

EU LEVEL POLICY AND LEGISLATIVE FRAMEWORK ON CIRCULAR WATER USE

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1. INTRODUCTION

Law on water or water law, and thus different related water rights, reflects the economic, social and cultural perceptions of water. These ideas are shaped through a range of factors such as geography, climate and extreme changes in availability of water and water resources, as well as how these water resources are used¹.

The finding of the connection between human interactions with water necessitated the creation of a comprehensive water management system, which should be able to meet the water needs while ensuring that the natural balance of the waters is maintained. The water management system, which dealt only with the issues of interventions in waters for the protection against harmful effects of water and issues of provision of water for use in the public interest, has been transformed into a comprehensive water management system with the enforcement of the applicable legislation.

Unfortunately, the same still cannot be said for the reuse of water, the provisions for which are scattered throughout different European directives, mainly addressing the limitations regarding hazardous substances. In the absence of European wide standards or guidelines to regulate water reuse in Europe, the EU has developed a portfolio of directives developed to protect the environment and human health, regulate the water cycle and are therefore of major importance for water reuse.

¹ Hodgson S., Modern water rights - Theory and Practice, Legislative Study, Food and agriculture organization of the UN, Rome, 2006, pg. 13



2. WATER LAW IN GENERAL

Water law has been getting a lot of attention in the last decade or two, although a review of legal history in this area clearly shows that, over thousands of years ago, civilizations were aware of the importance of regulating water management. Such arrangements can be found either in ancient Egypt, where both land and water belonged to the Pharaohs, who in turn granted special water use rights and at the same time already had a special administrative authority overseeing water levels, quality of coastal land and water infrastructure², or in the Roman Empire, where the Justinian Code created the notion of water as a common good (*res in publico usu*) and one also needed special permits for specific water use, for which a governing body (*Curatela aquarum*) was established. There was a transition from the perception of water as the property of the entire population (*res in patrimonio populi*) to the perception of water as a synonym for the right of people to use (*res in publico usu*).

Coherent, symbiotic and planned management of all interventions in water and use of water, coastal land and water infrastructure is crucial in maintaining the quality, quantity and safety of water resources for the life and health of people and the environment, which requires appropriate regulation and effective administration for implementation and control. In studying water law, therefore, national and local perceptions of water must be kept in mind, as perceptions in a particular environment may differ enormously from our general perceptions, and therefore literally taking on water law from one country and applying it in another is not appropriate (e.g. *there are special Water Courts in the states of Colorado and Montana, which have been in existence since 1969 and 1979, respectively, and adjudicate exclusively on water rights disputes*).

The active role of the state and the planned directing of different new or existing contacts of man with nature first requires an active, fast and operational state administration. The tendencies of modern organizations of countries are also visible here, where the role of the administration is increasing in the area of environmental law in general, which is to a considerable extent administrative law. It is important for an efficient and rapid operation in the field of water that all branches of state power generally operate efficiently, from the legislative branch, which, with its own, European or implemented European legislation and international treaties, quickly and qualitatively defines the tasks of the administration and also provides the basis and limits to the executive authorities in relation to water management, in particular in relation to other bodies governed by public and private law. Effective regulation of water law is demanding and requires a comprehensive but coherent study of many areas of law, starting with the European Convention for the Protection of Human Rights and Fundamental Freedoms, since the European Court of Human Rights has also taken the view that States have an active duty providing a legislative and administrative framework regarding relations between people and water.

The sensitive nature of the subject of research and study raises the question, inter alia, of the appropriateness of leaving the regulation and management of multiple aspects of water to private partners in the system of public authorizations, contracts or concessions, and from the point of view of legal science, is a source of research and assessment of the appropriateness of such commercialized regulation and lack of oversight, all in relation to the responsibility of the state and to the principles and

² Caponera D., *Principles of Water Law and Administration*, 2nd Edition, Taylor & Francis Group, London, 2007, p. 12, 13



objectives in the field of water management as public property and water infrastructure. Even though guidelines for legislative frameworks in the field of environmental law were already given in the Declaration on the Environment and Development at the 1992 UN Conference on Environment and Development in Rio de Janeiro, they are far from being implemented to the extent and content appropriate for their purpose.

