 of the Ordinance on the Waste Water Emission Limit Values.

¹⁹¹ Art. 13, paragraph 15 of the Ordinance on the Waste Water Emission Limit Values.

¹⁹² Art. 13, paragraphs 6 and 7 of the Ordinance on the Waste Water Emission Limit Values.

Sampling and testing of waste water composition is performed by **authorized laboratories**.¹⁹³ Which laboratories are authorized for this activity is determined by the Ordinance on special conditions for performing the activity of sampling and testing of water.¹⁹⁴ This Ordinance prescribes special conditions for performing activities of sampling and testing of water,¹⁹⁵ according to special regulations, and in particular: - technical equipment; - number and expertise of employees; - technical specifications for testing and monitoring of water, sediment and biota and pollutant emissions in waste water: - minimum performance requirements for methods of analysis used in the testing and monitoring; - rules for proving the quality of analytical results.

The procedure for determining the fulfillment of special conditions (which is an administrative procedure) is conducted by the Ministry through an expert commission, appointed by the Minister. The procedure ends with the issuance of a decision on fulfillment of special conditions.¹⁹⁶ The Ministry keeps a publicly available register of authorized laboratories. A List of decisions on fulfillment of special conditions for performing water sampling and water testing activities, updated on 31 August 2021, is currently published on the Ministry's website.¹⁹⁷

2.5.2.8. Emission limit values

In accordance with the Urban Wastewater Directive, the Waters Act¹⁹⁸ and the Ordinance on the Waste Water Emission Limit Values regulate emission limit values¹⁹⁹ for pollutants in industrial waste water before their discharge into the public sewerage system and in all treated or untreated waste water discharged into water.

¹⁹³ Art. 75, paragraph 2 of the Waters Act.

¹⁹⁴ Official Gazette, No. 3/20.

This Ordinance transposed into the legal order of the Republic of Croatia Commission Directive 2009/90/EC of 31 July 2009 laying down, pursuant to Directive 2000/60/EC of the European Parliament and of the Council, technical specifications for chemical analysis and monitoring of water status (Text with EEA relevance), OJ L 201.

¹⁹⁵ Except water for human consumption.

¹⁹⁶ The conditions must be met at all times while this decision is in force.

¹⁹⁷ Available at website:

[https://mingor.gov.hr/UserDocImages/Uprava_vodnoga_gospodarstva_i_zast_mora/Certifikacijska_rjesenja_dozvole_i_laboratorijska%20ovlastenja/31.%2008.%202020.%20-%20%20A%C5%BDURIRANI%20POPIS%20\(O%C4%8CEVIDNIH\)%20OVLVA%C5%A0TENIH%20LABORATORIJA.pdf](https://mingor.gov.hr/UserDocImages/Uprava_vodnoga_gospodarstva_i_zast_mora/Certifikacijska_rjesenja_dozvole_i_laboratorijska%20ovlastenja/31.%2008.%202020.%20-%20%20A%C5%BDURIRANI%20POPIS%20(O%C4%8CEVIDNIH)%20OVLVA%C5%A0TENIH%20LABORATORIJA.pdf)

¹⁹⁸ Art. 70 of the Waters Act.

¹⁹⁹ Art. 4, paragraph 1, point 22 of the Waters Act defines emission limit values: emission limit value is the mass, expressed in relation to certain specific indicators, concentration and / or emission level, which may not be exceeded in one or more periods; emission limit values can also be set for certain groups or categories of substances.

By the Ordinance emission limit values are prescribed for individual pollutants or groups of pollutants:
- in industrial waste water before its discharge into public sewerage plants or into an individual drainage system; - in all treated or untreated waste water discharged into water.

Limit values for emissions of waste water discharged into water or into the public sewerage system are determined by the permitted concentrations of pollutants and/or by loads in waste water.²⁰⁰ For the treated urban waste water discharged into water, in addition to the concentrations of pollutants and/or loads in wastewater, it is necessary to determine the percentage of pollution reduction at the waste water treatment plant.²⁰¹ The limit values for waste water emissions are set out in Tables 1, 2, 2a, 2b of Annex 1 and Annexes 2 to 23 of the Ordinance on the Waste Water Emission Limit Values.

In accordance with the Urban Waste Water Directive, the Ordinance sets limit values for industrial waste water which are discharged into the public sewerage system or into the water, for 22 individual industries.²⁰² It also regulates the possibility of introducing other specific indicators.

Like the Waters Act, the Ordinance also prescribes the obligation of pre-treatment of industrial waste water before discharge into the public sewerage system, and, in accordance with the Annex I C of the Urban Waste Water Directive, defines the objectives of pre-treatment.²⁰³

According to the Ordinance, the **prescribed degree of urban wastewater treatment depends on the agglomeration load and the type of area.**²⁰⁴ The agglomeration load expressed in p.e. is calculated on the basis of the maximum average weekly load that comes to the wastewater treatment plant during the year, excluding emergencies such as high rainfall intensity. Seasonal load variations should also be taken into account when defining device loads.²⁰⁵

- a) Art. 7, paragraph 1 of the Ordinance stipulates that urban waste water is collected, drained and treated *in principle* on a device with the **second stage (II) of treatment.**²⁰⁶ But Art. 7,

²⁰⁰ 'Load' is the mass of the emission per unit of time.

²⁰¹ Art. 4, paragraph 1 of the Ordinance on the Waste Water Emission Limit Values.

²⁰² Annexes 2 to 23 of the Ordinance on the Waste Water Emission Limit Values.

²⁰³ Art. 4, paragraph 7 of the Ordinance on the Waste Water Emission Limit Values prescribes that pre-treatment should: - prevents damage to the public drainage system; - does not interfere with the operation of the waste water treatment plant; - ensure that discharges from waste water treatment plants do not have an adverse effect on the environment; - ensure the use and/or disposal of sludge in an environmentally sound manner; - ensures the protection of the health of workers working in that system.

²⁰⁴ Art. 7, paragraphs 1, 2, 10-17 of the Ordinance on the Waste Water Emission Limit Values.

²⁰⁵ Art. 7, paragraph 8 of the Ordinance on the Waste Water Emission Limit Values.

²⁰⁶ Art. 3, point 3 of the Ordinance on the Waste Water Emission Limit Values: Second stage (II) of treatment is the treatment of municipal waste water by a process that generally includes biological treatment with secondary sedimentation and/or other processes that meet the requirements of Table 2 of Annex 1 to the

paragraph 2 provides for a certain transitional period during which this requirement need not be complied with. Namely, until the construction and putting into function of the device with the second degree of waste water treatment and sludge treatment, the discharge of municipal waste water is temporarily allowed, but with the examination of the composition of waste water on certain indicators and with continuous monitoring of the amount of waste water discharged from the public sewerage system. The deadlines for this temporary permitted discharge of municipal waste water are determined differently, depending on the agglomeration load and the type of the area.²⁰⁷ After the expiration of the deadline, the prescribed obligations on emissions of pollutants in waste water are applied for the required degree of treatment, regardless of the state of construction of public sewerage buildings.

- b) Urban waste water from public sewerage systems of agglomerations with a load of less than 2,000 p.e., regardless of the sensitivity of the area, and agglomerations with a load of 2,000 to 10,000 p.e. that wastewater discharges into coastal waters not declared a sensitive area shall be treated by **appropriate treatment**. Appropriate treatment means the treatment of urban waste water by any process and/or method of discharge, including submarine discharges, that allows the receiver to meet environmental objectives. The level of wastewater treatment with appropriate treatment may be lower than the first stage (I) of treatment, with mandatory application of procedures to remove larger dispersed substances and floating substances, including volatile lipophilic substances, from wastewater.
- c) Urban waste water from the public sewerage system before discharge into water in a **sensitive area** is treated by **third stage (III) of treatment**²⁰⁸ for discharges from agglomerations with a load greater than 10,000 p.e., and by **second stage (II) of treatment** for discharges from agglomerations with a load of 2,000 to 10,000 p.e.

2.5.2.9. Supervision

In the Croatian legal system, supervision over the implementation of norms governing water in general, and thus also the protection of water from pollution, is carried out through administrative supervision and inspection supervision.

Ordinance on the Waste Water Emission Limit Values. (‘secondary treatment’ in the terminology of Art. 2, point 8 of the Urban Waste Water Directive).

²⁰⁷ Art. 17 of the Ordinance on the Waste Water Emission Limit Values.

²⁰⁸ Art. 3, point 4 of the Ordinance on the Waste Water Emission Limit Values: Third stage (III) of treatment is stricter treatment of urban waste water by the procedure by which the second stage of treatment meets the requirements for and/or phosphorus and/or nitrogen from Table 2. a of Annex 1 to the Ordinance, and/or microbiological indicators and/ or other pollutants in order to protect sensitive areas.

Administrative supervision over the implementation of the Waters Act and all regulations adopted on the basis of this Act and over the legality of work and actions of state administration bodies, bodies of local and regional self-government units and legal entities with public authority in state administration tasks, is exercised by the competent Ministry.²⁰⁹ In this sense, the Water Services Act stipulates that administrative supervision over local and regional self-government units and Hrvatske vode in the exercise of public authority on the basis of this Act and regulations adopted on the basis of the Act is performed by the Ministry. Water policy, including water protection, is currently in the competence of the Ministry of Economy and Sustainable Development.

