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PhD Thesis

Water Utility Services in Transition: Legal Perspectives on Ownership, Governance, and Regulation in Hungary and Romania

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I dedicate this dissertation to those who came before me, to the generations of my family who never had the opportunity to pursue a university education, and whose sacrifices, strength, and hopes paved the way for me to be here today.

Most of all, I dedicate it to my mom, who guided me for as long as she could and who, I know, continued to guide me from above. To my sister, who was there for me every step of the way, through every success, doubt, and difficult moment. To my dad, who has always been proud of me. To my whole family and my wonderful friends, who believed in me, encouraged me, and reminded me to keep going. And to my partner, who was always there, with endless patience, love, and support.

I am deeply grateful to my supervisor, Prof. Dr János Ede Szilágyi, for the guidance, patience, and support throughout this long journey, and to all the professors who helped me along the way, especially during the more difficult moments and through the many, many revisions that eventually brought this dissertation to life.

I am also grateful to the Central European Academy, which became an important part of my academic journey and gave me the opportunity to grow as a researcher, to learn from wonderful colleagues and scholars, and to become part of an international academic community.

A PhD may have one name written on its cover, but it is never truly completed alone. A little piece of everyone who supported me along the way is somewhere in these pages.

Recommendation

Hereby, I submit my recommendation of the PhD dissertation entitled *"Water Utility Services in Transition: Legal Perspectives on Ownership, Governance, and Regulation in Hungary and Romania"* prepared by Ágota Szekeres under the framework of the doctoral programme of the Deák Ferenc Doctoral School of Law at the Faculty of Law of the University of Miskolc.

The dissertation addresses a particularly timely and complex topic situated at the intersection of public utility regulation, environmental law, European Union law, and public governance. Water utility services have become increasingly significant not only from the perspective of infrastructure and public administration, but also in relation to environmental sustainability, affordability, human rights protection, and climate resilience. The dissertation examines the transformation of water utility governance models in Hungary and Romania, while placing these developments into a broader European legal and regulatory context.

The dissertation is structured around the three central pillars of ownership, governance, and financing of water utility services. Within this framework, the candidate analyses the historical and legal evolution of the sector, focusing on the changing relationships among the state, municipalities, regulatory authorities, and market actors. Particular attention is devoted to the interaction between public service obligations, cost recovery requirements, and the protection of access to water as an essential public need.

The first chapters establish the theoretical and methodological foundations of the research, define the concept of governance in water services, and outline the comparative legal methodology applied throughout the dissertation. The analysis then examines the Hungarian and Romanian water sectors, tracing their respective historical trajectories from centralised state-controlled systems through decentralisation and fragmentation to contemporary forms of remunicipalisation and recentralisation. The dissertation further places these developments within wider European debates concerning privatisation, public control, regulatory independence, and sustainable financing.

The research demonstrates a high level of familiarity with both the theoretical foundations and the practical challenges of water utility governance. The dissertation is based on an extensive analysis of legislation, regulatory frameworks, policy documents, case law, and comparative academic literature. The candidate successfully combines doctrinal legal analysis

with interdisciplinary perspectives related to governance, economics, and public administration.

The dissertation presents credible scientific results and reflects the candidate's independent research. In my opinion, the dissertation makes a valuable contribution to the legal scholarship concerning water utility services and comparative public utility regulation in Central and Eastern Europe. Furthermore, the thesis meets the formal and substantive requirements of the Doctoral School.

Budapest, 2026.05.07.

Supervisor:
Prof. Dr. János Ede Szilágyi



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I. Introduction

In recent years, the overuse and pollution of water have threatened our ecosystems[1] and lives; this is evident in the overwhelm of our water utility service governance, water governance, and a crisis with a major economic impact. Access to safe and affordable water is one of the biggest problems of our century, with issues arising from environmental degradation, such as drought, and from human rights concerns. "The current global water crisis is seriously challenging the water management, requiring an extensive sweeping adaptation for consumption and production patterns."[2] However, as the research shows, the crisis of poor water management can't be combated by management alone.[3] We should view this problem as we view water: a fluid, ever-changing resource that seeps through all aspects of law and requires a multidisciplinary approach to fight for water for all.

In Central and Eastern Europe, the number of cases and articles, including environmental catastrophes, has increased over the last two decades.[4] This highlights our main problem: despite our efforts to inform and raise awareness of the importance of combating water and environmental degradation, our society still focuses on economic growth.[5] Environmental degradation in the water sector is often not experienced as an immediate crisis, and in Europe, this phenomenon is still not at the forefront of public debate.

However, in reality, it is what Rob Nixon describes as "a violence that occurs gradually and out of sight… a violence of delayed destruction".[6] This perspective shifts the analysis from sudden breakdowns of the water systems to long-term processes of underinvestment and institutional neglect. Moreover, a notable shift in water service ownership and governance is also evident. Tensions between public and private ownership rise, and the focus shifts to this debate, pushing governance to the back. Over the last three decades, privatisation has surged across many European countries, including a large number of intriguing examples. Examples of good and bad, which seemingly fuel the big debate between public and private, but in the end, it collides with our main idea, that even in tension between these two, we have to give

[1] Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2022: Impacts, Adaptation and Vulnerability*, Cambridge University Press, 2022.
[2] Di Marco, A. (2023) 'Water democracy under European Union law: Requiring participatory services management', *Utilities Policy*, 84, 101648, p. 1.
[3] Barbier, E.B. (2019) *The Water Paradox: Overcoming the Global Crisis in Water Management*. New Haven: Yale University Press.
[4] Wassersug, S.R. (1994) 'Limiting Environmental Liabilities in Privatisation in Central and Eastern Europe', *Environmental Claims Journal*, 6(4), p. 391.
[5] Wassersug (1994), p. 392.
[6] Nixon, R. (2011) *Slow violence and the environmentalism of the poor*. Cambridge, MA: Harvard University Press, p. 2.

space to governance in a way that it can have the best way possible to achieve sustainability and to safeguard water at the highest level.

Safeguarding water is crucial for freshwater ecosystems facing unprecedented stress from pollution, climate change, and overuse. "Water is not a commercial product like any other but, rather, a heritage which must be protected, defended and treated as such."[7] By the same token, the Intergovernmental Panel on Climate Change (IPCC) warns that "dramatic overconsumption and pollution of freshwater…is threatening billions of lives and causing irreparable damage to the world's ecosystems".[8] Moreover, humanitarian and equity points of view show, as the UN Special Rapporteur has observed, "[i]nequality is a striking element of the global water crisis. While some people and communities struggle to survive on a few litres per day, businesses and people in wealthy States consume vast quantities of water".[9] This nexus shows the environmental fragility and social injustice that we need to fight and requires a regulatory framework that is as a water ecosystem, all-inclusive and reactive to change and pressure to safeguard what is important, the environment as ecological resilience[10] calls for, and the people who need to live in it.

The European Union has a different approach to water service regulation regarding law and policymaking. It is, on the one hand, a market-oriented approach, highlighted by the full cost-recovery[11] set out in Article 9 of the Water Framework Directive (WFD).[12] On the other hand, it has a strong and detailed environmental and public interest shield in place, like the polluter pays principle, mandatory public participation, or a circular economy shift, just to name a few, that seek to "influence consumption and production patterns" through stakeholder participation.[13] This dualism creates a certain tension between the EU's goals that compete with each other.

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[7] Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for Community action in the field of water policy [2000] OJ L 327/1, recital 1.

[8] Intergovernmental Panel on Climate Change (IPCC) (2023) *Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Geneva: IPCC.

[9] United Nations Human Rights Council (2021) *Human Rights and the Global Water Crisis: Water Pollution, Water Scarcity and Water-Related Disasters. Report of the Special Rapporteur on the Issue of Human Rights Obligations Relating to the Enjoyment of a Safe, Clean, Healthy and Sustainable Environment*, UN Doc. A/HRC/46/28.

[10] Massarutto, A. (2007a) 'Urban water conflicts: An ecological-economic approach', *Urban Water Journal*, 4(3), pp. 195–210.

[11] For further discussion, see Massarutto, A. (2007b) 'Water pricing and full cost recovery of water services: Economic incentive or instrument of public finance?', *Water Policy*, 9(6), pp. 591–613.

[12] Directive 2000/60/EC, Art. 9(1).

[13] European Commission (2020) *A New Circular Economy Action Plan for a Cleaner and More Competitive Europe*, COM(2020) 98 final; European Commission (2019) *The European Green Deal*, COM(2019) 640 final; European Commission (2015) *Closing the Loop – An EU Action Plan for the Circular Economy*, COM(2015) 614 final.

From this, we can observe that the water crisis is not just environmental; it is also profoundly social.

The EU recognised the critical importance of water, especially in recurring droughts and scarcity.[14] In recent years, this has been transposed in the light of the circular economy,[15] where water services have an effect on infrastructure design and also patterns of consumption and production.[16] Water services would benefit from the use of the three Rs 'reduce, reuse, recycle' that are not a purely technical process but a conversion that reshapes consumption and production involving the public.[17] This idea is the focal point of other authors[18] works, as well as indicated by the World Water Council, which adds

> "Set up, review and adapt participatory mechanisms to engage water-related stakeholders in policy design, implementation and decision-making for greater awareness, conflict prevention, social buy-in and more inclusive, effective and outcome-oriented water policies. [The inclusion of the public would] induce a shift towards more sustainable and responsible production and consumption practices".[19]

A human rights angle on the same problem can also highlight disparities, as the right to water remains contested.[20] Dealing with concepts requires letting go of traditional rights and abstract values. To understand the legal problem we are facing regarding the right to water, we need to explore an example, such as counterexamples of the right to freedom of expression, participating in a religious community or maintaining physical integrity, which are essential

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[14] European Commission (2007) *Addressing the Challenge of Water Scarcity and Droughts in the European Union*, COM(2007) 414 final; European Commission (2012) *Report on the Implementation of the Water Framework Directive (2000/60/EC)*, COM(2012) 670 final, point 5.3.