Debates around the role of regulation in shaping innovation and progress are long standing and there is a growing body of well-researched case studies available, highlighting the costs and benefits of regulation for incentivising innovation. As with many contentious issues, there is credible theory and empirical evidence supporting both sides. From one perspective, regulation, when poorly designed or deployed, denies resources and time to entrepreneurs by creating red tape and burdensome administrative demands. It can also impose unnecessary financial burdens on companies who are forced to adopt specified processes, technologies, and strategies in order to comply with legal requirements. Where regulation is inadequately aligned with (e.g. lags behind) innovation, it can delay the progress of new technologies. On the other side of the argument, regulation provides a general framework for finance and funding conditions as well as for intellectual property rights, which set important principles for, and grease the wheels of innovation. Regulation also imparts clarity, stability and certainty on the operating environment experienced by entrepreneurs and investors. Standards deliver a design and performance benchmark for producers and confidence for the consumer, often helping to boost trust in an unfamiliar product or service. Perhaps most importantly, regulation and standards underpin legal obligations and thereby bound liability for all parties.



3. EU WATER REUSE LEGISLATION

3.1. Necessity of Establishing an EU Framework

The way in which the tensions described above play out in the context of water reuse (specifically non-potable water quality standards) in the European Union (EU) is instructive, particularly for jurisdictions wishing to explore and pursue water reuse as a strategic water management option. Water reuse involves treating wastewater to an appropriate standard so it can be used again as non-potable or potable water rather than being discharged into the sea, a river or other water body. As an increasingly significant component of integrated water resources management strategies, reuse has growth potential in many parts of the world, including Europe. Europe offers a delicate patchwork of customs and behaviours within which consistent and coherent water reuse standards or water quality guidelines must be developed. An important sub-text to the debates has been the question of whether the EU should develop a single set of standards for reuse water quality, for adoption across the continent.

The absence of a single set of standards has been identified as a significant barrier to the development of the water reuse sector in the EU. Three persuasive arguments have been put forward for introducing an effective regulatory regime for water reuse schemes at the EU level and we summarise these in the following paragraphs, having collated them from a range of sources.

First, the provision of a firm legal basis to protect the health of the public and the environment is vital for any sector involved in the management and anthropogenic use of natural resources. The absence of a robust legal architecture erodes the confidence and conviction needed by potential reuse scheme developers. Similarly, a lack of independently set performance objectives increases uncertainty and makes the design of risk management practices difficult. This link between regulation and risk management is central to the effective operation of engineered systems which deliver utility for citizens on a large scale through the management of natural resources. Second, effective regulation moderates perverse or conflicting incentives, which can lead to undesirable social or economic outcomes. Yet, for regulation to be effective, regulators must both understand the impact of regulatory interventions, and anticipate institutional responses. The importance of ensuring that regulation facilitates rather than burdens reuse schemes was starkly illustrated in a recent report commissioned by the EU itself, pointing out that in France, Italy, and Greece overly stringent non-potable reuse quality standards were a major barrier to the further development of reuse projects. These cases present examples of the non-trivial challenges for those charged with developing and implementing regulatory regimes. In the case of water reuse, these are made even more difficult by the fact that the activities being regulated are often novel and only have sparse precedent. Under such circumstances domestic governance bodies are perhaps understandably cautious and conservative, reducing their effectiveness as independent regulators.

The regulation of water reuse is made more complicated in the EU by the fact that the activities being regulated are often novel and only have sparse precedent. Third, the potential geographical heterogeneity in regulation that could arise from a multiplicity of regimes would have unwelcome consequences for European business and communities. For example, variability in non-potable water quality standards for agricultural use across the continent has the potential to damage the free movement of goods across Europe's internal borders as consumers in one part of Europe may become anxious about perceived lower standards in other parts of the continent. This issue is potentially damaging to the single market principle



held by the EU and is perhaps the reason why there has been more interest in developing water quality standards for agricultural water reuse than for the non-potable and potable municipal sectors.