The Ministry is authorized in administrative supervision to invite the supervised person to harmonize its acts with the Waters Act and the implementing regulation adopted on the basis thereof, and to annul or revoke the first instance decision issued on the basis of the said regulations, in principle for reasons prescribed by the law governing the general administrative procedure.

Inspection supervision²¹⁰ over the application of the provisions of the Waters Act and regulations adopted on the basis thereof is carried out by the state administration body responsible for inspection activities, State Inspectorate, by its organizational unit competent in the field of water management (so-called Water legal inspection)²¹¹, except when otherwise regulated by the Waters Act. The Water legal inspection is part of the Sector for environmental protection supervision, nature protection and water management supervision within the State Inspectorate.²¹²

The Water law inspection supervises the activities of Hrvatske vode, except for those activities that Hrvatske vode performs as public authorities. These, *inter alia*, are: - keeping water documentation and a common water information system and issuing water legal acts in accordance with the Waters Act; - professional supervision over the implementation of conditions from water legal acts (water supervision); - calculation and collection of water fees in accordance with the law governing the financing of water management.

²⁰⁹ Art. 213 of the Waters Act.

²¹⁰ Art. 214-222 of the Waters Act; Art. 79-80 of the Water Services Act.

²¹¹ The Regulation on the Internal Organization of the State Inspectorate (Official Gazette Nos. 97/20, 119/20 and 104/21) regulates the internal organization of the State Inspectorate, the names of administrative organizations and other internal organizational units in its composition.

²¹² It consists of Service for coordination of supervision of water use and water resources and Water Protection Supervision Coordination Service (Art. 105 and 106 of the Regulation on the Internal Organization of the State Inspectorate).

The Water law inspectorate is also not supervising the activities of the units of local and regional self-government in the exercise of their public authorities of adopting general acts on the basis of the Waters Act and resolving administrative matters on the basis of this Act.

If the water law inspector finds that the provisions of the relevant regulations have been violated, he is obliged to issue a decision ordering the elimination of identified deficiencies or irregularities and determining measures and deadlines for their elimination. The measures include, *inter alia*: - to prohibit or restrict the discharge of hazardous or other pollutants into water, which are discharged in violation of relevant regulation; - to order the taking of measures for the purification of polluted waters and the elimination of the causes of pollution; - to order the elimination of damages and the restoration of the previous condition.

PART 2: ITALIAN LEGAL FRAMEWORK

1. *The protection of water*

The relevant state regulation for this project is contained largely in Legislative Decree 152/2006 “Environmental regulations”, which implemented numerous European directives, first and foremost directive 2000/60/EC, which institutes a framework for community action on the subject of water. In fact, Part III of the legislative decree deals with all the aspects related to the “water” resource and is subdivided into three sections: **standards on defending the soil and combating desertification. The second section aims at protecting water from pollution, and the third regulates managing water resources. The sections that deal directly with the Interreg project, namely the activities of water catchment, distribution, recovery, and purification, are primarily the second ones, on the regulation of discharges, and the third for the organization of the “integrated water system” (IWS). In any case, the entire regulation on the subject is based on a specific assumption:** all the surface and underground waterways, although not extracted from the subsoil, belong to the State. Therefore, they are exclusive and inalienable public property and use, other than human consumption is permitted within the limits in which the water resources are sufficient and on the condition that they do not compromise the quality thereof.

On the subject of protecting the waters from pollution, the State maintains the general jurisdiction of setting minimum standards. In fact, in addition to some operational and authorization tasks, the State is also responsible for setting the emission limit values of polluting substances and agents, as well as the minimum quality objectives of bodies of water, the determination of the criteria for forming and updating the waste registers and the lists of hazardous substances, determining of the conditions and limits of use of hazardous products and materials, issuing general technical standards to regulate sewage and sludge disposal operations, drafting informative data on the quality of the waters destined for human consumption, and executing substitutive powers in the event of ascertained inactivity of the regions or local bodies.

Residually, the regions and local agencies are responsible for all the functions not attributed to the State and, specifically, keeping and updating the list of surface fresh water and shellfish waters, monitoring the production, use, the persistence in the environment, and the impact on human health of the substances admitted for the production of washing solutions, as well as monitoring the condition

of eutrophication of inland and coastal waters.

The regions are also responsible for defining an initial list of the urban wastewater purification plants, the discharge of which must comply with certain quality requirements and identifying the qualitative and technical standards for each plant, based on its destination.

The environmental code charges the regions with the obligation to disclose the information inherent to the water quality condition and to transmit the cognitive data and information on the implementation of the relative regulation to the ISPRA (*Higher Institute for Environmental Protection and Research*) inland and marine waterways protection department. In the same way, the participation of all parties involved should be favored in the implementation of the regulation provided for by the code, particularly concerning the drafting and updating of the waterway protection plans.

Of the main functions attributed to the regions, we should remember the arrangement of programs to bring the quality of the waterways up to the quality goals for the specific destination, as well as the lists of these waterways, the designation and classification of the fresh waterways that require protection or improvement to be suitable for fish, including the possibility of derogating to the parameters established by the law in the event of particular geographic conditions, namely exceptional meteorological survival, the adoption of a regulation relating to exceptions with respect to the predefined standards on surface waters destined for the production of potable water, as long as it is within the limits in which it does not imply a hazard to public health and only in the situations expressly envisaged by the national regulation such as, for example, floods and natural catastrophes.

On the subject of water resource management, the code assigns to the regions the respective territory's government regulation and the adoption of standards intended to rationalize consumption and eliminate waste. In particular, the regions must identify the territorial ambit bodies (OTAMB) with a resolution and define the delimitations of the optimal territorial ambits (OTA) which the water services are based on.

For about the last ten years, the functions of regulation and control of water services previously carried out by the Ministry of the environment and the National commission of vigilance of water resources (CoNViRI), instituted by the same ministry, have been transferred to the ARERA (Regulatory Authority for Energy, Networks, and Environment). In addition to the task previously attributed to the regions relative to the preparation of the standard agreements for the regulation of relationships between territorial ambit bodies and mandated parties of the integrated water service, ARERA defines the cost components to determine the tariff (see *infra*) in compliance with the criteria established by the

Ministry of the environment and approves the tariffs proposed by the relevant party based on the ambit plan.

Before proceeding with the analysis of these provisions, we must, nevertheless, illustrate how the public authorities are organized on the territory. In fact, the entire national territory is subdivided into “hydrographic districts”, each of which is made up of “hydrographic basins” of the respective waterways. The “hydrographic district” is the area of land and sea made up of one or more bordering hydrographic basins and the respective underground and coastal waterways that constitute the main unit for management of the hydrographic basins. The “hydrographic basin”, on the other hand, is the territory in which all the surface waterways flow through a series of streams, rivers and lakes into the sea or a single outlet, estuary, or delta.

The following are the relevant hydrographic districts for this project:

- 1) hydrographic district of the eastern Alps, including the hydrographic basins of Adige, Alto Adriatico, the basins of Friuli Venezia Giulia and Veneto, Lemene;
- 2) hydrographic district of the Po River, including the hydrographic basins of Po, Reno, Fissero Tartaro Canalbianco, Conca, Lamone, Fiumi Uniti (Montone, Ronco), Savio, Rubicone and Uso, the minor basins pertaining to the Romagna coast;
- 3) hydrographic district of the central Appennine, limitedly to the rivers that flow into the Adriatic - Tronto, Sangro, the basins of Abruzzo, Potenza, Chienti, Tenna, Ete, Aso, Menocchia, Tesino and the minor basins of the Marche, Foglia, Arzilla, Metauro, Cesano, Misa, Esino, Musone and other minor basins
- 4) hydrographic district of the southern Appennine, limitedly to the rivers that flow into the Adriatic - Saccione, Fortore and Biferno, Ofanto, Trigno, the basins of Puglia, the basins of Molise.

In each hydrographic district, the district basin authority is established (also called “basin authority”), a non-economic public body that operates in accordance with criteria of efficiency, effectiveness, affordability, and publicity and exercises a series of responsibilities set forth by the “environmental code”.

The government organ of the district basin authority is the permanent institutional conference in which representatives of the state participate (including the Ministry of the environment – ecological transition, the Ministry of the infrastructures, etc.) and the presidents of the involved regions (or their delegates). The conference identifies the criteria and methods for drafting the district basin plan and adopts it on the opinion of the operating conference.

The district basin plan is valid as a sector territorial plan and is the cognitive, regulatory, and technical-operational instrument through which the actions and standards for use are planned and programmed for the purpose of preservation, defense, and enhancement of the soil and the correct use of the waterways, based on the physical and environmental characteristics of the involved territory. The requirements of the district basin plan are of an immediately binding nature for local governments, public bodies, and private bodies as qualified by the plan itself.

In the text of European directives and in the laws that implement them, some terms are used with a particular technical meaning.