[15] European Commission (2020), COM(2020) 98 final, point 3.7; European Commission (2019), COM(2019) 640 final, points 2.1.3–2.1.8; European Commission (2015), COM(2015) 614 final, p. 12.

[16] European Environment Agency (2021) *Water Resources across Europe: Confronting Water Stress*. Luxembourg: Publications Office of the European Union.

[17] Dyer, M., Wu, S.H. and Weng, M.H. (2021) 'Convergence of public participation, participatory design and NLP to co-develop circular economy', *Circular Economy and Sustainability*; see also Glass, L.M. and Newig, J. (2019) 'Governance for achieving the Sustainable Development Goals', *Earth System Governance*, p. 2.

[18] Di Marco (2023), p. 1.

[19] World Water Council (2022) *Dakar Declaration: A Blue Deal on Water and Sanitation Security for Peace and Development*.

[20] Szilágyi, J.E. (2018) *Vízszemléletű kormányzás – vízpolitika – vízjog*. Miskolc: Miskolci Egyetemi Kiadó, p. 210; see also Horváth, M.T., Bartha, I. and Szilágyi, J.E. (2018) 'Hó és sár: A víz, mint érték vagy érdek', *Közjogi Szemle*, 11(3), pp. 14–19; Raisz, A. and Szilágyi, J.E. (2017) 'Cross-border issues of the Hungarian water resources', *Rivista Quadrimestrale di Diritto dell'Ambiente*, 7(1), pp. 73–98; Szilágyi, J.E. (2015a) 'A vízjogi szabályozási csomópontok továbbfejlesztésének lehetőségei', *Pro Futuro*, 5(2), pp. 38–54; Szilágyi, J.E. (2015b) 'Vízhez való jog – ábránd vagy immáron valóság?', *Közjavak*, 1(1); Szilágyi, J.E. (2015c) 'Vízhez való jog – ábránd vagy immáron valóság? II.', *Közjavak*, 1(1), pp. 41–43.

but contradictory to the right to water because they lack quantifiable and tangible aspects. Thinking about this abstractly, we see the gap between these two examples: in one, it is enough to prohibit one aspect, in the other, we need economic funding to achieve the same result. These raise important questions, such as: Can water be considered a human right? Water can be at the same time a good and a service, and this duality creates a tension that is further highlighted when we talk about privatising water services. Privatisation promises efficiency but often lacks equity and accountability, and risks treating water as a commodity and not a human right.[21]

The definition of privatisation,[22] adds to the concept of connecting individual choices to collective responsibility while simultaneously weakening political engagement.[23]

But is this really a matter of good versus evil, public versus private, or is there a deeper issue at play? Is privatisation the problem itself, or simply one way of framing the debate? And does a focus on ownership risk obscuring the factors that shape how the public–private ownership divide is understood?

Ownership is a key factor, but solely considering this aspect would be an error, because it should not stand alone. Ownership, as we will argue, changes over time, from private to public, from public to municipalized, and re-centralised again. It is not constant, but grasping the pattern will shed light on the big picture, and the governance and interdisciplinary arguments will gain traction from it. Like a tide that inevitably turns, the trends change, but the core idea of safeguarding water should remain. And what can withstand these tides? Law, governance, resilience and interdisciplinarity can answer the question. Resilience in this dissertation is understood as the capacity of water service systems to maintain functionality over time, despite financial, social, and environmental pressures.

This thesis starts from the idea that ownership is wave-like, in some cases almost cyclical, but never fully circular, as it is always changing and adapting to the current socio-economic and political landscape, while governance determines resilience. The shifts between public and private can be read as successive waves, rising and receding, but it is governance that runs underneath as the deeper current, carrying water services through economic, environmental and social pressure. By examining in depth the cases of Hungary, Romania, and other selected examples from Western Europe, this research shows that governance structures are not separate

[21] Wassersug (1994), p. 393.
[22] For definitions of privatisation along these lines, see Starr, P. (1987) 'The limits of privatisation', *Proceedings of the Academy of Political Science*, 36(3), pp. 124–137, at pp. 124–125; Minow, M. (2003) 'Public and private partnerships: Accounting for the new religion', *Harvard Law Review*, 116, pp. 1229–1270, at p. 1230.
[23] Dorfman, A. and Harel, A. (2016) 'Against privatisation as such', *Oxford Journal of Legal Studies*, 36(2), pp. 400–429, at p. 401.

from, but operate in interaction with, the ownership. These can provide benchmarks for EU Member States. The argument is that resilience in water services depends not only on the cycles of ownership but on the governance frameworks that remain in place when new waves come.

1. Research Questions

This dissertation is guided by the following questions:

1. What can explain the resilience of water utility services in Europe: the legal form of ownership, the quality of governance, or both?
2. How do Hungary and Romania, as Central and Eastern European jurisdictions, reflect broader European "waves" of water service organisation in the light of nationalisation to privatisation, remunicipalisation, and beyond? Can we observe a different trajectory? Can we learn something from these in comparison to the Western trends?
3. Which governance mechanisms, such as regulatory independence, enforceability of service standards, public participation, affordability measures, and environmental safeguards, are the most strongly correlated with resilient and equitable service delivery?
4. To what extent do the experiences of Western European states such as France, Germany, Portugal, Italy, and the United Kingdom confirm or challenge the Hungarian and Romanian trajectories?
5. How and to what extent do EU law and the European Convention on Human Rights shape national discretion in organising and regulating water utilities?

2. Hypotheses

To further deepen the research questions, the following hypotheses are tested in this research:

- Ownership is wave-like. The legal form of ownership of water utilities has historically moved in waves: from public ownership and centralisation, through privatisation and marketisation, towards remunicipalisation and hybrid models. This wave-like pattern is observable across Europe, including Hungary and Romania, and demonstrates that ownership alone does not secure long-term resilience.

- Governance determines resilience. The quality of governance, which is defined in legal terms as the independence and accountability of regulators, the enforceability of service

standards, the existence of legal remedies, citizen participation, affordability mechanisms, and environmental safeguards, is the decisive factor in whether water services can adapt to social, economic, and environmental stressors.

- Comparative law reveals that EU Member States require not only ownership but also benchmarks based on governance. While ownership models vary, EU law and human rights law increasingly impose common expectations of resilience, non-discrimination, and sustainability. A governance-based framework, therefore, offers a more effective legal benchmark for securing human rights and climate adaptation in water services.

3. The Expected Contribution of the Research

The questions set out above are designed to guide the analysis from the description of ownership change towards the evaluation of governance capacity. Their purpose is not to produce a ranking of national systems or to identify one preferable ownership model, but to clarify which legal and institutional conditions allow water services to remain functional, affordable, environmentally sustainable, and accountable over time. In this sense, the research questions also determine the main outputs of the dissertation: the reconstruction of ownership trajectories, the comparison of governance structures, the assessment of selected resilience indicators, and the formulation of governance-based conclusions for the future regulation of water services.

Deliverables:

1. A conceptual framework distinguishing ownership models from governance mechanisms in the regulation of water utility services (linked to Research Question 1).
2. Two detailed national case studies presenting how two countries with similar historical and EU-law starting points have developed different institutional and regulatory responses in the field of water utility services (linked to Research Question 2).
3. An analytical assessment of governance mechanisms through selected qualitative indicators, namely regulatory independence, enforceability of service standards, public participation and transparency, affordability and social protection, environmental safeguards, and resilience duties (linked to Research Question 3).
4. A comparative chapter using Western European models as contrast cases to test whether the Hungarian and Romanian trajectories coincide or diverge from wider European patterns (linked to Research Question 4).

5. An analysis of how EU law and human rights law influence national water service legislation (linked to Research Question 5).
6. A historical-comparative report on ownership changes, including nationalisation and public provision towards privatisation, remunicipalisation, hybrid arrangements, or renewed centralisation (linked to Hypothesis 1).
7. A set of governance-based conclusions and *de lege ferenda* proposals aimed at strengthening water utility services beyond the formal public–private divide (linked to Hypothesis 2 and Hypothesis 3).
8. Dissemination of the research findings through academic and professional forums, including conference presentations and publications, in order to contribute to wider debates on water governance, public participation, and the public understanding of water services. These dissemination activities can contribute to a shift in public and legal understanding by moving the debate beyond the public–private divide and towards a governance-oriented approach to resilient water services.