Water reuse can be promoted through different policy instruments. One type are standards that define minimum requirements for the reclaimed water before it can be reused for e.g. irrigation in agriculture, urban or recreational uses - recreational and urban uses can include e.g. irrigation of parks, public green spaces and golf courses, road washing, car washing, fire-fighting etc. At the moment, only six Member States have such standards. In five of these countries (Cyprus, Greece, France, Italy and Spain) the standards are compulsory and included in the relevant water reuse legislation. In Portugal, the standards are not included in water reuse legislation but are enforced through the permitting requirements rules. In some Member States, guidelines for the reuse of water exist or are being prepared even though there is no binding legislation or quality standards for the moment (e.g. Belgium, Denmark, Malta). Although the majority of Member States do not have legislation or guidelines on water reuse yet, water reuse might be governed by other legislation e.g. permitting procedures on wastewater discharge or drinking water requirements.



3.2. Existing EU Regulation Pertaining to Water

In the absence of European wide standards or guidelines to regulate water reuse in Europe, the EU has developed a portfolio of directives developed to protect the environment and human health, regulate the water cycle and are therefore of major importance for water reuse.

3.2.1. Water Framework Directive

The introduction of the EU Water Framework Directive 2000/60/EC (WFD) aimed to bring in a new era for European water management, focusing on understanding and integrating all aspects of the water environment to be effective and sustainable. The purpose of the Directive was to establish a framework for the protection of European waters in order for Member States to reach “good status” objectives for water bodies throughout the EU. These efforts are based on a six-year cycle, whereby the WFD environmental objectives were to be met by 2015, provided that no deadline extension or exception was invoked. Member States that avail themselves of an extension beyond 2015 are required to achieve all WFD environmental objectives by the end of the second and third management cycles, which extend from 2015 to 2021 and 2021 to 2027 respectively.

The Directive was adopted to succeed and replace traditional management practices predicated upon the command and control paradigm, which looked at pressures in isolation and reduced environmental systems to their constituent elements when setting specific water objectives. Under this approach, specific parameters were monitored at the point of discharge to control the emissions of individual pollutants beyond specified limits. Under the assumption that managing individually the non-compliant elements could lead to an overall improvement in ecosystem health, this policy approach was discipline-specific, focusing on compliance of isolated components of an environmental system, in an attempt to increase their predictability and stability. Although this paradigm had been effective for a long time and enabled developed industrial societies to address the most serious health-threatening environmental impacts, it failed to consider the complexity of ecosystems or the interactions and trade-offs at different scales.

The introduction of the WFD aimed to facilitate a shift from these fragmented policies to a holistic approach integrating all parts of the wider environmental system. With the emergence of integrated watershed management in several countries throughout the world, the growing recognition of the multiple-often competing-uses of water, and the increased awareness of the interrelationships of water systems with other physical and socio-economic systems shaped the WFD's systemic intent. As articulated in its Preamble and Article 1, the Directive offers an integrated and coordinated approach to water management in Europe based on the concept of river basin planning. Acknowledging that catchments differ from each other in terms of both socio-political and natural conditions, it signified a shift towards catchment management and systems thinking. In line with systems theory putting emphasis on the interactions and interdependencies within a system that form a functioning whole, it required understanding the relationship between land and water under different socio-economic drivers in the management of water resources.

Furthermore, the Directive's requirements for public participation in its planning process address the inherent complexity of water resources management, and create the impetus for the integration of multiple perspectives and skills for decentralised policy-making in water governance. Through the WFD Common Implementation Strategy (CIS), a recursive process of provisional goal-setting and revision based on learning, the WFD introduced an experimentalist approach to water governance, offering much more flexibility than previous directives, and opportunities for continuous policy learning and adjustment,



leaving many choices open to the Member States. Unlike any other environmental directive that prescribes specific targets, the WFD is manifestly not a target-based piece of legislation, the only notable exception being the WFD's explicit obligation that no water bodies are to experience deterioration in status from one class to another. Instead, it sets specific operational and technical implementation obligations for member states that could be referred to the EU Court of Justice if these were not followed correctly. Overall, the WFD was seen as the first European Directive that focused on environmental sustainability, and partly because of this, its introduction and innovations created revolutionary prestige for the Directive, which was considered as a potential template and pilot for future environmental regulations.

The EU Water Framework Directive establishes a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater. It aims to prevent and reduce pollution, promote sustainable water use, protect and improve the aquatic environment and mitigate the effects of floods and droughts. The overall objective is to achieve good environmental status for all waters.