It is therefore useful to indicate some of these, relevant to the subject of this analysis, because they will occur several times:

- surface water means inland waters, except groundwater, transitional waters and coastal waters, except in respect of chemical status for which it shall also include territorial waters;
- transitional waters are bodies of surface water in the vicinity of river mouths which are partly saline in character as a result of their proximity to coastal waters but which are substantially influenced by freshwater flows;
- coastal waters mean surface water on the landward side of a line, every point of which is at a distance of one nautical mile on the seaward side from the nearest point of the baseline from which the breadth of territorial waters is measured, extending where appropriate up to the other limit of transitional waters;
- body of surface water means a discrete and significant element of surface water such as a lake, a reservoir, a stream, river or canal, part of a stream, river or canal, a transitional water or a stretch of coastal water;
- water intended for human consumption has the same meaning as under the directive 80/778/EEC, as amended by directive 98/83/EC: (a) all water either in its original state or after treatment, intended for drinking, cooking, food preparation or other domestic purposes, regardless of its origin and whether it is supplied from a distribution network, from a tanker, or in bottles or containers; (b) all water used in any food-production undertaking for the manufacture, processing, preservation or marketing of products or substances intended for human consumption unless the competent national authorities are satisfied that the quality of the water cannot affect the wholesomeness of the foodstuff in its finished form;
- domestic wastewater: wastewater from residential settlements and services and deriving mainly from human metabolism and domestic activities;

- industrial waste water: any type of waste water discharged from buildings or plants in which commercial activities or the production of goods take place, other than domestic waste water and run-off rainwater;
- urban wastewater: domestic wastewater or the mixture of domestic wastewater, industrial wastewater or run-off rainwater conveyed into sewer networks, even separate ones, and coming from agglomerations;
- agglomeration: the area in which the population, or production activities, are concentrated to such an extent as to make the collection and conveyance of urban waste water admissible, both technically and economically in relation to the achievable environmental benefits as well to a processing system or to a final delivery point;
- waste water: all waste water from a drain;
- pollution means the direct or indirect introduction, as a result of human activity, of substances or heat into the air, water or land which may be harmful to human health or the quality of aquatic ecosystems or terrestrial ecosystems directly depending on aquatic ecosystems, which result in damage to material property, or which impair or interfere with amenities and other legitimate uses of the environment;
- eutrophication: enrichment of water with nutrients, in particular nitrogen and / or phosphorus compounds, which causes an abnormal proliferation of algae and / or higher forms of plant life, causing the disturbance of the balance of organisms present in the water and the quality of the water concerned;
- environmental quality standard means the concentration of a particular pollutant or group of pollutants in water, sediment or biota (i.e. the complex of plant organisms, animals, etc. that occupy a certain area in an ecosystem) which should not be exceeded in order to protect human health and the environment;
- equivalent inhabitant: the biodegradable organic load having a 5-day biochemical oxygen demand equal to 60 grams of oxygen per day;
- discharge: any injection carried out exclusively through a stable collection system that seamlessly connects the wastewater production cycle with the surface water receiving body, on the ground, in the subsoil and in the sewerage system, regardless of their polluting nature, also subject to preventive purification treatment;
- sewerage a system of pipes for the collection and conveyance of urban wastewater;
- water services means all services which provide, for households, public institutions or any economic activity: a) abstraction, impoundment, storage, treatment and distribution of surface

- water or groundwater; b) waste-water collection and treatment facilities which subsequently discharge into surface water;
- sludge: treated or untreated residual sludge from urban waste water treatment plants;
 - appropriate treatment is the treatment of urban waste water by means of a process or a disposal system that after discharge guarantees the compliance of the receiving water bodies with the related quality objectives or complies with the provisions of the Environmental Code, Part III;
 - primary treatment is the treatment of waste water which involves the sedimentation of suspended solids by physical, chemical or other processes as a result of which, before discharge, the BODS of the water being treated is reduced by at least 20% and the total suspended solids by at least 50%;
 - BODS: the biochemical oxygen demand that indicates the oxygen requirement of a water to oxidize the degradable organic substances present in it, by aerobic microorganisms;
 - secondary treatment is the treatment of waste water by a process that generally involves biological treatment with secondary sedimentation or by another process in which the requirements indicated in Table 1 of Annex 5, III Part III of the Environmental Code are nevertheless respected the emission limits of water discharges into surface water bodies.

The goals that the general regulation for the protection of surface and marine (and underground) waterways sets to pursue are preventing and reducing pollution, restoring polluted bodies of water, improving the condition of the waterways, protecting those destined for particular uses promoting sustainable and lasting uses with priority for the potable ones, maintaining the natural self-purifying capacity of the bodies of water, and sustaining broad and diversified animal and plant communities, protecting the territorial and marine waterways achieving the goals of international agreements, including those aimed at impeding and eliminating pollution of the marine environment for the purpose of arresting or gradually eliminating discharges, hazardous substance emissions and leaks, improving the condition of the aquatic, land, and wetland ecosystems.

Because the primary goal is to protect the waterways from pollution, the regulation focuses first and foremost on disciplining water discharges, beginning from those that converge the waterways used towards purification plants. Greatly simplifying and considering the goals of the Interreg Project, this complex subject can therefore be subdivided into two parts. The first, related to defending against pollution and improving the quality of water, aims at disciplining discharges. The second, in any case connected to the first, deals with purification in the area of the integrated water system.

2. The regulation of discharges

The notion of discharge covered by the European regulation is particularly broad. Directive 76/464/EC defines discharge as the introduction of the substances listed in a specific attachment, therefore the court has included in this notion any act attributable to a subject through which, directly or indirectly, one of these substances is introduced into the waterways the directive applies to. The national legislation has attempted to overcome the application contrasts originating from the distinction between direct and indirect discharges, dictating a particularly restrictive notion of discharge. According to this notion, this includes any direct introduction through liquid and semi-liquid wastewater lines and, in any case, which can be channeled into the surface waters, the soil, the subsoil, and the sewage system, independently of their polluting nature, even subjected to preventive purification treatment.

In general, the provisions aimed at disciplining the discharges set water quality standards. In these cases, the regions can only define more elevated parameters, not more permissive, and may identify further distinctions of the bodies of water, to which to reconnect specific quality objectives. The limits in question are indicated in the Tables of Attachment 5, III Part of the environmental code.

So, to determine the good chemical condition of surface waterways, the EQS (environmental quality standards) are applied in accordance with the pre-established methods, which indicate the concentration of a particular pollutant or group of pollutants that must not be exceeded in the waterways, in the sediment, and in the biota, for the purpose of protecting human health and the environment (see Table 1/A and 2/A). The national inventory of diffuse source release, discharges, and leaks is also drafted, based on the data communicated from the regions in accordance with pre-established and uniform methods, validated pursuant to the UNI-EN ISO/CEI - 17025:2005 standard or other equivalent, internationally accepted standards, in order to achieve comparable average values. In the event that particular substances are present, indicated in Attachment 1 to Part III, the management plans can contain supplementary maps which present, separately with respect to the information on the other substances, specific information on the chemical condition.

Also, on the subject of environmental quality goals, different provisions deal with the characteristics and use of waterways depending on the respective specific destinations, distinguishing between the surface waterways destined for the production of potable water, the waterways destined for the extraction of potable water, the waterways destined for bathing, the waterways that are a suitable habitat for fish, and the waterways destined to be a habitat for shellfish.

The environmental code also provides for the criteria based on which to identify areas that require

particular attention in preventing pollution, the “sensitive areas”, which include the coastal waters of the northern Adriatic. In these areas, the discharges are subject to particular provisions (see below). And, in the same way, the “areas vulnerable to nitrates from agriculture” are promptly identified based on criteria indicated in a series of attachments. Some areas in Veneto and Emilia Romagna are included in these and worth a mention. These lists are updated periodically at the proposal of the regions involved based on surveys carried out.

The overarching principle of the regulation on discharges contemplates preventive authorization to undertake any activity that implies a discharge. Domestic wastewater discharges into sewage systems for which compliance with the regulations set by the integrated water service provider and approved by the territorial ambit body are exempt from the authorization requirement.

All discharges must be authorized and the authorization is issued to the owner of the activity from which the discharge originates.

The authorization procedure is defined by the regions in observance of the mentioned limits, although the domestic wastewater discharges into sewage systems are always permitted in observance of the regulations set by the integrated water service provider and approved by the territorial ambit body (OTAMB).

The regions also govern the provisional authorization stages for discharges of wastewater purification plants for the time necessary for launching them or, if already in operation, for carrying out operations on the plants for the purpose of complying with the obligations required by the EU, or for their upgrade, restructuring, or decommissioning.

The authorization is effective for four years from the time of issue. One year prior to the expiry, renewal must be requested. In the meantime, if the renewal request was submitted promptly, the discharge can be maintained temporarily based on observance of the requirements contained in the previous authorization until the implementation of a new provision. For discharges containing hazardous substances, renewal must be granted expressly within and no later than six months from the expiry date. Once this period has passed without renewal, the discharge must cease immediately. The regional regulation can also anticipate forms of tacit renewal of authorization for specific types of domestic wastewater discharges.

As always, the authorization can contain specific technical requirements aimed at guaranteeing that the discharge takes place in compliance with the legal provision and without any consequential compromise to the receiving body, for public health, and for the environment.

More in detail, the effective general rules should be remembered which require that all discharges

observe the limit values set forth in Attachment 5 and that the waters are returned with qualitative characteristics not worse than those taken and without increases of flow to the same body of water from which they were taken. For a range of substances, only specific exceptions are permissible, accompanied by suitable prescriptions for the start and stop periods, for the eventuality of faults, and for the transitory periods needed for the return to standard conditions. As already mentioned, the regions can define different emission limit values, both in maximum permitted concentration and in maximum quantity per unit of time, concerning each polluting substance or for groups of similar substances, but never less restrictive than those set forth in Attachment 5. Furthermore, the emission limit values may not in any case be obtained through dilution with waters taken exclusively for this purpose.