4. Justification of the Comparative Method

In this research, the main methodology is the functional method[24] and contextual analysis, combined with comparative law. Here, a comparative legal methodology is used in which functional, structural, historical and contextual approaches are treated as complementary rather than mutually exclusive.[25] It examines how different legal systems address equivalent regulatory problems relating to the provision, regulation and resilience of water utility services. Comparison is therefore not limited to formal similarities between statutory provisions but extends to the institutional and regulatory context within which formally different rules perform comparable functions.[26] The objective of this research is not to determine which ownership model is "best" in the abstract, but rather to determine how different legal frameworks address the same functional challenges. As we ask the question of how different legal and institutional systems organise water services so that they remain affordable, financially viable, environmentally compliant and resilient, we venture beyond the mere

[24] Michaels, R. (2019) 'The functional method of comparative law', in Reimann, M. and Zimmermann, R. (eds.) *The Oxford Handbook of Comparative Law*. 2nd edn. Oxford: Oxford University Press, pp. 345–389.
[25] Van Hoecke, M. (2015) 'Methodology of comparative legal research', *Law and Method*, pp. 1–35.
[26] Kischel, U. (2019) *Comparative Law*. Translated by A. Hammel. Oxford: Oxford University Press, ch. 3, 'The Comparative Method', pp. 87–200.

question of whether Romania has the same legal institutions as Hungary.[27] These challenges imply ensuring universal access, affordability, quality, and resilience of water services.

In this analysis, we included two core case countries; namely, Hungary and Romania. The reasons why we determined these can be exemplified by three guiding pillars that resulted in the choice of these countries. The first pillar would be the history of the countries and their civil law traditions. Both belong to the civil law tradition and share post-socialist trajectories, making them comparable yet distinct, giving us examples separate from Western countries and having specific results implementing the same ideas regarding water utility services with different outcomes. The second pillar would be the accession to the EU in almost the same socio-economic environment, Hungary joining in 2004 and Romania not long after in 2007.[28] Both are EU Member States, subject to the same supranational obligations under the Water Framework Directive, Drinking Water Directive, and the Charter of Fundamental Rights. The third and final pillar would be the core example of our research, that ownership is wave-like, and changes can occur swiftly, impacting the resilience of the water services if the governance is affected by it. Both countries have experienced rapid transitions in ownership and regulation, providing fertile ground for testing the hypothesis of wave-like ownership and governance-driven resilience.

Moreover, in some cases, it was imperative to use comparative contrasts from other European countries; this list includes France, Germany, Portugal, Italy, and the United Kingdom. The question arises: Why examine a few and not the integrity of all the countries, in other words, what are the impulses in choosing some and excluding others?[29] To build a *lege ferenda* for water service governance, we must ensure that well-known cases are also exemplified, like France and England, and both sides of the same coin should be illustrated.

Hungary and Romania constitute the principal comparative jurisdictions. Their selection permits detailed comparison between two Central and Eastern European Member States subject to the same overarching EU water acquis but characterised by different trajectories of utility organisation, regionalisation, ownership and regulatory development. Germany, France, Portugal, Italy and the United Kingdom are used selectively as comparator jurisdictions where

[27] Comparison should begin from the function/problem, rather than from domestic doctrinal categories; See: Zweigert, K. and Kötz, H. (1998) *An Introduction to Comparative Law*. Translated by T. Weir. 3rd edn. Oxford: Oxford University Press.
[28] Council of the European Union (no date) *Timeline – Accession of EU Member States*.
[29] Oderkerk, M. (2001) 'The importance of context: Selecting legal systems in comparative legal research', *Netherlands International Law Review*, 48(3), pp. 293–318.

their institutional experience illuminates particular questions concerning ownership restructuring, remunicipalisation, regulation or financing.

In the case of France, the country represents a long tradition of private delegation, now partially reversed through remunicipalisation. In the German case, we will examine a federal model where the ownership of water services is predominantly public, with a strong municipal control. In the Portuguese case, we examine a transition from privatisation to remunicipalisation, and we introduce the concept of national social tariffs. Italy is a good fit to examine because it gives a different perspective from the core two countries, where ownership is formally public, but tensions still arise regarding the governance, also its 2011 referendum parallels Hungary's 2011 change in water utility service approach. In the case of the United Kingdom (England and Wales), as the only European jurisdiction to have fully privatised its water services without subsequent remunicipalisation, we examine a different regulatory monopoly model. This highlights that, even where either a public or a private model predominates in our examples, poor performance cannot be attributed to the model itself, but to governance failures embedded in the system.

These cases are chosen for their doctrinal and regulatory model differences, not to achieve geographical balance. In the dissertation, these diverse examples allow us to analyse whether governance indicators, rather than ownership structures, better explain resilience in practice.

5. Roadmap of the Dissertation

The three leading pillars of the dissertation are ownership, governance, and financing of water utility services. The chapters of the dissertation revolve around these three main pillars. The nine chapters move from theory to case studies, comparison, and normative proposals.

Chapter I introduces the topic by placing water utility services within the wider framework of human rights, environmental protection, and climate adaptation. It then sets out the research questions and hypotheses, while making a clear distinction between waves of ownership and the resilience of governance. It touches upon the importance of this topic and how the thesis can play a role in changing how we view water services.

Chapter II presents the methodology, explaining the functional comparative approach and the criteria for case selection, while defining the governance indicators used throughout the study.

Chapter III develops the theoretical framework, addressing ownership, defining governance in legal terms, and conceptualising resilience as a principle of public service law, while integrating the idea of resilience into water law.

The core of the dissertation is the national case studies developed in Chapters IV and VII. In Chapter IV, first, we examine Hungary in depth, going through the integration, fragmentation, and remunicipalisation waves of water services, which over time evolved into a more centralised system. Second, we examine in depth the case of Romania, focusing on Law No. 241/2006 and subsequent reforms, and the role of regional operators.

In Chapter V, we explore how water services are organised at various levels through the case studies of governance. Starting from the EU framework and Article 9, we refocus on Hungary and Romania by analysing how institutional and regulatory functions, and cross-level interactions, influence the sector. From the examination, we should conclude that governance determines accountability, coordination, and service delivery.

In Chapter VI, we examine the financing part of water services through the two case studies of Hungary and Romania. The revenue models, affordability limits, and the tension between cost recovery and social protection are examined in the wider EU context, including macroeconomic constraints and financial pressures. Financing water services needs to move past the technical questions, as it can actually shape how water services function and how far they can adapt over time.

Chapter VII presents examples from France, Germany, Portugal, Italy, and the United Kingdom, comparing them to Hungary and Romania. It looks for patterns across the different ownership models and governance arrangements, and applies the indicators set out earlier in the dissertation. This makes it possible to test the main argument in a more structured way, and shows that differences in performance and resilience seem to depend less on whether ownership is public or private, and more on how governance actually works in practice.

Chapter VIII builds on the dissertation's findings and offers normative proposals. It places the results within the framework of EU law and develops a *de lege ferenda* approach to water governance in the European Union. The argument is that no clear, correct ownership model can be established, as the tension between affordability and cost recovery will always exist, but proposes a coherent framework, supported by EU-level coordination to achieve environmental and social objectives, through governance.

In the final Chapter IX, the research questions and hypotheses of the dissertation are revisited, concluding that while ownership structures tend to move in waves, the resilience of water services also depends on governance. Concluding that it is less about whether systems are public or private, and more about whether they are able to coordinate, regulate, and finance water services in a way that holds up under economic, environmental, and social pressure.

II. Methodology

As we established earlier, the research adopts a comparative legal methodology: doctrinal analysis and functional analysis, taking into account the interdisciplinary elements of the topic.

This way, we can see a clear path of evolution of the regulatory framework of water services in the examined countries. Going beyond the sectoral analysis, the details of public law, economic regulation and environmental law are all inspected to reveal the hybrid nature of the water services.

The primary focus falls on Hungary and Romania, using comparative tools with selected Western European examples, to complete the post-socialist transformation and mature regulatory systems. Looking past geographical proximity, we strive to show the different configurations of ownership, governance structures and financing mechanisms. This will give the backbone of the functional comparison and how seemingly similar legal obligations produce divergent outcomes.

Methodologically, we move on to the pre-established three pillars of the research, namely: ownership, governance and financing. To test our hypothesis, particular emphasis is placed on governance indicators, including regulatory independence, enforceability of service standards, affordability mechanisms, transparency, environmental safeguards, and resilience duties.

Policy-oriented evaluation is used for the doctrinal analysis using reports and data from legal norms, international and national organisations, and EU institutions. This will bridge the gap between law in the abstract and law in real life.

Finally, the methodology incorporates a normative dimension, developing *de lege ferenda* proposals and governance-based policy recommendations at the EU level.

1. Methodological Reflections

This dissertation is based primarily on a legal and comparative approach. The aim was not only to describe how water services are regulated, but to understand how different legal and institutional choices influence the functioning of the system in practice, through the selected country examples.

The comparative method was used, as water services are organised differently across Europe, and no single national system can explain the broader dynamics of the sector, and its ideal approach. By focusing on Hungary and Romania and placing them in a wider European context, the analysis makes it possible to identify patterns that would not be visible within a

single jurisdiction. The comparison does not aim to rank systems or to find the correct one, but to understand how different models respond to similar pressures.

The main cases in the dissertation, Hungary and Romania, were selected because they share a similar historical starting point and similar waves of ownership change but have developed in different directions. Both systems went through phases of centralisation, fragmentation, and reform. However, the current structures differ significantly, with one being more centralised than the other. Moreover, by including examinations and comparisons with the main cases, Western European examples, such as France, Germany, Portugal, Italy, and the United Kingdom, provide additional perspectives. This way, the analysis moves beyond regional specificities and further develops on the different approaches that can either underline or contradict the directions taken by the Hungarian and Romanian legislators.

The dissertation heavily focuses on legislation, regulatory frameworks, and institutional structures, as these define the formal organisation of water services. This approach enabled a structured, in-depth examination of governance, accountability, and financing mechanisms. However, water services can't be examined just by the legal frameworks; thus, financial, political, and technical approaches also need to be taken into account.