3.2.2. The Groundwater Directive

Groundwater constitutes the largest reservoir of freshwater in the world, accounting for over 97% of all freshwaters available on earth (excluding glaciers and ice caps). The remaining 3% is composed mainly of surface water (lakes, rivers, wetlands) and soil moisture. Until recently, focus on groundwater mainly concerned its use as drinking water (e.g. about 75% of European Union residents depend on groundwater for their water supply), and recognising that it is also an important resource for industry (e.g. cooling waters) and agriculture (irrigation). It has, however, become increasingly obvious that groundwater should not only be viewed as a water supply reservoir, but should also be protected for its environmental value. Groundwater plays an essential role in the hydrological cycle and be critical for maintaining wetlands and river flows and acting as a buffer during dry periods. In other words, it provides the base flow (i.e. the water which feeds rivers all year round) to surface water systems, many of which are used for water supply and recreation. In many rivers across Europe, more than 50% of the annual flow is derived from groundwater. In low-flow periods this figure can rise to more than 90% and hence, deterioration of groundwater quality may directly affect related surface water and terrestrial ecosystems. Since groundwater moves slowly through the subsurface, the impact of anthropogenic activities may last for a long time. This means that pollution that occurred some decades ago - whether from agriculture, industry or other human activities - may still be threatening groundwater quality today and, in some cases, will continue to do so for several generations to come.

The Groundwater Directive complements the Water Framework Directive (WFD). It requires:

- groundwater quality standards to be established by the end of 2008;
- pollution trend studies to be carried out by using existing data and data which is mandatory by the WFD (referred to as "baseline level" data obtained in 2007-2008);
- pollution trends to be reversed so that environmental objectives are achieved by 2015 by using the measures set out in the WFD;
- measures to prevent or limit inputs of pollutants into groundwater to be operational so that WFD environmental objectives can be achieved by 2015;
- reviews of technical provisions of the directive to be carried out in 2013 and every six years thereafter;
- compliance with good chemical status criteria (based on EU standards of nitrates and pesticides and on threshold values established by Member States).

The Directive 80/68/EEC on the protection of groundwater against pollution caused by certain dangerous substances has provided a groundwater protection framework before the Directive 2006/118/EC. It required to prevent the (direct or indirect) introduction of high priority pollutants into groundwater and to limit the introduction into groundwater of other pollutants so as to avoid pollution of groundwater by these substances. This directive was repealed in 2013. The Directive on the protection of groundwater against pollution and deterioration provides for specific criteria for the assessment of good chemical status, the identification of significant and sustained upward trends, and the definition of starting points for trend reversals. All threshold values for pollutants (with the exception of nitrates and pesticides, for which the limits are set by specific EU legislation) are set by the Member States.



3.2.3. Drinking Water Directive

The Drinking Water Directive (Council Directive 98/83/EC of 3 November 1998 on the quality of water intended for human consumption) concerns the quality of water intended for human consumption. Its objective is to protect human health from adverse effects of any contamination of water intended for human consumption by ensuring that it is wholesome and clean. The Drinking Water Directive applies to: (i) all distribution systems serving more than 50 people or supplying more than 10 cubic meter per day, but also distribution systems serving less than 50 people/supplying less than 10 cubic meter per day if the water is supplied as part of an economic activity; (ii) drinking water from tankers; (iii) drinking water in bottles or containers; (iv) water used in the food-processing industry, unless the competent national authorities are satisfied that the quality of the water cannot affect the wholesomeness of the foodstuff in its finished form.

The Drinking Water Directive doesn't apply to natural mineral waters recognised as such by the competent national authorities, in accordance with Council Directive 80/777/EEC of 15 July 1980 on the approximation of the laws of the Member States relating to the exploitation and marketing of natural mineral waters and repealed by Directive 2009/54/EC of 18 June 2009 on the exploitation and marketing of natural mineral waters; and waters which are medicinal products within the meaning of Council Directive 65/65/EEC of 26 January 1965 on the approximation of provisions laid down by law, regulation or administrative action relating to medicinal products and repealed by Directive 2001/83/EC of 6 November 2001 on the Community code relating to medicinal products for human use.