In the discharges, domestic wastewater is collected (see definitions), as well as the waters assimilated to it, namely the wastewater:

- a) coming from companies dedicated exclusively to cultivating the soil and/or forestry;
- b) coming from companies dedicated to raising livestock corresponding to determined characteristics set forth by the code;
- c) coming from companies dedicated to the same activities that also exercise activities of agricultural production transformation, with raw materials coming primarily from the activity of farming land;
- d) coming from aquaculture and fish-farming plants with determined quantitative characteristics;
- e) water with quality characteristics equivalent to domestic water;
- f) coming from thermal activity;
- g) vegetation wastewater from oil presses.

These provisions are valid for introduction in discharges, but it should be remembered that the law also governs discharges into the soil, the subsoil, and underground waterways.

Further provisions deal with the discharge of particular type of wastewater.

The authorization request for industrial wastewater discharges must be accompanied by the indication of the quantitative and qualitative characteristics of the discharge and the annual volume of water to be discharged, the type of receiving body, the identification of the point anticipated for carrying out monitoring withdrawals, the description of the overall discharge system, the measurement system of the flow of the discharges, and the indication of the equipment used in the production process and discharge systems. It must also include the purification system used to achieve the observance of the emission limit values.

The industrial wastewater discharges in surface waterways must also respect the emission limit values

set by the law based on pursuing the quality objectives.

Other provisions diversify the regulation depending on the setting in which the discharge is carried out and, for the interest of this study, the requirements for discharge in surface waterways should be considered, the “category” of waters which also includes the sea.

In this sense, the urban wastewater discharges that converge in sewage systems coming from agglomerates with fewer than 2,000 equivalent inhabitants (see definitions) and arriving in fresh water and transition water, and discharges coming from agglomerates with fewer than 10,000 equivalent inhabitants, arriving in coastal-marine waters, are subject to an appropriate treatment (see definitions), as indicated by Attachment 5. In other cases, the wastewater must be subjected prior to discharge to a secondary treatment (see definitions) or an equivalent treatment, also in compliance with the indications of Attachment 5. These discharges must also respect the predetermined emission limit values. Bear in mind that the regions regulate sewage system discharges coming from high seasonal inhabitant fluctuation in a specific way, in other words, tourist areas such as, in Friuli Venezia Giulia, Grado and Lignano. Whereas the discharges of urban wastewater in bodies of water that fall within sensitive areas coming from agglomerates with more than 10,000 equivalent inhabitants must be subjected to a stricter treatment than the secondary or equivalent one.

Nevertheless, these provisions do not apply in the sensitive areas where it can be demonstrated that the minimum reduction percentage of the overall incoming load to all the urban wastewater treatment plants is at least seventy-five percent for the total phosphorus or for at least seventy-five percent for the total nitrogen.

Concerning discharges in the sewage systems, the domestic wastewater discharges should be distinguished from industrial wastewater discharges. The former is always permitted as long as they observe the regulations issued by the integrated water service provider and approved by the ambit authority. The latter are subject to technical regulations, the regulatory requirements, and the limit values implemented by the ambit authority based on the characteristics of the plant in order to ensure the protection of the body of water receiving the urban wastewater discharges. In any case, waste disposal in the sewage system is not permitted, even if ground up, with the exception of organic waste coming from food scraps treated with food waste disposals that reduce the mass into thin particles, after ascertaining the existence of a purification system on the part of the integrated water service provider. The regions can establish integrative regulations to monitor the discharges of civil and production plants connected to the public sewage systems.

Wherever a discharge may stem from the transfer, expansion, or restructuring of settlements, buildings, or plants with characteristics that are different in terms of quality or quantity from those of a pre-existing discharge already authorized, a request for new authorization must be submitted, as long as the new discharge falls under the category of those authorization is required for. If the new discharge does not change with respect to the previous one, an element of simplification is envisaged, because notifying the relevant authority is sufficient. The latter, after verifying the compatibility of the discharge with the receiving body, adopts any measures that may be necessary. The regulation on discharges is then further detailed based on the various types of discharge.

For the plants subject to the integrated environmental authorization (IEA) regulation, on the other hand, there is a switch from a sector authorization situation to an integrated situation. Integrated environmental authorization considers different methods of impact of the plant on the environment, substituting and absorbing the various sector authorizations, including those for discharge. Under this profile, it also constitutes an instrument of bureaucratic simplification for the companies. For existing and new state jurisdiction plants, integrated environmental authorization is issued by the Ministry of the environment, whereas for other plants, it is issued by the authority identified by the region.

Concerning the treatment of waste at urban wastewater treatment plants, reiterating the prohibition to use urban wastewater treatment plants for waste disposal, the presiding authority is nevertheless permitted, in agreement with the ambit government, in relation to particular needs and within the limits of the residual treatment capacity, to authorize the integrated water service provider to dispose of liquid waste in the urban wastewater treatment plant, limitedly to the types compatible with the purification process. The integrated water service provider is, in any case, authorized to accept the waste and materials indicated below at plants with adequate purifying capacity and characteristics, as long as they come from their own OTA or another OTA, if not equipped with adequate plants:

- a) waste made up of wastewater that complies with the limit values established for discharge into the sewage system;
- b) waste made up of materials coming from routine maintenance on domestic wastewater treatment systems;
- c) materials stemming from routine maintenance on the sewage system and from other urban wastewater treatment plants where further treatment is technically or economically not feasible.

Obviously, particularly detailed and complex specific regulations are dedicated to hazardous substance discharges, for which constant reference is made to the Tables in Attachment 5.

First and foremost, the code defines the subjective area of application, anticipating that the provisions on hazardous substance discharges apply to the plants where operations are carried out which imply the production, transformation, or use of the substances in Tables 3/A and 5 and where the presence of it is ascertained in its discharges in quantities or concentrations greater than the limits of detection permitted by the detection methods outlined pursuant to Attachment 5. Secondly, the authorization measure is regulated in such a way so that, taking into account the toxicity, the persistence, and the bioaccumulation of the considered substance in the environment where the discharge is carried out, when issuing the authorization, the presiding authority establishes more restrictive emission limit values than those established in accordance with the general criteria. This is done in the cases where it is ascertained that the limit values impede or compromise achieving the quality objectives set forth in the protection plan (see below) even due to the presence of other hazardous substance discharges. For the substances stemming from the production cycles indicated in Table 3/A, the authorizations also establish the maximum quantity of the substance expressed in units of weight by units of element characteristic of the polluting activity and, therefore, by raw material or by unit of product.

The presiding authority can require that the partial discharges containing the substances on Table 5 are kept separate from the general discharge and regulated as waste. Should the industrial wastewater treatment plant that treats the hazardous substances receive wastewater coming from other industrial or urban wastewater plants through the line containing different substances not useful for a change or reduction of the hazardous substances, during authorization, the presiding authority reduces the emission limit values indicated on Table 3 for each hazardous substance indicated on Table 5, taking into account the dilution caused by the mixing of the different wastewaters.

Following the regulation on discharge authorization, the controls and relative sanctions standards are regulated.

Concerning controls, the presiding authority carries out controls of the discharges based on a program that ensures periodic, widespread, effective, and impartial monitoring. For discharges in public sewage systems, the integrated water service provider is responsible for arranging an adequate control service in accordance with the methods anticipated by the management agreement.

If the discharge authorization requirements are not observed, the presiding authority, depending on the severity of the infraction proceeds:

- a) with a warning, establishing a deadline by which the non-compliances must be eliminated;
- b) with a warning and simultaneous suspension of the authorization for a determined period, where situations hazardous to the public health and the environment arise;

c) with revocation of the authorization in the event of failed compliance with the requirements imposed with the warning and in the event of repeated violations which determine situations hazardous to the public health and the environment.

Sanctions of both an administrative and criminal nature are disciplined by the code itself.

3. The Integrated Water Service (IWS): organization

The hub of the organization in charge of the protection and rational use of water is constituted by the Integrated Water System (IWS). Established from 1994, it is now thoroughly governed, in organization and operations, by the environmental code. The integrated water service is made up of a combination of public catchment, conveyance, and distribution services of water for civil sewage uses and purification of wastewater, and it must be managed in accordance with principles of efficiency, efficacy, and affordability.

The organization is structured on a local base. The municipalities, through the optimum territorial ambit body (OTAMB), carry out the functions of organizing the integrated water service, selecting the form of management, determining the utility tariffs, assigning management, and relative control.

As already indicated in the first part of this report, the water services are organized based on the optimum territorial ambits (OTA) defined by the regions. The local bodies falling within the same optimum ambit must participate in the territorial ambit body, to which is transferred the exercising of their responsibility on managing water resources and designing water infrastructures.