The analysis also incorporates elements from other fields, in particular economic and policy considerations, but only to the extent necessary to understand the legal framework. The aim is not to provide a full interdisciplinary analysis, but to remain within a legal perspective while recognising its limits.

Moreover, differences in terminology, data availability, and institutional structures can differ across the examined countries, which can cause problems in using the comparative method. As legal systems do not always use the same concepts, and similar terms may have different meanings in different contexts, or may be nonexistent. In addition, data availability and quality can vary across countries.

Another important point is how far the analysis moves between abstraction and concrete examples. The dissertation moves between general principles, such as cost recovery or governance, and concrete national examples. This is necessary in order to connect EU-level requirements with national implementation.

Finally, the research takes a problem-oriented approach. Instead of starting from a fixed model, it focuses on a central question: what determines the resilience of water services in practice, ownership or governance? This allows the analysis to remain flexible and to follow the development of the argument across different systems. The conclusions are therefore not based on a predefined framework, but emerge from the comparison.

This methodological approach is used in the dissertation to identify the factors that influence how water services function through the lens of law without aiming for a universal solution. In this regard, the analysis seeks to clarify the relationships among ownership, governance, and financing.

2. Limits of the Analysis

The dissertation also has its limits, which need to be acknowledged in order to understand the scope and weight of the conclusions. The aim of the thesis is not to provide a complete picture of all water governance models in the European Union, but to analyse specific systems in depth and to draw conclusions from them.

The first limitation of the dissertation is linked to the availability and quality of data. In Hungary, the sector has changed significantly in recent years, moving towards a more centralised model. This has strengthened state control, but at the same time it has made parts of the system less transparent. Detailed financial data, especially on costs and investments, is not always easy to access, and it is often not really comparable over time. Because of this, it becomes harder to assess the actual effects of tariff policies or to draw firm conclusions about the long-term sustainability of the system. In Romania, the problem is the same but from a different angle. The Romanian water sector is more fragmented, with multiple regional operators with varying local conditions. While more information is formally available, the lack of uniformity across operators makes comparison more difficult. Data is often not fully harmonised, and differences in governance structures, service levels and financial arrangements can distort the data process.

The second limitation concerns the comparative approach. The thesis focuses primarily on Hungary and Romania, with additional examples from the selected European models. These examples are used to illustrate different governance and financing solutions, but they do not represent the entirety of the European Union, which employs different solutions and models. Water services are organised in highly context-dependent ways, not just in Europe, but everywhere in the world, influenced by historical, political and institutional factors. Therefore, not all findings of this research can be extended automatically to all Member States. The comparison aims to highlight patterns and differences, and not define one correct model.

The research is grounded in legal examination, and this provides a clear structure on how water services are organised and governed. However, water services go beyond the law, as economics and infrastructure also play a key role. Legal rules set the framework, but they do not fully determine how systems function in practice.

In practice, financial constraints, political views, and technical conditions are equally important when we examine water services. For example, tariff regulations may formally reflect cost-recovery principles, but political decisions can limit their application. Or investment obligations may exist in law, but available funding may limit them. This gap between law and practice cannot be examined solely through legal analysis.

Another limitation is the fast pace of change in the sector, as climate pressures, infrastructure needs, and evolving EU policies continuously redefine its limits and resilience. Some of the developments analysed in this thesis are still ongoing, and their long-term effects are not yet fully visible. With the change of political views in some countries, this can signal a shift in water service models as well; some can become more central, and others can open up to fragmentation. The conclusions, therefore, reflect a specific moment in time, rather than a final stage of development.

Finally, the dissertation does not aim to provide an economic or technical evaluation of water services. Issues such as efficiency, cost structures or engineering solutions are addressed only to the extent that they relate to the legal framework. A more interdisciplinary approach could provide additional insights, but would go beyond the scope of this research.
Recognising these limitations does not weaken the analysis, but it helps to better define what the thesis does and does not claim.

The dissertation's findings should be understood within the framework of a legal and comparative examination of selected systems, offering insight into how different models balance ownership, governance, and financing.

3. Indicators

As the focal point of this research, we developed indicators to support the hypothesis that ownership follows a pattern in most cases, namely, a wave-like pattern. This means that over time, we can observe that systems, particularly in the two core countries, alternate between public and private control, with tweaks here and there. This can be associated with the change and evolution of political, economic and societal conditions. On the other hand, the resilience of water services and their long-term effectiveness are not determined solely by who owns them. The key factor in having a resilient water service is governance that transcends the volatility of ownership, establishing a strong legal, institutional, and procedural framework to guide it.

Our comparative legal analysis reveals that diversity of ownership models does not, in itself, explain variations in the fulfilment of human rights or the capacity of water systems to

adapt. Instead, it is the strength of governance structures that accounts for whether these systems are equitable, sustainable, and resilient. This observation points to the need for a shift in regulatory focus.

The need for governance-based benchmarks outweighs the prioritisation of ownership models. With this, we don't want to undermine the importance of ownership models and their role in creating a resilient water service, but rather highlight and shift the focal point. These benchmarks should assess factors such as regulatory effectiveness, democratic oversight, long-term planning for environmental challenges, and mechanisms for community engagement.

To test this hypothesis, the research uses a functional comparative law approach. Instead of staying at the level of formal rules or institutional design, it looks at how these legal frameworks actually work in practice across different jurisdictions. The aim is to see where patterns appear, where systems diverge, and what kinds of problems keep coming up, in order to understand how particular governance features shape environmental outcomes and socio-economic conditions. Within each case, a set of indicators is used to evaluate the performance and resilience of water governance systems. These indicators include:

- Regulatory Independence and Institutional Capacity
- Enforceability of Standards
- Participation and Transparency
- Affordability and Social Protection
- Environmental Safeguards
- Resilience Duties

The indicators are not intended to provide an exhaustive definition of good governance. Their purpose is to create a common framework for examining the central question of the dissertation of whether the resilience of water utility services can be better explained by the legal and institutional framework surrounding service provision than by the ownership structure itself. The indicators therefore focus on those elements that are particularly relevant to the continuity, accessibility, accountability, environmental protection and adaptation of water utility services.

For the purposes of the comparison, each indicator is assessed on a three-point scale from 0 to 2. A score of 0 indicates that the relevant element is absent or only marginally recognised and that there are no clear legal or institutional mechanisms supporting its implementation. A score of 1 indicates that relevant rules or mechanisms exist, but their scope, implementation or enforceability remains limited. A score of 2 indicates a more developed framework in which

the relevant element is clearly recognised and supported by identifiable legal, regulatory or institutional mechanisms.

The numerical values are not intended to provide a quantitative measurement of regulatory performance. They are used as qualitative categories to structure the comparative legal analysis. Consequently, the difference between the individual scores should not be understood in mathematical terms, nor can the indicators reflect every characteristic of a national water utility system. Their purpose is to make the comparison more systematic and transparent.

The framework is also not intended to rank the countries examined or to identify one national system as superior to another. A higher score in a particular category does not mean that the water utility system of that country performs better overall. Rather, the indicators help to identify relative strengths and weaknesses in specific areas and to demonstrate how different legal systems respond to similar challenges despite differences in their ownership and organisational structures.

The assessment is based primarily on the legal and institutional frameworks examined in the dissertation and, where sufficient information is available, their implementation in practice. The results should therefore be understood within the limits of comparative legal research. They are intended to identify common patterns and differences between the jurisdictions examined, rather than to provide an empirical measurement of the performance of individual water utilities.

By using these criteria and indicators within a functional comparative framework, the research seeks to identify which aspects of governance actually make a difference to the resilience of water services. The aim is not to arrive at a single ideal model, but to identify what seems to work, what does not, and where governance could realistically be improved. In the comparative Chapter, we assess the quality of governance in water services using the six qualitative indicators. The idea behind these indicators goes beyond examining the legal frameworks and also tries to assess their functional effectiveness.

3.1. Regulatory Independence and Institutional Capacity

The first indicator of Regulatory Independence and Institutional Capacity measures the degree of legal and institutional autonomy granted to regulatory authorities overseeing the water services. An independent regulator should have clear legal powers over tariff setting, service standards, and enforcement mechanisms. A score of 0 is assigned when no independent regulator exists, or when regulatory functions are under direct political control. A score of 1 is

assigned when a regulatory body is formally established but is subject to ministerial override or by political or commercial interests. A score of 2 is awarded to cases where clear legal standards are supported by effective remedies.

3.2. Enforceability of Service Standards

The second indicator of Enforceability of Service Standards assesses the legal enforceability of the water supply's continuity, quality, and safety. A score of 0 reflects the absence of binding standards or the presence of vague and unenforceable provisions. A score of 1 applies when service standards exist, but only weak or symbolic remedies are provided for non-compliance. A score of 2 is awarded where there are clear legal standards supported by effective remedies.

3.3. Public Participation and Transparency

The third Public Participation and Transparency indicator assesses citizens' legal rights to engage in water governance. This can include access to documents, participation in consultations, and representation through consumer councils or similar bodies. A score of 0 is given where no such rights are recognised. A score of 1 is given when just limited or symbolic participation is recognised, without meaningful influence on decision-making. A score of 2 indicates robust and enforceable rights to participation and transparency.

3.4. Affordability and Social Protection

The fourth indicator of Affordability and Social Protection measures the extent to which the legal framework includes provisions to ensure that water services remain affordable. This is particularly important for the vulnerable and low-income users. A score of 0 indicates the absence of affordability measures or social protection mechanisms. A score of 1 applies where some support exists, but only on an ad hoc or local basis. A score of 2 reflects a legal obligation to implement social tariffs and protective measures such as prohibitions on disconnection for non-payment in cases of economic hardship.