The Directive laid down the essential quality standards at EU level. A total of 48 microbiological, chemical and indicator parameters must be monitored and tested regularly. In general, World Health Organization's guidelines for drinking water and the opinion of the Commission's Scientific Advisory Committee are used as the scientific basis for the quality standards in the drinking water. When translating the Drinking Water Directive into their own national legislation, Member States of the European Union can include additional requirements e.g. regulate additional substances that are relevant within their territory or set higher standards. Member States are not allowed, nevertheless, to set lower standards as the level of protection of human health should be the same within the whole European Union.

Member States may, for a limited time depart from chemical quality standards specified in the Directive (Annex I). This process is called "derogation". Derogations can be granted, provided it does not constitute a potential danger to human health and provided that the supply of water intended for human consumption in the area concerned cannot be maintained by any other reasonable means. The Directive also requires providing regular information to consumers. In addition, drinking water quality has to be reported to the European Commission every three years. The scope of reporting is set out in the Directive. The Commission assesses the results of water quality monitoring against the standards in the Drinking Water Directive and after each reporting cycle produces a synthesis report, which summarizes the quality of drinking water and its improvement at a European level. Further principles laid in the Directive are: planning, regulation (obligations of the Member States and the Commission), monitoring, information and reporting

In accordance with the provisions of Article 14 of the Directive, the deadline was November 2003 for the 15 Member States which were part of the EU before 2004 (EU-15) to have taken the measures necessary to ensure that the quality of water intended for human consumption complies with the



Directive. New Member States had to comply with the Directive by the day of accession unless specific implementation deadlines were laid down in the Accession Treaties.

3.2.4. Bathing Water Directive

The EU's efforts to ensure clean and healthy bathing water began 40 years ago with the first Bathing Water Directive. Today, Europe's bathing waters are much cleaner than in the mid-1970s, when large quantities of untreated or partially treated municipal and industrial waste water were discharged into clean water. During the 2018 bathing season, all EU Member States manage their bathing waters according to the provisions set out in the Bathing Water Directive. Before the beginning of the season, countries identify national bathing water sites, establish their own monitoring calendars and define the length of the bathing season. Local authorities collect water samples at officially identified bathing sites throughout the season. The samples are then analysed for two types of bacteria that indicate pollution from sewage or livestock. Polluted water can have impacts on human health, causing stomach upsets and diarrhoea if swallowed. Depending on the levels of bacteria detected, the bathing water quality is classified as 'excellent', 'good', 'sufficient' or 'poor'.

The objective of the Bathing Water Directive is for the water quality at all bathing water sites to be classified as at least 'sufficient'. This minimum water quality standard was met by 95.4 % of all EU bathing water sites for the 2018 bathing season, which constitutes a minor drop compared with 2017 (96.0 %). This drop is explained by the opening of new bathing water sites for which an insufficient number of samples had been taken to classify bathing water quality. These new bathing waters are included in the 3.2 % of unclassified bathing waters. The share of bathing water sites in the EU with excellent water quality increased from 83.3 % in 2014 to 85.1 % in 2018. The share of poor quality bathing waters in the EU dropped slightly from 294 (1.4 %) in 2017 to 289 (1.3%) in 2018. Where bathing water quality is poor, it is imperative to assess the sources of pollution in the bathing catchment area and implement management measures where possible. At those bathing sites for which the origins or causes of pollution are difficult to identify, special studies of the sources might be needed. Overall, bathing water quality has been improving over time. It is encouraging to observe that more and more bathing water sites have reached the minimum 'sufficient' quality standard. Furthermore, it is reassuring to note that water quality at more and more bathing water sites can be classified in the highest 'excellent' quality standard.



3.2.5. The Urban Waste Water Treatment Directive

The Council Directive 91/271/EEC concerning urban wastewater treatment was adopted on 21 May 1991. Its objective is to protect the environment from the adverse effects of discharges and discharges from certain industrial sectors (see Annex III of the Directive) and concerns the collection, treatment and discharge of domestic wastewater, mixture of wastewater and wastewater from certain industrial sectors (see Annex III of the Directive).