The regions can change the delimitations of the OTA in order to improve integrated water service management, but still in observance of the principle of hydrographic basin unit, taking into account basin plans and the location of the resources and their destination restrictions in favor of the involved inhabited centers, the uniqueness of management, and the adequacy of the management dimensions, defined based on physical, demographic, and technical parameters. If the OTA coincides with the entire regional territory (as in the case of Friuli Venezia Giulia), the service can be entrusted in distinct territorial ambits, in any case not inferior to the dimension of the circumscription of the provinces or the metropolitan cities, should it be useful to achieve more efficient management and better service quality for the users. In any case, the autonomous management already established in the mountain municipalities with population lower than 1,000 inhabitants continues, as does existing autonomous management in the municipalities with water procurement from qualitatively valuable sources, springs in natural parks or in natural protected areas, and an efficient use of the resource and protection of the body of water.

As already indicated, one of the most important functions carried out by the OTAMB is the planning

operation.

For this purpose, the presiding basin authority defines and periodically updates the water balance intended to ensure the balance between the availability of the accessible or actionable resource in the reference area and the demand for the various uses. To ensure the balance between resources and demands, the basin authority therefore adopts measures for the planning of the water economy based on the uses for which the resources are intended. For this reason, the law also envisages that the plans, the studies, and the research conducted by the presiding state governments and public bodies are communicated to the territory and region basin authorities. On their part, they draft and implement the cognitive program and verify the qualitative and quantitative state of the surface and underground waterways within each hydrographic basin and then prepare the relative regional water protection plan (see below the RWPP adopted by Friuli Venezia Giulia in 2018).

Based on this, the OTAMB drafts and updates the ambit plan, which consists in the reconnaissance of the infrastructures, the schedule of interventions, the management and organization model, and the economic financial plan.

The schedule of interventions identifies the extraordinary maintenance works and the new works to be completed, including the upgrade operations on already existing infrastructures, required to achieve at least the minimum service levels and to satisfy the user demand. The schedule of interventions, proportionate to the entire management, specifies the goals to be achieved, indicating the infrastructures on the program and the times of completion. The management and organization model defines the operational structure through which the provider ensures the service to the users and the realization of the schedule of interventions. On a yearly basis, the economic financial plan anticipates the evolution of the management and investment costs net of any non-repayable public grants and is integrated by the annual tariff proceeds projection, extended to the entire period of assignment. The plan must guarantee reaching the economic financial balance and, in any case, observance of the principles of effective, efficient, and affordable management.

The OTAMB always has the right to access and check the water infrastructures, even during the construction phases.

To safeguard the efficiency of the integrated water service, the further provision pursuant to article 152 of the environmental code contemplates the exercising of control and substitutive powers by the OTAMB. In fact, if the provider defaults on the obligations stemming from the law or the agreement such to compromise the resource to the environment or such to not allow the minimum levels of service, following a warning, the substitutive intervention of the territorial ambit body is established. Wherever the latter is unresponsive, the exercising of substitutive powers by the Region is also

anticipated and, as a last resort by the Ministry of the environment.

In the Friuli Venezia Giulia Region, the OTAMB is AUSIR, instituted by regional law 5/2016. In detail, this body is called on to exercise the tasks attributable to the local bodies on managing water resources, including the planning of the relative infrastructures, for this purpose drafting the ambit plan, which applies as the main planning instrument this body uses.

In the Friuli Venezia Giulia region, regional law 5/2016 regulates the organization of the functions related to the integrated water service and to the integrated urban waste management service, ruling that the optimum territorial ambit (OTA) should correspond to the entire regional territory and instituting the single authority for the water and waste services (AUSIR) as OTAMB. The district of the OTA, which covers all the municipalities in the region, also includes the eleven municipalities of Veneto belonging to the inter-regional hydrographic basin of the Lemene River, limitedly to what concerns the IWS.

The AUSIR has a public legal personality and statutory, organizational, administrative, accounting, technical, and capital autonomy and its resolutions are validly assumed without the need for resolutions of the participating municipalities. The AUSIR informs its activity following criteria of efficacy, efficiency, and affordability and has the balanced budget amendment obligation to be pursued through the balance of costs and proceeds. In fact, its costs of operation are borne by the IWS tariffs and partly borne by the integrated urban waste management service.

The organs of the AUSIR are the ambit regional assembly, the governing board, the president, the local assemblies, the auditor, and the general manager.

Most of the functions are carried out by the ambit regional assembly, which is the permanent organ made up of a mayor for each area of aggregation of municipalities (see Regional Law 20/2016) integrated by a representation of the Veneto municipalities included in the OTA. In particular, the assembly provides for the following: defining the organization of the IWS and the selection of the form of assignment; approving and updating the ambit plan; assigning the services; approving the service agreement and the relative regulation; preparing the reference diagrams of the service card; determining the tariff; monitoring and control activities of how the service is provided; the relationships with the ARERA; identifying ambits of assignment of the services; approving the operational plan for the drinking water crisis; approving the boundaries of the agglomerates (in other words, the areas in which the population or the production operations are concentrated in a measure such to make collection and channeling of the urban wastewater towards a treatment system admissible), and determining the load generated by each agglomerate in terms of equivalent

inhabitants subdivided into residents, fluctuating, and industrial; ascertaining the existence of requirements envisaged to safeguard autonomous management.

Some responsibilities, on the other hand, are reserved for the local assemblies, which express the opinion on the proposed ambit plan, the binding opinion on the proposed form of assigning the service, and on identifying the areas of assignment of the services. They also approve the four-year schedule of interventions and the tariff modulation system.

The ambit plan drafted by the AUSIR specifies the goals to be reached in the period of assignment and defines the service standards. It is made up of the parts already mentioned above, whereas the operational plan for the drinking water crisis indicates the operations to implement in the event that a drinking water state of emergency is declared, in observance of the prescriptions dictated by the regional water protection plan (on which see below).

The legislation also deals with the plants required for purification, establishing that the aqueducts, the sewage systems, the purification plants, and the other publicly owned water infrastructures are part of the property. In other words, they are public assets, alienable only in the ways and limits established by the law. The protection is also the responsibility of the territorial ambit body (OTAMB). The agglomerates with a number of equivalent inhabitants greater than 2,000 must have sewage systems for urban wastewater. The design, construction, and maintenance of the sewage systems is carried out implementing the best techniques available which imply economically affordable costs, taking into account particularly the average flow rate, the annual volume, and the characteristics of the urban wastewater, the prevention of any flow-back that causes wastewater to leak from the sewage sections, the limitation of pollution to the receivers caused by overflow originating from particular weather events.

The regions govern the water treatment plant design approval methods based on the criteria set forth by Attachment 5 and the correspondence between the plant's treatment capacity and the needs of the areas served, as well as the management methods which must ensure observance of the discharge limit values.

For the entire duration of the management, these water infrastructures owned by the local bodies are therefore entrusted in concession for free use to the service provider, who assumes the burdens envisaged by the agreement stipulated with the OTAMB.

4. The Integrated Water Service (IWS): operation

Operation is carried out by the provider following assignment of the service by the OTAMB.

In fact, in observance of the ambit plan and the principle of uniqueness of management for each OTA,

it must resolve the form of management from those anticipated by the European ordinance, consequently assigning the service in observance of the national regulation on organizing economically relevant local public services, namely through insolvency proceedings. The direct assignment, in other words, without a tender, can take place in favor of an entirely public company in possession of the requirements prescribed by the European ordinance for in-house management, in any case, participated by the local bodies falling within the optimum territorial ambit.

The relationships between the OTAMB and the service provider are regulated by a convention drafted based on standard agreements, with relative regulations, adopted by the presiding regulatory authority (ARERA). In particular, these standard agreements, with relative regulations, must provide for:

- a) the preselected legal form for management of the service;
- b) the duration of the assignment, in any case no longer than thirty years;
- c) the works to be completed during management of the service as identified by the tender;
- d) the obligation to achieve and the instruments to ensure maintaining the economic-financial balance of the management;
- e) the level of efficiency and reliability of the service to be ensured to the user, including with reference to maintenance on the systems;
- f) the criteria and the methods for applying tariffs determined by the OTAMB and their annual update, including with reference to the different user categories;
- g) the obligation to adopt the service card based on the prevailing guidelines;
- h) the obligation to provide for completion of the schedule of interventions;
- i) the methods for monitoring correct operation of the service and the obligation to prepare an adequate technical system;
- j) the obligation to fully collaborate to organize and activate integrated control systems that the OTAMB has the right to prepare throughout the entire assignment period;
- k) the obligation to promptly notify the territorial ambit body of the occurrence of events that imply irregularities in providing the service, as well as the obligation to assume any initiative to eliminate them;
- l) the obligation to return the works, the plants and the piping of the water service in working and good condition at the end of the assignment, the discipline of the consequences stemming from any early termination of the assignment and the criteria and methods for assessing the residual value of the investments made by the outgoing provider;
- m) the obligation to provide suitable financial and insurance guarantees;

n) the penalties, the sanctions in the event of failure to fulfil and the resolution conditions in accordance with the principles of the civil code;

o) the provider's business accounting methods.

Based on the schedule of interventions, the regulation attached to the management agreement must also define the extraordinary works and maintenance, as well as the execution time and financial schedule.

5. *The tariff*

For the use of the service, the users are bound to pay the tariff, since the principle of recovering the costs of water services prevails, including environmental costs relative to the resource, taking into consideration the economic analysis conducted based on the criteria indicated in Attachment 10 and, in particular, the "polluter-pays" principle. The policies of water prices must be suitable to encourage the users to use the resources efficiently and to contribute to achieving and maintaining the environmental quality goals, even though an adequate contribution to recovering the costs of the water service borne by the various sectors of water use, subdivided at least into industry, families, and agriculture. Concerning this, in any case, the social, environmental, and economic repercussions of recovering the costs must be considered, as well as the geographical and climatic conditions of the various regions.