3.5. Environmental Safeguards

The fifth indicator of Environmental Safeguards assesses the legal integration of environmental objectives, particularly those arising from the EU Water Framework Directive and broader sustainability requirements. A score of 0 is applied when environmental standards are absent,

ignored, or systematically unenforced. A score of 1 is applied where such standards exist, but enforcement is inconsistent or inadequate. A score of 2 reflects strong legal compliance with EU environmental law.

3.6. Resilience Duties

The final indicator of Resilience Duties examines whether countries have legal duties to ensure the resilience of water systems. A score of 0 is assigned where no resilience obligations are defined. A score of 1 reflects the existence of resilience plans or policies that are not legally binding. A score of 2 is given where there is a clear legal duty to prepare for and respond to environmental and systemic risks.

III. Theoretical Framework

1. Terminology

This dissertation uses several key concepts that do not always carry the same meaning across legal texts, policy documents, or academic writing. For this reason, it is necessary to find common ground in the use of terminology. The intention of this is not to give full or exhaustive definitions, but simply to set a clear basis for the analysis that follows through many country examinations.

"Water services" are understood in the sense of the Water Framework Directive, which defines them as: "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) wastewater collection and treatment facilities."[30]

The principle of cost recovery, as set out in Article 9 of the Water Framework Directive, requires that "Member States shall take account of the principle of recovery of the costs of water services, including environmental and resource costs" in their pricing policies.[31]

Governance is used here in a broad sense. It does not refer only to formal institutions, but to the way decisions are made, implemented and controlled. This includes regulatory structures, financing arrangements, accountability mechanisms, and the interaction between different levels of authority. In this sense, governance captures how the system works in practice, not just how it is formally designed. As has been noted, governance refers to "the range of political,

[30] Directive 2000/60/EC, Art. 2(38).
[31] Directive 2000/60/EC, Art. 9(1).

institutional and administrative rules, practices and processes through which decisions are taken and implemented".[32]

Ownership refers to the legal form through which water services are organised, including public, private, and mixed arrangements.[33]

In this dissertation, the term resilience is understood as the capacity of water service systems to maintain functionality over time, despite financial, social, and environmental pressures. It does not mean remaining unchanged, rather, it means adapting without losing the core functions, in our case, the core functions of water services. This reflects a broader understanding of resilience as "persistence of relationships within a system, and is a measure of the ability of these systems to absorb changes of state variables, driving variables, and parameters, and still persist".[34]

Affordability refers to the ability of users to access water services without compromising other basic needs. It is closely linked to social policy and cannot be treated as a secondary issue. As has been noted, water services are affordable when their cost "does not compromise or threaten the realisation of other Covenant rights".[35]

For privatisation, we adopt the following description for the purposes of this analysis provided by Tamás M. Horváth, which states

> "in the field of public services, privatisation refers to the process whereby [a] public goods become private assets, or [b] the private sector undertakes public tasks on behalf of the administration or otherwise performs tasks of community interest".[36]

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[32] OECD, *OECD Principles on Water Governance* (2015); see also Aziza Akhmouch, Delphine Clavreul and Pieter Glas, 'Introducing the OECD Principles on Water Governance' (2018) 43(1) *Water International* pp. 5–12, p. 5.

[33] Bel, G. (2020) 'Public versus private water delivery, remunicipalization and water tariffs', *Utilities Policy*, 62, 100982; McDonald, D.A. (2016) 'To corporatize or not to corporatize (and if so, how?)', *Utilities Policy*, 40, pp. 107–114; Furlong, K. (2012) *Global Water Governance and Neoliberalism: Participation, Accountability and International Financial Institutions*. London: Routledge; Bel, G., Fageda, X. and Warner, M.E. (2010) 'Is private production of public services cheaper than public production?', *Journal of Policy Analysis and Management*, 29(3), pp. 553–577; Bel, G. and Warner, M.E. (2008) 'Does privatisation of solid waste and water services reduce costs?', *Resources, Conservation and Recycling*, 52(12), pp. 1337–1348; Boardman, A.E. and Vining, A.R. (1989) 'Ownership and performance in competitive environments', *Journal of Law and Economics*, 32(1), pp. 1–33.

[34] Holling, C.S. (1973) 'Resilience and stability of ecological systems', *Annual Review of Ecology and Systematics*, 4, pp. 1–23, at p. 17.

[35] United Nations Committee on Economic, Social and Cultural Rights (2003) *General Comment No. 15: The Right to Water*, UN Doc. E/C.12/2002/11, para. 12(c).

[36] Horváth, M.T. (1997) 'Public services, private organization – privatisation in municipalities', *Magyar Közigazgatás*, 5, p. 258; See also: Horváth M., T. (2016) 'Eszik vagy isszák? Az ágazati közszolgáltatások rendszertanáról', in *Közszolgáltatások megszervezése és politikái. Merre tartanak?*, Budapest–Pécs: Dialóg Campus, pp. 25–33.

Under remunicipalisation, we understand the

"return of previously privatised water supply and sanitation services to public service delivery. More precisely, municipalisation is the passage of water services from privatisation in any of its various forms – including private ownership of assets, outsourcing of services, and public-private partnerships (PPPs) – to full public ownership, management and democratic control."[37]

The term re-centralisation refers to the process through which decision-making powers, regulatory authority, or operational control are shifted from local or more fragmented levels back to central state institutions. In the water sector, this often appears as a response to fragmentation, financial instability or coordination problems. It should not be seen as a simple return to earlier models, back to the previous central system, but rather as part of a broader adjustment within changing governance structures.

The term regulation refers to the set of legal and institutional mechanisms that govern water services, which include tariff-setting, licensing, monitoring, and enforcement. It is closely linked to governance, but here the roles of independent authorities and how the rules are actually applied become more important.

Finally, fragmentation refers to the dispersion of responsibilities across multiple actors and levels of governance. In the context of water services, this is not an exception, but a structural feature, as it creates coordination challenges, but also reflects the complicatedness of the system. As has been noted, water governance takes place "between the reality of fragmentation and the need for integration".[38]

These concepts reflect different ways of understanding water services. For this reason, clarifying their meaning presents a part of the argument itself.

2. Water Privatisation in a Historical Context

Water privatisation was shaped by the 1930s Great Depression and the development of the Neoliberalism Movement. Economists linked the crash to overproduction and the excesses of

[37] Lobina, E. (2015) 'Introduction: Calling for progressive water policies', in Kishimoto, S., Lobina, E. and Petitjean, O. (eds.) *Our Public Water Future: The Global Experience with Remunicipalisation*. Amsterdam: Transnational Institute, pp. 6–18, at p. 7.

[38] Edelenbos, J. and Teisman, G.R. (2011) 'Prologue: Water governance as a government's actions between the reality of fragmentation and the need for integration', *International Review of Administrative Sciences*, 77(1), pp. 5–30, at p. 5.

expanding capitalism, leading many to see government regulation as a necessary response. After neoliberalism spread in the United States and the United Kingdom, Margaret Thatcher led not just her country but the rest of Western Europe on a similar trajectory.[39] Whatever becomes popular in the West tends to spread, whether people embrace it or feel pushed toward it.[40] This pushed the global acceptance of privatisation. [41] Alongside the rise of neoliberalism, a broader shift toward the privatisation of government functions began to take shape in the 1970s.[42] From this point on, privatisation increasingly became a political strategy rather than just an economic choice.[43]

The International Monetary Fund and the World Bank also contributed to the spread of privatisation by conditioning loans given to third-world nations, setting neoliberal principles.[44]

The World Bank, governmental organisations, and international development agencies footed the bill for the majority, concentrated on water infrastructure upgrades for developing countries during the period from the 1970s to the 1980s.[45] We can observe that initially in the 1980s, public water systems were the rule and privatised water systems were the exception; this changed in the 1990s.[46] A great example of this is the Thatcher government.[47] In the United Kingdom, the water utilities were sold completely in 1989.[48]

Nevertheless, the British model remains an outlier, because few countries adopted it. Most countries changing their ownership model chose to use PPPs (public-private partnerships). The French model relied on concession agreements that granted private companies long-term contracts of operation and management of water services.

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[39] Petrova, V. (2006) 'At the frontiers of the rush for blue gold: Water privatisation and the human right to water', *Brooklyn Journal of International Law*, 31, pp. 577–613, at p. 591.
[40] Ramos, E. (2017) 'The dangers of water privatisation: An exploration of the discriminatory practices of private water companies', *Earth Jurisprudence and Environmental Justice Journal*, 7, pp. 188–217, at p. 190.
[41] Petrova (2006), p. 583.
[42] Cohen, D. (2016) 'The history of privatisation: How an ideological and political attack on government became a corporate grab for gold', *TPM Features*.
[43] Ramos (2017), p. 191.
[44] Ramos (2017), pp. 190–191.
[45] Kerr, T.M. (1995) 'Supplying water infrastructure to developing countries via private sector project financing', *Georgetown International Environmental Law Review*, 8, pp. 91–108, at p. 91.
[46] According to the Camdessus Report, private water systems operated only in France, parts of Francophone Africa, areas in Great Britain, a few cities in Spain, and some distribution schemes in the United States. See World Water Council (2003) *Financing Water for All: Report of the World Panel on Financing Water Infrastructure (Camdessus Report)*, p. 7.
[47] The government of Margaret Thatcher listed all ten English and Welsh water utilities on the market; this full transfer of assets to private entities became known as the "British model" of water privatisation; See: Dunn, A.D. et al. (2006) 'All the frontiers of the rush for blue gold: Water privatization and the human right to water', *Brooklyn Journal of International Law*, 31(2), pp. 577–613, at p. 584; House of Lords Science and Technology Committee (2006) *Water Management*. 8th Report of Session 2005–06, HL Paper 191, para. 2.8.
[48] World Water Council (2003), p. 7.