Specifically, the Directive requires the Collection and treatment of wastewater in all agglomerations of >2000 population equivalents (p.e.). Where the establishment of a collecting system is not justified either because it would produce no environmental benefit or because it would involve excessive costs, individual systems or other appropriate systems which achieve the same level of environmental protection will be used. Secondary treatment of all discharges from agglomerations of > 2,000 p.e., and more advanced treatment for agglomerations >10,000 population equivalents in designated sensitive areas and their catchments are demanded. There is also a requirement for pre-authorisation of all discharges of urban wastewater, of discharges from the food-processing industry and of industrial discharges into urban wastewater collection systems. Monitoring of the performance of treatment plants and receiving waters has to be carried out and controls of sewage sludge disposal and reuse, and treated wastewater reuse whenever appropriate is to be implemented.



3.2.6. The Nitrates Directive

The Council Directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources (the Nitrates Directive) was adopted on 12 December 1991. It aims to protect water quality across Europe by preventing nitrates from agricultural sources polluting ground and surface waters and by promoting the use of good farming practices. The Nitrates Directive forms an integral part of the Water Framework Directive and is one of the key instruments in the protection of waters against agricultural pressures.

For almost 30 years, the Nitrate Directive has been the main European reference for the protection of water threatened by over-exploitation of agricultural land and the resulting nitrate contamination. The ND was issued in 1991 to “protect water quality across Europe by preventing nitrates from agricultural sources polluting ground and surface waters and by promoting the use of good farming practices”. Accordingly, Member States were asked to designate Nitrate Vulnerable Zones (NVZs), namely areas likely to contribute to surface or ground water contamination of a minimum of 50 mg L⁻¹ of nitrate (NO₃⁻). Within the NVZs, specific mandatory protection measures had to be adopted by farmers and a limit of 170 kg ha⁻¹ year⁻¹ of nitrogen (N) from organic manure was established. Furthermore, within the non-vulnerable zones (nNVZs), Member States had to propose a set of measures to be implemented on a voluntary basis, mainly regarding the periods and weather conditions for fertiliser application. The ND is also one of the Statutory Management Requirements that European farmers are obliged to respect in order to receive the subsidies provided for the cross-compliance system of the Common Agriculture Policy. Individual benefits are reduced proportionally to any detected noncompliance.



3.2.7. The Floods Directive

Between 1998 and 2009, Europe suffered over 213 major damaging floods, including the catastrophic floods along the Danube and Elbe rivers in summer 2002. Severe floods in 2005 further reinforced the need for concerted action. Between 1998 and 2009, floods in Europe have caused some 1126 deaths, the displacement of about half a million people and at least €52 billion in insured economic losses. Catastrophic floods endanger lives and cause human tragedy as well as heavy economic losses. Floods are natural phenomena but through the right measures we can reduce their likelihood and limit their impacts. In addition to economic and social damage, floods can have severe environmental consequences, for example when installations holding large quantities of toxic chemicals are inundated or wetland areas destroyed. The coming decades are likely to see a higher flood risk in Europe and greater economic damage.

Directive 2007/60/EC on the assessment and management of flood risks entered into force on 26 November 2007. This Directive now requires Member States to assess if all water courses and coast lines are at risk from flooding, to map the flood extent and assets and humans at risk in these areas and to take adequate and coordinated measures to reduce this flood risk. With this Directive also reinforces the rights of the public to access this information and to have a say in the planning process. The Directive was proposed by the European Commission on 18/01/2006, and was finally published in the Official Journal on 6 November 2007. Its aim is to reduce and manage the risks that floods pose to human health, the environment, cultural heritage and economic activity.

The Directive requires Member States to first carry out a preliminary assessment by 2011 to identify the river basins and associated coastal areas at risk of flooding. For such zones they would then need to draw up flood risk maps by 2013 and establish flood risk management plans focused on prevention, protection and preparedness by 2015. The Directive applies to inland waters as well as all coastal waters across the whole territory of the EU. The Directive shall be carried out in coordination with the Water Framework Directive, notably by flood risk management plans and river basin management plans being coordinated, and through coordination of the public participation procedures in the preparation of these plans. All assessments, maps and plans prepared shall be made available to the public. Member States shall furthermore coordinate their flood risk management practices in shared river basins, including with third countries, and shall in solidarity not undertake measures that would increase the flood risk in neighbouring countries. Member States shall in take into consideration long term developments, including climate change, as well as sustainable land use practices in the flood risk management cycle addressed in this Directive.