Of the tariff cost components, the environmental costs and the costs of the resource should be considered in application of the principles of "cost recovery" and "who pollutes pays". The term "environmental costs" refers to the costs connected to the damage that using the water resources causes the environment, the ecosystems or other users, whereas the "costs of the resource" are the costs of missed opportunities imposed on other users as a consequence of the intense exploitation of the resources beyond their level of natural restoration and replacement.

The tariff, which is levied by the service provider, constitutes payment for the integrated water service and is determined taking into account the quality of the water resource and the service provided, the necessary works and upgrades, the entity of the management costs of the works, and the operating costs of the areas to be safeguarded, as well as a part of the operating costs of the territorial ambit body so that the full coverage of the investment and operating costs is ensured in accordance with the costs recovery principle and the "polluter-pays" principle. All the portions of the tariff for the integrated water service have the nature of a fee.

The provider is bound to deposit the proceeds stemming from collection of the tariff into a restricted fund registered to the OTAMB, which makes it available to the provider to implement the operations

related to the sewage system and the purification plants envisaged by the ambit plan. The tariff is not due if the users have their own collection and purification systems, as long as these systems have received specific approval from the OTAMB.

For industrial users, the tariff amount is determined based on the quality and quantity of the wastewater drained and based on the “polluter-pays” principle. This is without prejudice to the possibility of determining a reduced tariff amount for users who provide directly for purification and who use the public sewage system, as long as the relative purification systems have received specific approval from the OTAMB. For the purpose of encouraging reuse of wastewater or water already used in the production cycle, the tariff for industrial users is reduced based on the use of wastewater or water already used in the production process. The reduction is determined by applying a corrective factor to the tariff which takes into account the quantity of water reused and the quantity of primary water used.

To ensure the supply of good quality water and to control the discharges in the receiving bodies of water, each water service provider organizes a suitable territorial control and an analysis laboratory for quality control of the water at collection, in the conveyance and distribution systems, and in the purification and treatment plants, or they stipulate an agreement with other water service providers.

6. Guidelines for sludge stemming from wastewater treatment

As set forth by Art. 127 of the environmental code, the sludge stemming from wastewater treatment is subject to the waste regulation (...) for the purpose of the treatment carried out in the purification plant and must be reused any time this is appropriate. In any case, sludge may not be disposed of in fresh and salt surface waters.

Therefore, as indicated, the moment in which the waste regulation must be applied to sludge is at the end of the total treatment process carried out in the purification plant. Nevertheless, identifying the final moment of this treatment is not simple, because the regulatory sources on the matter do not appear to provide a certain, express, and unequivocal criterion for identifying the moment in which the materials stemming from the purification process “transit” into the environment of the waste regulation.

In fact, the regulatory framework on the subject is complex and difficult to read in a coordinated way. Art. 2 of Legislative Decree 99/1992 “Implementation of directive 86/278/EEC concerning the protection of the environment, particularly the soil, in the use of purification sludge in agriculture” defines sludge as residue stemming from the purification processes and refers to “treated sludge” having regard to a phase subsequent to purification, as it seems can be deduced from Art. 3, which

indicates treatment as one of the conditions for use, and Art. 11, subsection 2, which provides for further analyses for sludge subjected to treatment and other procedures with respect to those provided for by the previous section.

For its part, the environmental code defines sludge in Art. 74, subsection 1, letter bb) “the residual sludge, treated or untreated, coming from urban wastewater treatment plants”, whereas Art. 101, subsection 10 refers to “recovery as raw material of the purification sludge”.

In another part, Art. 184, subsection 3, letter g) identifies among special waste “... sludge produced by the purification and other treatment of water and from the purification of wastewater and from fumes reduction”, whereas Art. 208, subsection 15, cites “mobile plants that carry out dehydration of the sludge generated by purification plants and reintroduce water at the head of the purification process where they operate, with the sole exception of volumetric reduction and separation of the foreign fractions...”.

The affirmation of the judge during the criminal procedures should be considered, where he specified that “even a summary exam of the material carrying out of the purification process does not appear to be particularly useful – although it can certainly be deemed that some operations concerning sludge such as, for example, thickening, dehydrating, and drying, undoubtedly fall under the final phase of the total purification cycle – because the temporal placement of the actual completion of the process can depend on various factors. (...) Other factors can also have an influence, such as the actual management methods of the plant or other specific behaviors” (Criminal Court of Cassation, Sect. III, 36096/2011). The treatment method of the sludge is also just as relevant, which must be suitable and technically correct. Therefore, in short, it is impossible to determine beforehand and generally a certain final moment, but a concrete ascertainment is needed of the nature of the sludge and its treatment method.

The principle can, therefore, be affirmed according to which article 127 of the environmental code has contributed to providing a further indication to establish the moment in which the waste regulation must be applied to sludge and which is identified:

- 1) in the end of the overall treatment;
- 2) carried out at the plant;
- 3) designed to prepare the sludge itself for its final destination (disposal or reuse) in safe conditions for the environment;
- 4) through stabilization, reduction of volumes and other processes.

As a further consequence, these clarifications determine the applicability of the regulation on waste in all cases where the treatment is not carried out or is carried out in a location other than the

purification plant or in an “incomplete, inappropriate, or fictitious” way (Criminal Court of Cassation, Sect. III, 38051/2013).

The purification sludge is, therefore, the resulting waste from a specific, as far as singular, production process, consisting specifically in purification. Therefore, the intermediate phases of the process cannot be considered autonomously for the purpose of qualifying the result as “waste” but must instead be carried out at the end of the complete cycle. On this subject, the last paragraph of the aforementioned Art. 127, subsection 1 can be cited, which specifies that “the sludge must be reused any time this is appropriate”. This obligation for reuse is valid for sludge that has come to the end of the treatment process (which, therefore, is waste), but it is all the more valid for sludge taken during a phase that is still intermediate. It could even be stated that qualifying active sludge useful and valuable for the activation of purification plants as waste is in contrast to what is established precisely by this final paragraph.

Therefore, it is important to promote the reuse of the active sludge for the inoculum, rather than managing it as waste, stressing an inconsistency in this sense with the control agencies, even for the purpose of drafting a document of traceability which accompanies it in agreement with them, the transportation document (BoL), a procedure, a waiver or similar, which meets the criteria of correct active sludge management, compliance with the regulation, a guarantee of traceability, without bureaucratic exacerbation.

7. The regional water protection plan

There are two levels of planning: the district basin plan and the regional water protection plan. The district basin plan is the main planning and programming instrument intended to defend the soil and correct use of the waterways. Drafting the basin plan is assigned to the basin authority in compliance with the addresses, methods, and criteria established by the permanent institutional conference, which provides for adoption with its own resolution. The basin plan is then subjected to strategic environmental evaluation (SEA) on the state level and, once this procedure has been completed, its approval is remitted to the jurisdiction of the President of the Council of Ministers. The water protection plan constitutes a specific sector plan, remitted to regional jurisdiction, destined to integrate the district planning system and containing the measures necessary for the qualitative and quantitative protection of the water system.

The regional water protection plan (RWPP) identifies the measures and operations to protect surface and underground bodies of water for the purposes of achieving or maintaining the environmental quality objectives defined in the third part of the environmental code. The plan guarantees the

qualitative and quantitative protection of water resources and their sustainable use, bearing in mind the demand, the availability, the minimum flow needed for the life of waterways, the capacities of the water table, and the destination of use of the resources compatible with their qualitative and quantitative characteristics.

The plan is made up of various content and drafts: the general description of the territory, the cognitive analyses, the plan addresses, the implementation regulations, the summary of the economic analysis, the summary sheets, the environmental report, the nontechnical summary of the environmental report, and the cartography.

The regional water protection plan is a sector plan. The plan addresses identify measures by sector, by theme, and by water categories and dictate criteria for the planning, design and completion of territory transformation and management operations compatible with the water resource protection needs.

The regulatory requirements contained in the plan are binding for all public and private subjects who exercise the functions and activities inherent to the use and protection of water resources.

For the purpose of distinguishing the sewage systems, there are three categories:

- the clear system or line: the line of a separated sewage system dedicated to the collection and channeling of solely rain and runoff water, possibly fitted with devices for the collection and separation of first rain waters;
- the mixed system or line: the line of a sewage system dedicated to channeling urban wastewater, including rain runoff water;
- the wastewater system or line: the line of a separated sewage system dedicated to the collection and channeling of urban wastewater combined with any first rain waters.

The bodies of water with a high level of protection are the surface and spring waters in the “natura 2000” areas, instituted pursuant to the directives 92/43/EEC (“habitat directive”) and 2009/147/EC concerning the preservation of wild birds and in the natural protected areas instituted pursuant to regional law 42/1996, which governs regional parks and reserves.

Pursuant to article 94, subsection 1 of the environmental code, the region delimits the protection areas of surface and underground water destined for human consumption, distinguished in absolute protection area, respect areas, and protection areas, upon proposal of the environmental government bodies.