Under the PPPs, the public sector typically remains the majority shareholder, while private partners contribute the operational "know-how". This model was often seen as a way to balance efficiency with access and affordability of water.[49]

3. Understanding Water Privatisation

While analysing the term "privatisation", we can find different meanings and wordings. Generally, all refer to the transfer of any public duty or obligation to the private sector; in comparison, a transfer of ownership is more precisely described as "divestiture" or an "asset sale".[50]

In the water sector, privatisation often happens through contractual arrangements that bring in private operators and aim to improve efficiency and competition. Because of that, the distinction becomes necessary between full privatisation, the outsourcing of operations, and other types of contractual involvement.[51]

The privatisation of the water sector is usually discussed through a few main forms, most often including: (1) full privatisation, (2) the privatisation of operations, and (3) different types of contractual arrangements, alongside models such as franchising and open competition.[52]

At its most far-reaching, privatisation means the transfer of ownership itself, for example, when public assets are sold to private investors, whether through a direct sale, the distribution of shares, or listing the company on the market.[53]

In practice, however, water services have been organised through a range of models that differ in how much control is handed over and what role the private sector actually plays.[54] To make sense of this, it helps to distinguish the main approaches more openly.

First, there is full privatisation of water services, in which ownership and control of the entire water system is transferred to a private company or consortium, including responsibility for the entire water cycle. Second, concession contracts, where the public authority retains ownership of the infrastructure but grants a private operator the exclusive right to manage and

[49] Petrova (2006), p. 583.
[50] Petrova (2006), p. 583.
[51] Marin, P. (2009) *Public-Private Partnerships for Urban Water Utilities: A Review of Experiences in Developing Countries*. Trends and Policy Options No. 8. Washington, DC: World Bank, pp. 1–2; Pérard, E. (2008) 'Private sector participation and regulatory reform in water supply: The Southern Mediterranean experience', OECD Development Centre Working Paper No. 265. Paris: OECD, pp. 15–16.
[52] Pérard (2008), pp. 15–16.
[53] World Bank (2006) *Approaches to Private Participation in Water Services*. Washington, DC: World Bank, p. 10; Pérard (2008), p. 16.
[54] World Bank (2006), pp. 8–13; OECD (2009) *Private Sector Participation in Water Infrastructure: OECD Checklist for Public Action*. OECD Studies on Water. Paris: OECD Publishing.

operate the service for a defined period.[55] Third, we have management contracts, in which the private sector is brought in to handle day-to-day operations, while the public authority remains responsible for the system as a whole. A fourth category is PPPs, in which responsibilities and risks are shared between public and private actors, depending on the arrangement's structure. Finally, there are Build-Operate-Transfer (BOT) models, where private actors finance, build, and operate infrastructure for a fixed period before transferring it back to the public sector.[56]

While these models differ in form, they all reflect the same underlying question: how far control, responsibility, and risk should be shifted from public authorities to private actors, and whether we can observe a risk in the shift from public to private control.[57]

As we established, the concept of water privatisation was also shaped by the neoliberal movement.[58] Neoliberalism,[59] in the essence of economic and political theory that limits the public sphere regarding intervention, in agriculture, industries and natural resources. The problematic idea that private ownership can better safeguard the public interest is prominent.[60] And why we would consider this problematic is the fact that it creates the false narrative of one being better than the other, when in reality it all lies in how these are governed and not just the question of who owns it.

Water is considered a natural monopoly because it has the irreversible side of the investments and the high fixed costs attributed to it, which puts a strain on the privatisation efforts. Moreover, we have controversial examples of privatisation of water services, such as the Chile example, where full privatisation was attempted due to the Chicago Boys.[61] Chile became a quasi "laboratory", an "experiment" for the privatisation efforts. This highlights that even when everything is left to the market, problems still come up on the social and environmental side, which shows that simply choosing public or private ownership doesn't automatically lead to fair outcomes. The United Kingdom also sold, along with its water services, British Airways, British Petroleum, and British Telecom.[62] In this example, not just

[55] For more on this, see: Štemberger Brizani, K. (2023) 'Legal protection of concession contracts – At the interface between public and private law and European and national law', *Studia Iuridica Lublinensia*, 32(1), pp. 335–355.
[56] Pérard (2008), pp. 15–16; World Bank (2006), pp. 8–13.
[57] Novaro, P. and Bercelli, J. (2017) 'Water Services are the Bridgehead for a Return to Publicly Owned Utilities in Europe. A Comparative Analysis', *Water Resources Management*, 30(15).
[58] Ramos (2017), p. 189.
[59] See also: Harvey, D. (2005) *A brief history of neoliberalism*. Oxford: Oxford University Press (online edn, Oxford Academic, 12 November 2020).
[60] Ramos (2017), p. 191.
[61] A group of Chilean economists known as The Chicago Boys attended the University of Chicago. They adopted the free-market economic philosophy and spread it back to Chile, where the dictatorship put it into practice; Tania Opazo, 'The Boys Who Got to Remake an Economy' (2016) *Slate*, 12 January.
[62] Ramos (2017), p. 193.

the market-based governance model was at the focal point, but also the quick and easy financial gains.

We can sense a divergence between "competition for the market" and "competition in the market" notions.[63] As water supply is a natural monopoly with its high fixed costs, it tends to reject parallel networks working in the same area. Therefore, "competition for the market" is more relevant in the field of water services. The competition for the license acquisition is more prominent than competing in the market.[64]

On this notion, we can observe different approaches and different degrees of privatisation in the examined countries. The stark comparison without going into much detail shows different outcomes. As a quick example, we can look at the United Kingdom, where the operation of water services has been entirely taken over by the private sector in England and Wales. Another unconventional example would be France, where rather than just going with one or the other, they opted for regional water supply management combining public and private, where regional supply areas are split between various operators, mostly private companies alongside municipalities.[65] In Hungary, the recent remunicipalization or later centralisation of water services also serves a unique perspective.

We recounted many arguments in opposing the privatisation efforts; there are some positive outcomes of these as well. Regarding the country and the private sector involvement, it can also benefit society.

Supporters of water service privatisation usually point to a familiar set of arguments.[66] Private operators are seen as financially stronger, and therefore better able to maintain infrastructure and protect natural resources. They are also considered more technically efficient in managing complex systems.[67] Contractual arrangements can introduce performance incentives, which, in theory, improve service quality. Increased private investment is expected

[63] Szilágyi, J.E. (2013) *Vízjog – Aktuális kihívások a vizek jogi szabályozásában*. Miskolc: Miskolci Egyetem, p. 118.
[64] Wackerbauer, J. (2007) 'Regulation and privatisation of the public water supply in England, France and Germany', *Competition and Regulation in Network Industries*, 8, pp. 101–116, at p. 103.
[65] Wackerbauer (2007), p. 104.
[66] Debaere, P. and Kapral, A. (2021) 'The potential of the private sector in combating water scarcity: The economics', *Water Security*, 13, 100090, pp. 1–11, at pp. 1–2.
[67] Abbott, M. and Cohen, B. (2009) 'Productivity and efficiency in the water industry', *Utilities Policy*, 17(3–4), pp. 233–244; Beesley, M. and Littlechild, S. (1989) 'The regulation of privatized monopolies in the United Kingdom', *RAND Journal of Economics*, 20(3), pp. 454–472; Carvalho, P., Marques, R.C. and Berg, S. (2012) 'A meta-regression analysis of benchmarking studies on water utilities market structure', *Utilities Policy*, 21, pp. 40–49; Helm, D. (2020) 'Thirty years after water privatization—is the English model the envy of the world?', *Oxford Review of Economic Policy*, 36(1), pp. 69–85; Shleifer, A. (1998) 'State versus private ownership', *Journal of Economic Perspectives*, 12(4), pp. 133–150; Hart, O., Shleifer, A. and Vishny, R.W. (1997) 'The proper scope of government: Theory and an application to prisons', *Quarterly Journal of Economics*, 112(4), pp. 1127–1161.

to expand access, particularly in underserved or rural areas. Finally, user charges are framed as a tool to encourage more responsible and efficient use of limited water resources.[68] In some cases, these arguments downplay the real outcome and the impact of these in the long run, which can pose a risk factor on the socio-economic level and hinder the trust of society in these.

4. Human Rights perspective

Water can be imagined in two very different ways.

It can be treated like a tap connected to a bill, something delivered, priced and paid for. Or it can be seen as a shared spring, something that belongs to everyone and must be protected together.

This image was shaped by the rise of neoliberal reforms and the Washington Consensus.[69] In the 1980s and 1990s, the view of water as a service was pushed. This propelled the notions of privatisation, liberalisation, and cost-recovery principles into the limelight across many countries. These reforms did not remain uncontested. They triggered strong social reactions. Water became one of the central arenas of the global justice movement. Over the years, the movement has slowed down, bringing in new problems; however, with the central focus growing on climate change, the movement is as important as it was back in the day.