4. PROPOSED EU REGULATIONS FOR WATER REUSE

In 2018, the European Commission has proposed a Regulation of the European Parliament and of the Council on minimum requirements for water reuse. The objectives of this Regulation, namely the protection of environment and human health from the adverse effects of any contamination of reclaimed water will be achieved by setting minimum requirements for water quality, monitoring and preventive measures and the key tasks of a risk management at Union level.

The proposed Regulation on minimum requirements for water reuse, in particular in agricultural irrigation, in combination with other non-regulatory actions as outlined in the Action Plan on Circular Economy is a proportionate response to the objective of fostering the development of safe reuse of treated waste water. It does not go beyond what is necessary to achieve this objective. Important Member States' prerogative on the extent to which water reuse will be encouraged remains untouched. Treated waste water may be used for a wide variety of purposes. In the 2015 Communication 'Closing the loop - An EU action plan for the Circular Economy' (COM/2015/614) and in the Impact Assessment, agricultural irrigation was identified as the main potential source of demand for reused water by having the greatest potential in terms of its higher uptake, scarcity alleviation and EU relevance.

Concerning environmental protection, EU-level action on water management is justified because 60% of EU river basins are international, shared by between 2 and 19 countries (Danube); action taken by a single or few Member State is therefore not sufficient, for instance in relation to quantitative aspects of water management and cross border water pollution. Moreover, if Member States act alone, the technical barriers to water reuse and associated costs are likely to be unnecessarily high. EU intervention on water reuse for agricultural irrigation is justified to prevent that different requirements in individual jurisdictions negatively affect the level playing field (e.g. between farmers and growers) and cause obstacles to the internal market, especially for primary agricultural products. Additionally, different requirements may also be used as an argument to restrict the import of food products from Member States suspected of having lower requirements, as exemplified in the E. Coli outbreak of 2011. The current situation does not guarantee a level playing field between food producers of different countries; the current EU regulatory framework does not yet address the specific modalities of agricultural products irrigated with treated waste water. Addressing such barriers is an appropriate EU level response, taking into account EU food safety, health, agriculture, climate and energy policies. EU action is further justified because different and changing requirements in individual jurisdictions are a barrier to the creation of a level playing field for investments in innovation and for water reuse. It is unlikely that national regulators can coordinate a harmonisation of their regulatory requirements as the number of Member States involved is too large and increasing.

The Regulation has been finally selected as the most appropriate legal instrument to achieve the objectives for the following reasons:

- It would be directly applicable to business operators (next to Member States), thus stimulating market uptake, potentially even in those Member States that are currently not facing the issue of water scarcity, but where good "green" technologies are being produced. This could have a positive impact on research and innovation, as well as the emergence of best technologies and new business opportunities in the internal market.
- A Regulation would come into force much faster than any potential future amendment to the Urban Waste Water Treatment Directive (for which the ongoing evaluation is scheduled to be completed in 2019; any



subsequent legislative proposal for amendment would only be possible following an impact assessment process), thus delivering faster on the main objective of addressing water scarcity.

The proposal for this Regulation aims to lay down minimum requirements for water quality, monitoring and risk management for the safe reuse of treated urban wastewater in order to guarantee protection of human and animal health and the environment, while also addressing water scarcity. More specifically, it covers agricultural irrigation of food crops consumed raw, processed food crops and non-food crops. The proposal requires reclamation plant operators to ensure the reclaimed water for agricultural irrigation complies with a set of minimum requirements laid down in the proposal and any additional conditions set by the Member States. The Annex18 of the proposal defines minimum requirements for the following parameters: (i) Microbiological parameters: Escherichia coli (E.coli), Legionella and (ii) intestinal nematodes (Helminth eggs). Physical-chemical parameters: Biochemical Oxygen Demand 5 (BOD5), Total Suspended Solids (TSS) and turbidity. In addition, reclamation plant operators have to prepare Water Reuse Risk Management Plans based on key risk management tasks such as identification of potential hazards, environment and population at risk, assessment of the environmental and human health risks and identification of preventive measures. Furthermore, the proposal sets out requirements about the information that Member States should make available to the public concerning water reuse, including the quantity and quality of the reclaimed water, permits granted or modified and results of the compliance checks stemming from the Regulation. Annex 3 provides an information sheet detailing the main provisions of the proposal for a Regulation on water reuse.