Within the respect areas, the region governs, among other things, sewer operations. In the protection areas, the region can adopt measures related to the destination of the involved territory, limitations and requirements for civil, productive, tourist, agro-forest, and livestock organizations to be inserted in both the general and sector town-planning regulations.

On the subject of governing drainage, the region has delimited the territory in uniform areas, subdividing them in mountain area, medium and high-plain area to the north of the springs line, low plain area of the drainage basin into the Marano and Grado lagoon, low plain area south of the springs line (not including the previous area), Karst area of the Gorizia and Trieste provinces, Marano and Grado lagoon; marine-coastal waters.

The region also identifies the agglomerates taking into consideration the area concentration of equivalent inhabitants per hectare and the linear concentration of equivalent inhabitants in the event that the settlement development has taken place primarily along the road network. Every two years, the boundaries of the agglomerates are re-examined, as well as the determination of the load generated by each agglomerate in terms of equivalent inhabitants subdivided into residents, fluctuating, and industrial.

The operations for collection and purification of the urban waste waters originating from agglomerates with more than 2000 equivalent inhabitants are identified as priority.

In protection of the Marano and Grado lagoon, the drainage of urban waste waters from the insistent agglomerates on the lagoon's drainage basin, downstream of the springs line, are progressively channeled, using a separated sewage system, to the purification plant located in the municipality of San Giorgio di Nogaro or to the plants located in the municipalities of Grado and Lignano Sabbiadoro. The urban wastewater drainage of the insistent agglomerates on the Karst areas of the Trieste and Gorizia provinces are progressively channeled, using a separated sewage system, to the existing purification plants equipped with underwater lines or to those that drain into the Isonzo River and its tributaries.

The domestic or industrial wastewater discharges are progressively collected towards the urban wastewater purification plants discharged into marine-coastal waters or into the soil within a strip 50 m from the coast, not including the existing ones discharged into port waters.

The newly created sewage systems are the separated type, whereas the existing mixed ones are progressively separated and restored. In the latter case, the works of separation and restoration of the sewage systems discharging into bodies of water with specific destination (see Art. 79 of the environmental code), the sewage systems derived from the filling of waterways, the sewage systems in the Marano, Grado, springs, and Karst areas are identified as priority.

The integrated water service provider's regulation establishes the conditions of admissibility of the non-polluting waters into mixed or clear sewage in protection of the sewage system's operation and the purification efficiency of the final treatment plant for urban waste waters.

The industrial waste waters that converge in sewage systems and in urban wastewater treatment plants must be subjected to the pretreatment required by the integrated water service provider.

Specific provisions of the plan regulate the subject of drainage, distinguishing the various ranges in correspondence to the number of equivalent inhabitants.

The discharges of domestic wastewater or water absorbed by the domestic water coming from settlements, installations, or buildings the private area of which borders, even only partially, a public space for public use crossed by a mixed or sewer line, are connected to the same lines with the times and methods set forth by the sewer integrated water service provider agencies' regulations. This obligation is also valid for the discharges previously connected to the mixed line transformed, even partially, into a clear line following the subsequent creation of the sewer line. In this case, the wastewater discharges must be separated and connected to the sewer line. The same obligation also exists for the domestic or absorbed wastewater discharges coming from settlements, installations, or buildings the private area of which borders, even only partially, a private road which in turn comes out onto a public street or space crossed by a sewer channel.

The domestic wastewater or those absorbed by domestic wastewater coming from settlements, installations, or isolated buildings with organic load lower than or equal to 50 equivalent inhabitants are subjected to treatment systems which guarantee an adequate level of environmental protection identified in the guidelines set forth by ARPA or other plant solutions which guarantee an equivalent level of environmental protection verified by ARPA.

The discharges of domestic wastewater or those absorbed by domestic wastewater stemming from settlements, installations, or isolate buildings with organic load greater than 50 equivalent inhabitants are subjected to treatment systems which guarantee an adequate level of environmental protection and which observe the following distribution limits: from 51 to 150 equivalent inhabitants, the distribution limits set forth by the table in Attachment 2 are applied. For discharges with potential greater than 150 equivalent inhabitants, the distribution limits for urban wastewater are applied for the corresponding class of potential.

The urban wastewater discharges not subject to the provisions of directive 91/271/EC are subjected to the treatment systems that guarantee an adequate level of environmental protection and the distribution limits set forth in articles 16 and 17 of the plan.

The creation of new plants and the upgrade operations on the existing ones must progressively lead to the elimination of the plants established solely as primary treatment in favor of plants made up of secondary or equivalent type treatments. The primary treatments can continue to be used only in residual cases motivated by high costs based on the achievable environmental benefits.

The discharges between 2000 and 10,000 equivalent inhabitants discharging into marine-coastal waters must observe the distribution limits indicated in tables 1 and 3 of attachment 5 to the third part of the environmental code. The discharges between 500 and 1,999 equivalent inhabitants discharging into surface waters must observe the distribution limits pursuant to table 3 of attachment 5 to the third part of the environmental code legislative decree.

The discharges between 50 and 499 equivalent inhabitants discharging into surface waters must observe the distribution limits pursuant to table 3 of attachment 5 to Part III of the environmental code, not including a series of parameters specified in article 16 of the RWPP implementation regulations.

The discharges of urban wastewater coming from agglomerates greater than 10,000 equivalent inhabitants discharging in sensitive areas or located in drainage basins pertaining to the sensitive areas are subjected to a stricter treatment than the one required by article 105, subsection 3 of the environmental code and they must meet the requirements set forth by the aforementioned attachment 5.

The purification systems at the service of agglomerates with strong seasonal fluctuation are sized considering the maximum foreseeable load, calculated based on the statistical tourist traffic data during the week of maximum presence. The sections of the purifier are equipped with multiple parallel lines or other suitable plant technology to be activated based on the fluctuation of the population.

The purifier discharges of urban wastewater with potential greater than 2000 equivalent inhabitants are equipped with disinfection systems that use residual-toxicity-free techniques.

Activation of the disinfection is compulsory for plants which, due to location and volumes discharged, have an impact on the quality of the water destined for potable use and the life of mollusks, as well as for the plants that may influence the quality of the water destined for bathing during the swimming season. In these cases, the distribution limit for E. coli is set at 5000 ufc/100 ml. The authorization for discharge can set a different limit for motivated reasons in relation to the environmental and health hygiene situation of the receiving body of water and existent uses. For motivated protection needs of the uses of the receiving body, authorization for discharge requires that the discharges of urban wastewater purifiers with potential between 50 and 2,000 equivalent inhabitants be equipped with disinfection systems and activation of the disinfection is compulsory for these cases.

The agglomerates with a number of equivalent inhabitants greater than 2,000 must be equipped with sewage systems for the urban wastewater. In other words, they must be equipped with a channeling system (generally underground) for the collection and channeling of domestic wastewater or the

mixture of domestic wastewater, industrial wastewater or rainwater runoff, even if channeled separately, and coming from the agglomerates.

In the sewage systems, level spillways are generally inserted which, during weather events, distribute the diluted flows into surface waters or the soil. These installations are useful for handling periods of rain during which the geometric dimensions of the downstream collectors must be contained, as well as because the impact of urban wastewater purification plants is unable to effectively treat the high loads of water and extremely diluted wastewater.

Operation of the level spillways is currently governed by the integrated water service provider's regulations and by some laws or regional regulations which indicate minimum permitted values of the dilution ratio.

In the Ministerial Decree of 4 March 1996, at point 8.3.1, it is indicated that, in the absence of different and specific indications, in mixed sewage systems rainwater runoff discharges, the dilution may not be lower than three times the average flow in dry times.

In fact, activation of the sewage system level spillways implies the transfer of high polluting loads to the receiving body of water.

Wherever technical and economically sustainably possible and in the cases deemed appropriate by the relevant authorization issuing authority, a grille system is installed.

In the event that a grille system is not installed, technical solutions are implemented which guarantee an equivalent grade of environmental protection of the receiving body, including the periodic cleaning of the surrounding environment.

The minimum permitted ratio between the flow of rain to be channeled to the purification plant and the average daily flow in dry times must be six. This ratio is reduced to four for the last outlet near the purification plant.

For the purification plants that serve the mixed sewage systems, the sizing of the pretreatment and primary treatment phases is suitable to permit the treatment of flows equal to at least four times the average daily flow in dry times. The sizing of any biological phases must permit the treatment of flows at least 2.5 times the average daily flow in dry times.

Wherever technical and economically sustainably possible and in the cases deemed appropriate by the relevant authority for particular protection and control needs, a remote detection system is installed which signals the activation of the spillways.

A sewage lifting station is a system to connect a portion of the sewage system located at a depth lower than the purifier or the common water deposit of a district or town. This system allows various sections of the sewage section to be connected to one another, creating a single, common system.

The wastewater lifting stations are equipped with a number of machines such to ensure an adequate reserve.

The lifting stations must be equipped with or connected to suitable emergency spillways which are capable of starting autonomously in the event of an electrical power outage.

In the event that the activation of the emergency spillway should imply a deterioration of the qualitative characteristics of the water with specific destination such to also temporarily impede the specific use of the water, system or management measures must be adopted suitable for promptly guaranteeing continuity of operation in the event of a fault or of an electrical power outage.