When the movement was still in its beginnings, an emblematic moment was the Cochabamba Water War in Bolivia.[70] This was an important example where the failure of governance had a negative impact on water utility services. In this case, after the privatisation of the municipal water company, tariffs rose sharply. For many households, access to water suddenly became financially unbearable. Protests escalated into mass demonstrations.

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[68] Wade, J.S. (2008) 'Privatisation and the future of water services', *Florida Journal of International Law*, 20(4), pp. 179–200, at p. 191.

[69] The term *Washington Consensus*, coined by John Williamson in 1989, originally referred to a set of economic policy reforms around which he identified a broad degree of agreement among Washington-based institutions, including the IMF, the World Bank and the U.S. Treasury. These reforms included fiscal discipline, privatisation of state-owned enterprises, trade and investment liberalisation and deregulation. During the 1990s, the term acquired a broader meaning and became increasingly associated with market-oriented and neoliberal reform policies. In the water sector, this broader reform agenda was reflected in increased private-sector participation, greater emphasis on cost recovery through tariffs and efforts to reduce or better target public subsidies; See: Williamson, J. (1990) 'What Washington means by policy reform', in Williamson, J. (ed.) *Latin American Adjustment: How Much Has Happened?* Washington, DC: Institute for International Economics, pp. 7–20; Williamson, J. (2004) 'A short history of the Washington Consensus', paper commissioned by Fundación CIDOB for the conference *From the Washington Consensus towards a New Global Governance*, Barcelona, 24–25 September 2004, pp. 1–14; World Bank (2004a) *Water Resources Sector Strategy: Strategic Directions for World Bank Engagement*. Washington, DC: World Bank, pp. 25–26; World Bank (2004b) *World Development Report 2004: Making Services Work for Poor People*. Washington, DC: World Bank; Bel and Warner (2008), pp. 1337–1348.

[70] Nickson, A. and Vargas, C. (2002) 'The limitations of water regulation: The failure of the Cochabamba concession in Bolivia', *Bulletin of Latin American Research*, 21(1), pp. 99–120.

Eventually, the privatisation contract with the multinational company was terminated, national water legislation was amended, and finally, local public control was restored.[71] Beyond Bolivia, Cochabamba became a symbol of water being more than just a commodity.

With the new millennium, mobilisation around water gained momentum worldwide. Civil society groups, grassroots movements, and transnational networks increasingly rejected the idea of water as a tradable service, and the idea of being a human right that must be guaranteed spread.[72] These developments ultimately contributed to a significant legal turning point.

In 2010, the United Nations General Assembly adopted Resolution 64/292, formally recognising the human right to safe and clean drinking water and sanitation.[73] The United Nations General Assembly acknowledged "the right to safe and clean drinking water and sanitation as a human right that is essential for the full enjoyment of life and all human rights."[74] This marked a turning point. Following this, the Human Rights Council clarified that the right to an adequate standard of living also includes the right to water.[75] This development was further strengthened in March 2011, when the mandate was expanded to include a Special Rapporteur dedicated specifically to the human right to safe drinking water.[76]

Within the European Union, similar mobilisations took place. In countries such as Italy, Ireland and Greece, social movements opposed privatisation and austerity-driven reforms.[77] At the EU level, the successful European Citizens' Initiative "Right2Water" marked an unprecedented moment of transnational participation.[78] The European Union introduced the European Citizens' Initiative, allowing one million citizens from at least seven Member States to call for new EU legislation. It called for water services to be shielded from liberalisation pressures and for access to water to be secured as a human right.[79] These movements went beyond resisting privatisation; they also began to develop alternatives. Among the most

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[71] Nickson and Vargas (2002).

[72] Bakker, K. (2007) 'The "commons" versus the "commodity": Alter-globalization, anti-privatization and the human right to water in the Global South', *Antipode*, 39(3), pp. 430–455, at pp. 430–433; Williams, M. (2007) 'Privatization and the human right to water: Challenges for the new century', *Michigan Journal of International Law*, 28(2), pp. 469–505.

[73] Karunananthan, M. (2019) 'Can the human right to water disrupt neoliberal water policies in the era of corporate policy-making?', *Geoforum*, 98, pp. 244–253.

[74] United Nations General Assembly (2010) *The Human Right to Water and Sanitation*, UN Doc. A/RES/64/292.

[75] United Nations Human Rights Council (2010) Resolution 15/9, *Human Rights and Access to Safe Drinking Water and Sanitation*, UN Doc. A/HRC/RES/15/9.

[76] United Nations Human Rights Council (2011) Resolution 16/2, *The Human Right to Safe Drinking Water and Sanitation*, UN Doc. A/HRC/RES/16/2.

[77] Bieler, A. (2021) *Fighting for Water: Resisting Privatisation in Europe*. London: Zed Books.

[78] van den Berge, J., Boelens, R., Vos, J. (2020) 'How the European Citizens' Initiative "Water and sanitation is a human right!" changed EU discourse on water services provision', *Utrecht Law Review*, 16, pp. 48–59, p. 48.

[79] van den Berge, Boelens and Vos (2020), p. 48.

influential was the idea of water as a commons. In our understanding, the strong opposition to market liberalisation was so powerful because, in these examples, the privatisation failed to keep up the good governance measures.[80] Still, privatisation is not the enemy; the key is how these can handle the burden of governance.

The idea of commons being neither purely state-controlled nor privately owned supports our hypothesis. It refers to resources managed collectively by communities according to shared rules. The concept gained academic prominence through Elinor Ostrom's work on common-pool resources.[81] She challenged the idea that shared resources inevitably lead to overuse, the so-called "tragedy of the commons". She argued that communities can develop stable and effective governance arrangements outside the strict state-versus-market dichotomy.[82]

This idea evolved into a political and normative project. For example, in Italy, the 2011 water referendum was framed around the defence of water as a common good. In Greece and Portugal during the Eurozone crisis, debates and conflicts over water services were often expressed in the same terms.[83] The idea of the commons became both a way to understand the problem and to mobilise around it, offering a model of water governance based on participation and democratic control.

Recognising water as a human right and, at the same time, framing it as a commons both push back against narrow economic views of how water should be financed. They raise a simple but difficult question: can access to water really depend mainly on the ability to pay? They also cast doubt on whether cost recovery on its own is enough as an organising principle. If water is essential to life and recognised as a human right, can it be governed primarily through market logics, or must its financing and management follow a different path?

We can argue that "the derivation of a separate right to water is virtually without precedent",[84] that complicates our question.

The recognition of the human right to water is a deeply problematic issue riddled with obstacles, both economic and social. Its importance is undeniable, but it has limitations. What is considered the right to water? Everyone should have free water, or access is the key? This is clarified in de Albuquerque's definition, which imposes on everyone the right to access

[80] Bakker (2007), pp. 441–448.
[81] Ostrom, E. (1990) *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press.
[82] della Porta, D. (2020) *How Social Movements Can Save Democracy: Democratic Innovations from Below*. Cambridge: Polity Press.
[83] della Porta (2020).
[84] Dennis, M.J. and Stewart, D.P. (2004) 'Justiciability of economic, social, and cultural rights', *American Journal of International Law*, 98, pp. 462–515, at p. 494.

"sufficient, safe, acceptable, physically accessible, and affordable water for personal and domestic use".[85] This definition brings together key elements such as sufficiency, safety, accessibility, and affordability, offering a clear framework for understanding and advancing the right to water at a global level.[86]

However, as we highlighted, recognising water as a human right is not without challenges. The drawbacks, challenges, and risks are significant when trying to define the right to water as a universal human right.[87] However, acknowledgement alone does not necessarily lead to equitable or fair access to the fundamental human right to water.[88] But what are the impediments?

At the most basic level, global water law and governance are fragmented both horizontally and vertically.[89] Different ecological, economic, and social aspects of water are handled through separate systems and institutions, which makes the overall framework difficult to follow and even harder to coordinate.[90] This also raises questions about how effective these rules really are and whether they are seen as fair and legitimate in practice, especially when set against competing priorities and pressures. At the outset, the central problem would be that recognising water as a human right would bring with it the need to ensure access to clean and safe drinking water to everyone, regardless of socioeconomic status. This implies the government's involvement and responsibility to create these measures for all society, and establish safeguards for marginalised groups and to ensure financial support and infrastructural support in impoverished areas to have equitable access to water resources.[91]

Ideally, access to water should never be free from discrimination based on gender, religion, race, or sexual orientation. Yet vulnerable groups often face difficulties accessing water resources, and this is why their inclusion in decision-making processes is essential.

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[85] de Albuquerque, C. (2014a) *Realising the Human Rights to Water and Sanitation: A Handbook*, p. 6.
[86] Sternik, L. (2022) 'Water in the time of COVID: Water insecurity, privatisation, and establishment of the human right to water', *University of San Francisco Law Review*, 56, pp. 517–544, at p. 519.
[87] Roth, D., Boelens, R. and Zwarteveen, M. (2015) 'Property, legal pluralism, and water rights', *Journal of Legal Pluralism and Unofficial Law*, 47, pp. 456–473, at p. 463.
[88] Roth, Boelens and Zwarteveen (2015), p. 463.
[89] As a polycentric governance, it recognizes that water management is complex and interconnected, and no single entity or level of governance can address all the intricacies effectively; See: OECD (2015) *Stakeholder Engagement for Inclusive Water Governance*. OECD Studies on Water. Paris: OECD Publishing, pp. 30–31.
[90] OECD (2011) *Water Governance in OECD Countries: A Multi-level Approach*. OECD Studies on Water. Paris: OECD Publishing, pp. 17–20.; OECD (2021) *Toolkit for Water Policies and Governance*. Paris: OECD Publishing.
[91] UN Committee on Economic, Social and Cultural Rights (2003), paras. 2, 12(c), 14–16, 25–29 and 37.