5. CONCLUSIONS

Despite increasing levels of water stress across the EU and a large potential to reuse treated wastewater, the water reuse remains limited and unregulated in the different Member States. Currently only five countries have compulsory standards on water reuse enforced through specific water reuse legislation - Cyprus, France, Greece, Italy and Spain. Water reuse standards exist also in Portugal but they become binding only when included in water reuse permits. Even though indications of guidelines preparation were found for some other Member States (most notably Malta), the desk research carried out for this deliverable did not find any evidence of further developments, existing drafts or news. It is possible that Member States, which had considered the development of standards or guidelines for water reuse, put off these plans in anticipation of the adoption of the Commission Regulation on water reuse.

Effective EU legal regulation of recycled water would provide potential for its reuse and not hinder its progress, it would accelerate the overall reuse of water, not only in agriculture, but in many more areas, where substituting fresh water for recycled would be adequate. And even though the regulation would be fit-for-purpose, this would not suffice to catalyze the reuse of recycled water, since member states on national level usually determine the state-of-play, particularly economic, such as prices for individual water wells, prices for concession for water pumping etc., which are usually ridiculously low compared to “at cost” price of recycled water. Only efficient and though through policy measures that would encompass a demand driven approach to reuse of treated water would achieve a significant change in increase of water reuse.



6. REFERENCES

European Commission websites:

- I. https://ec.europa.eu/environment/water/index_en.htm,
- II. https://ec.europa.eu/environment/water/water-framework/index_en.html
- III. https://ec.europa.eu/environment/water/water-nitrates/index_en.html
- IV. https://ec.europa.eu/environment/water/water-bathing/index_en.html
- V. https://ec.europa.eu/environment/water/water-urbanwaste/index_en.html
- VI. <https://www.eea.europa.eu/policy-documents/groundwater-directive-gwd-2006-118-ec>
- VII. https://ec.europa.eu/environment/water/water-drink/legislation_en.html
- VIII. https://ec.europa.eu/environment/water/flood_risk/
- IX. European Commission (17 March 2017). *Optimising water reuse in the EU - Final report (Part 1)*
- X. Commission for the Environment, Climate Change and Energy (2018). *Water Reuse - Legislative Framework in EU Regions*
- XI. European Commission, Joint Research Centre 2017, *Minimum quality requirements for water reuse in agricultural irrigation and aquifer recharge - Towards a water reuse regulatory instrument at EU level*
- XII. Hodgson S., *Modern water rights - Theory and Practice, Legislative Study, Food and agriculture organization of the UN, Rome, 2006*
- XIII. Caponera D., *Principles of Water Law and Administration, 2nd Edition, Taylor & Francis Group, London, 2007*
- XIV. Tarhule A (2017); *The future of water: Prospects and challenges for water management in the 21st century. Competition for Water Resources, (Elsevier)*
- XV. McDonald, R.I., Weber, K., Padowski, J., Flörke, M., Schneider, C., Green, P.A., Gleeson, T., Eckman, S., Lehner, B., Balk, D., Boucher, T., Grill, G, and Montgomery, M. (2014). *Water on an urban planet: Urbanization and the reach of urban water infrastructure. Global Environmental Change, 27, pp.96-105*
- XVI. Van Hattum T. et.al., *Towards Water Smart Cities, Climate adaptation is a huge opportunity to improve the quality of life in cities, report number 2787 of Wageningen Environmental Research, 2016*
- XVII. *Use of freshwater resources, European Environmental Agency, 10.10.2018*
- XVIII. *Close up – Water in the city, European Environmental Agency, 30.08.2018*
- XIX. European Commission, *IMPACT ASSESSMENT, Proposal for a Regulation of the European Parliament and of the Council on minimum requirements for water reuse, May 2018, Brussels*
- XX. *Strategic Implementation Plan, European Innovation Partnership Water, Brussels, 2015*