The emergency spillway can also carry out the function of level spillway for the lifting stations serving mixed sewage systems and they are equipped with a remote detection system which signals activation.

The discipline pursuant to articles 15 (adequate urban waste water treatment systems), 16 (distribution limits to the urban waste water discharges in surface waters not subject to the provisions of Dir 91/271/EEC), 19 (discharges of urban waste water coming from high seasonal traffic agglomerates), 20 (disinfection systems), 21 (level spillways), and 22 (emergency spillways that serve sewage system lifting stations) applies to the newly created urban waste water discharges. The existing agglomerate discharges not subject to the provisions of directive 91/271/EEC are updated within eight years of the plan going into effect, in other words, 2026. The ambit plans approved subsequent to the water protection plan going into effect are drafted in compliance with the standards of Title III, Section I “Discharges discipline” of the implementation standards of the regional water protection plan, compatibly with economic financial sustainability.

8. The protection of the sea: the main regulatory sources

Concerning the subject of the project, a large part of the regulations on discharging wastewater into the sea is contained in the environmental code and has already been examined in the previous paragraphs.

Nevertheless, the regulations must not be overlooked which deal more generally with the subject of protecting the marine environment, a result of the transposition of international agreements and European directives.

The following are some of the most relevant agreements: the London Convention, called OIL-POL, of 1954 and renewed in 1973 which represents the first step in the battle against marine pollution from hydrocarbons; the 1972 Stockholm Conference on the human environment, when the United Nations adopted a specific program for the environment which led to a series of conventions between the countries, the result of intense international cooperation aspiring to global protection of the seas; the

1972 Convention on the prevention of marine pollution caused by the deliberate disposal of waste and other substances and the 1996 Protocol; the Convention for the prevention of pollution caused by ships (MARPOL 73/78); the 1976 Convention for the protection of the marine environment and the coastal region of the Mediterranean and the various implementing protocols; the 1982 United Nations convention on the Law of the Sea adopted in Montego Bay.

Alongside the international legislation, we find the community legislation. Some of the community regulations, in addition to directive 2000/60/EC, are the following: framework directive 2008/56/EC for community action in the political field for the marine environment, enforced in Italy with Legislative Decree 190/2010, recently amended by directive 2017/845/EU, which is intended as an integrated strategy on the sustainable use of the seas, the preservation of ecosystems and protected areas, and the orientation of human activities with impact on the sea. Also intended to protect the marine environment and coastal economies from pollution is directive 2013/30/EU, enforced in Italy with Legislative Decree 145/2015. For the impact they have on the coastal area, we should also remember the following: directive 79/409/EEC on the preservation of wild birds and directive 93/43/EC, relative to the preservation of natural habitats (“habitat directive”).

The Italian legislation has aligned with the international and community setting, adopting Law 979/1982, setting forth provisions for the defense of the sea. This law tends to protect the sea through the provision of prohibitions and obligations to prevent the introduction into the marine environment of harmful substances coming from ships, measures aimed at preventing or dealing with pollution caused by accidents, coastal waters monitoring systems, and the institution of marine reserves, as well as providing planning and control instruments.

PART 3: LEGISLATIVE FRAMEWORK PROPOSAL TO IMPROVE LOCAL WATER QUALITY OBJECTIVES

The analysis of the Croatian legal framework in the field of water protection against pollution shows that the Republic of Croatia has opted for a system that is largely centralized. In this system, the local and regional units of self-government participate almost in all aspects only in the executive level of water management. This is sufficiently illustrated by the fact that all general normative acts (laws and bylaws) analyzed in this report are acts of the central government (state). After all, already at the basic normative level (The Waters Act) it is regulated that the Ministry is the holder of water policy, and that local and regional self-government units "participate in the preparation and implementation of water policy".

Very broad competencies in water management and water protection are in the existing normative framework given to Hrvatske vode as an institution established by the central state and holding numerous public authorities.

This approach of the Croatian legislator to the regulation of protection of water from pollution can be justified on the one hand by the fact that the Republic of Croatia is a small country, both territorially and in terms of population. On the other hand, the need to harmonize water policy in general, and thus also the policies and substantive regulations for the protection of water from pollution with the EU *acquis*, probably led to such a normative approach.

Therefore, when the question of cooperation between Italy and the Republic of Croatia regarding the protection of the Adriatic Sea from pollution is raised, the regional level of cooperation on the Croatian side does not seem to be a promising option. After all, even at the level of water management principles, the Waters Act provides at the first place for the interstate cooperation. It prescribes that water management with transboundary impact is achieved through cooperation with other countries, concluding and implementing international agreements, informing about transboundary impacts on water and the aquatic environment, major accidents as defined by environmental regulations, as well as international exchange of information on water and aquatic environment. Moreover, the Waters Act explicitly stipulates that international cooperation in matters regulated by this Act is exercised by the Ministry.

Of course, this principle does not *eo ipso* prevent possible regional cooperation, but the concentration of powers in water management in the hands of the Ministry and the state water management agency (Hrvatske vode) suggests that cooperation in the protection of the Adriatic should be achieved at that level.

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After examining the administrative organization of integrated water management, with particular focus on purification and sewers, some considerations must be made from the perspective of improving the coordination between Italy and Croatia in this sector.

The first fact that emerges is the substantial uniformity between the two countries in the relevant legislative guidelines. This is due to the common derivation of the respective internal standards from the EU regulation. This means that finding any significant differences is improbable in the primary standard, especially concerning observance of the chemical concentration limits in water destined to be discharged into the sea after purification treatment.

On the other hand, there are significant differences in the way the administrative organization is set up to manage the entire water cycle, the integrated water system, and the agencies in charge of water quality control.

In fact, the Italian administrative model is characterized by substantial uniformity in form, which is supported by two strong points: the center-suburb coordination between the mixed bodies (the permanent institutional conference, pursuant to Art. 63 of the environmental code) and the OTA “system” on a regional level, where the OTA coincides with the entire regional territory in numerous cases (see Friuli Venezia Giulia). This system anticipates an addressing, management, and control process assigned on a regional level and coordinated on the central level which can be adapted to various geographical settings, but comparable in terms of performance of the processes that are structured based on the same dynamic.

From what is shown by the analysis conducted on the Croatian side, the same uniformity is not found in the organization of the operational – management and control scheme. This obviously complicates the possibility of proposing legislative changes (in any case, the jurisdiction of the State in both cases), such to be realistically useful in improving the level of protection of the Adriatic. In addition to this, it

must be considered that many decisions, especially on the issue of technical standards on limits and detection methods of the chemical substances in the water, still fall under EU jurisdiction.

If the objective is to draft special guidelines for the Adriatic, and particularly for its northern area, based on the effects that are occurring specifically consequential to the currently practiced water purification techniques, the reference regulatory structure must be considered and a common strategy must be drafted.

The way to obtain exceptions and therefore a sort of special arrangement for certain areas is anticipated by the same directive 2000/60/EC in Art. 12, where it is envisaged that, should a member State become aware of an aspect that presents repercussions for management of its waters, but which cannot be resolved internally, it can delegate the question to the Commission and to any other member State involved, recommending solutions if applicable. In these cases, the Commission responds to each report or recommendation from a member State within six months. Nevertheless, the uncertainty in defining what can be considered “in excess” of the individual State’s capabilities, the need for this procedure to be activated specifically by the States themselves, despite hypothetically concerning limited areas, and the realistic possibility of obtaining significant results, lead to this instrument being considered to be of dubious effectiveness, unless preceded and accompanied by a series of coordinated operations between the involved States and, within these, between the States and the respective local or decentralized governments.

The starting point for these coordinated operations could be represented by the stipulation of a series of agreements between the agencies responsible for integrated water management, on Italy’s part, and water purification on Croatia’s part. The content of these agreements should include, first and foremost, the exchange and sharing of the information on the purification operation and the techniques used, the quality of the marine waters, and the sharing of best practices. This constant exchange of information can lead to the drafting of targeted strategies, which bring to light common elements and differences in approach.

As for the Italian side, the main point of contact, as said, is constituted by the OTAMB (Optimal Territorial Ambit Management Body) - “Ausir” for FVG - precisely because it is representative of the entire area involved and the hub between the regional authority and the integrated water managers and, in any case, in a privileged position to be able to dialogue with both. On the other hand, the OTAMB must also have capabilities on a district basin conference level, because this government body coexists with the state administration, in other words, the subject able to interact with its counterpart

on the Croatian side and, at the same time, on the level of the community that must be interacted with in order to definitively determine, if necessary, exemption arrangements and the contents thereof. Therefore, during the institutional conference, the best solutions can be drafted to bring to the attention of the European Commission, following discussion with the Croatian (state) partner.

The operational structure can summarily be traced as follows:

- the OTAMBs dialogue with the Croatian bodies that carry out the same functions (perhaps a “permanent round table” or something similar can be proposed?);
- each OTAMB interprets requests from the integrated water system managers and returns the results drafted by the “permanent round table” to them;
- the OTAMBs are invited to participate in the permanent institutional conference, partly for the purpose of contributing what has come out during the “permanent round table” to the discussion;
- the permanent institutional conference invites the relevant Minister (State representative, in Italy the Minister of environment) to be the spokesperson (with their Croatian counterpart) at the EU Commission.

It is a difficult course but, if followed steadfastly, it may produce some significant results over time.