4.1. Right To Water in The Light of Water Privatisation

UN Special Rapporteur Leo Heller outlined in his report, titled "Human Rights and the Privatisation of Water and Sanitation Services",[92] The risks to human rights in the light of water privatisation and proposed countermeasures.[93] This was built upon the negative experiences of privatisation in different countries throughout the years. Moreover, the Committee on Economic, Social, and Cultural Rights (CESCR) in 2002 formulated General Comment Number 15. This inscribes that the human right to water and privatisation are paralleled with the international human rights framework.[94]

General Comment Number 15 at first called for an in-place strong regulatory system before turning to privatisation.[95] This has evolved into the idea of treating water as a cultural and social acknowledgement rather than just an economic one. It called upon the need to safeguard water rights by the nations and to mediate the public-private discussion and cooperation. With the prominence of water scarcity and climate change, these became more important, and the human right to water became a relevant issue.[96]

4.2. The Case for Public Water Service

We discussed the positive and negative aspects of privatisation, and now we need to examine the contending arguments against the public water sector as well. Fortunately, in the EU, water and sanitation achieved high coverage over the years, almost reaching 100%.[97] These are predominantly the efforts of public water utility services and the governments behind them. However, some countries face difficulties achieving coverage for all citizens. For example, we can look at Romania, where gaps still persist in water service coverage.[98] According to Eurostat,[99] access to drinking water and sanitation in the European Union is generally high, with most of the population connected to public supply and wastewater treatment systems.

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[92] Heller, L. (2020) *Human Rights and the Privatisation of Water and Sanitation Services*, UN Doc. A/75/208, 21 July 2020.
[93] Heller (2020), Part I.
[94] Heller (2020), Part I.
[95] Committee on Economic, Social and Cultural Rights, *General Comment No. 15: The Right to Water (Articles 11 and 12 of the International Covenant on Economic, Social and Cultural Rights)*, UN Doc E/C.12/2002/11 (2002).
[96] Sternik, (2022), p. 517.
[97] van den Berge, Boelens and Vos (2020), pp. 50–51.
[98] Eurostat (no date) *SDG 6 – Clean Water and Sanitation: Statistics Explained*. Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=SDG_6__Clean_water_and_sanitation (Accessed: 26 March 2026).
[99] Eurostat (no date) *Water Statistics – Environment Data*. Available at: https://ec.europa.eu/eurostat/web/environment/information-data/water (Accessed: 26 March 2026).

Moreover, notable disparities remain between Member States, particularly between Western and Eastern regions. Disparities between Hungary and Romania are also observed, as Hungary has a significantly higher coverage of water and sanitation.

As we hinted in the EU, water and sanitation predominantly rely on public entities. Here, the provision is by the municipality. In the EU, water and sanitation services are primarily provided by public entities operated by local, regional, or national authorities. The private sector involvement is an exception.[100]

What strengthens the argument for opting for a public water sector, on the one hand, would be the rights of the communities. The rights of communities are not often at the centre of legal analysis. However, the change in the views on water did not change organically. The communities had always had a stake in water, as no one can fully own it. Water has always been seen as something in which the community has a stake, and no one can fully own it, which resists full ownership, unlike most forms of property that can be entirely privatised.[101]

The slogan "Water is a public good; not a commodity!" gained visibility for this motive when Right2Water opposed profit-orientedness and privatisation, criticising cost-recovery-based water companies. They argued that water is not a commodity to be left to the market, but a human right that States must guarantee.

Some societies embraced this more than others. In Germany, the Right2Water movement coincided with the Concession Directive.[102] Concerns about the potential extension of market rules to water services grew, pushing water services into easier privatisation. However, we need to make a clarification here: the European Citizens' Initiative controversy was not directly centred on the human right to water, but rather on whether water should be treated as a shared community resource or as a market commodity.[103]

We can observe the underlying problem, that introducing market logic into water services can put pressure on the protection of water rights. When pricing becomes the main organising principle, those who cannot afford rising tariffs are the first to be pushed out. In that sense, privatisation can only be reconciled with the human right to water if it is backed by strong safeguards, such as rules against disconnections and effective oversight of pricing, quality, maintenance, and investment. Even then, private operators holding monopoly positions can

[100] Hall, D. and Lobina, E. (2004) 'Private and public interests in water and energy', Natural Resources Forum, 28, pp. 268–277.
[101] Sax, J.L. (2008) 'Understanding transfers: Community rights and the privatisation of water', *Hastings West-Northwest Journal of Environmental Law and Policy*, 14, pp. 33–40, at p. 40.
[102] Directive 2014/23/EU of the European Parliament and of the Council of 26 February 2014 on the award of concession contracts [2014] OJ L 94/1.
[103] van den Berge, Boelens and Vos (2020), p. 55.

still extract profit from the system. The public operation of water services, in many cases, excludes these problems by introducing comprehensive protective measures.

What public operation can be fixed by adding social tariffs, or other mechanisms, privatisation can't. The structural risk of leaving marginalised communities underserved, where investments are not profitable, can deepen existing inequalities. In sectors with natural monopoly characteristics, higher prices and uneven service provision are difficult to avoid. Moreover, the shift toward private operation can narrow the space for public involvement and democratic control.

A profit-focused privatisation can hinder user needs and neglect environmental impacts. Not recognising water and sanitation as an essential public good can be the downfall of the private operation.[104]

5. Conceptual and Legal Foundations

5.1. Evolution of Water Law

The recognition of water as a human right was not instant within global water governance. The right to water was not part of the core human rights treaties at the beginning, but it gradually found its place over time, as its absence became harder to ignore in international policy debates, civil society work, and growing concerns about privatisation and unequal access to water.[105] Water governance has a polycentric nature, fragmented between ecological, social and economic priorities.[106] These tensions are now more visible, as human rights experts and UN bodies increasingly question the impact of trade and investment regimes on access to water and sanitation. Moreover, resistance to the commodification of water in the late 1990s and early 2000s played a key role in shifting the global discourse.

At the UN Water Conference in Mar del Plata in 1977[107], the first coordinated international commitment emerged, but without real binding force. Later, a crucial progress was made with the birth of the Millennium Development Goals (MDGs)[108]These aimed to significantly increase the number of people having access to safe drinking water and basic sanitation by 2015. The MDGs alone could not complete their set goals until the deadline, but served as a

[104] Wade (2008), p. 191.
[105] Hirano, M. (2016) 'Public participation in the global regulatory governance of water services', *Utilities Policy*, 43(A), pp. 21–31, at p. 22.
[106] Pahl-Wostl, C. and Knieper, C. (2023) 'Pathways towards improved water governance: The role of polycentric governance systems and vertical and horizontal coordination', *Environmental Science & Policy*, 144, pp. 151–161.
[107] United Nations (1977) *Report of the United Nations Water Conference*, UN Doc. E/CONF.70/29.
[108] United Nations General Assembly (2000) *United Nations Millennium Declaration*, UN Doc. A/RES/55/2.

good ground to help adopt the Sustainable Development Goals (SDGs) in 2015, which we use today. Significant improvement happened between the two as water was also the focal point of the SDGs, with Goal 6 explicitly referring to equitable and sustainable water management, and the other 13 implicitly including it.[109]

As we mentioned, the turning point was in 2002, with the UN Committee on Economic, Social and Cultural Rights's General Comment No. 15,[110] as it recognised the right to water as essential to the enjoyment of other rights under the ICESCR. This development was followed by the UN General Assembly's 2010 resolution, which formally recognised the human right to safe drinking water and sanitation.[111] The core of this instrument was availability, quality, and affordability.

Today, the human right to water is still treated as a normative framework for policy development; however, the SDG 6 reflects this shift, incorporating principles such as equity, affordability, and non-discrimination.[112]

Its implementation is still uneven, more so when we discuss affordability. As international guidelines suggest that water-related costs should not exceed 3 to 5[113] per cent of the total household income, this remains in most cases just that, as a suggestion, as these costs sometimes exceed the percentage or are not even monitored.[114] Moreover, market-based governance models are still preferred in many regions, growing the opposition between cost recovery and the social aspect.[115]

5.2. The Connection Between Environmental Law And The Right To Water

Environmental law and the right to water are deeply connected, as the protection of water resources impacts the protection of the whole environment. The key element is the protection of the quality and quantity of water at the same time. If we have large bodies of water that are inadequate in quality, it is the same as having good quality water but in scarce quantity. The recognition of the right to water supports society by imposing obligations on countries to

[109] United Nations General Assembly (2015) *Transforming Our World: The 2030 Agenda for Sustainable Development*, UN Doc. A/RES/70/1.
[110] UN Committee on Economic, Social and Cultural Rights (2003), *General Comment No. 15*, UN Doc. E/C.12/2002/11.
[111] United Nations General Assembly (2010), UN Doc. A/RES/64/292.
[112] United Nations General Assembly (2015), UN Doc. A/RES/70/1.
[113] Winkler, I.T. (2012) *The Human Right to Water*. Oxford: Hart Publishing.
[114] Joint Monitoring Programme (WHO/UNICEF) (2015) *Progress on Sanitation and Drinking Water: 2015 Update and MDG Assessment*. Geneva: World Health Organization.
[115] Hirano (2016), p. 23.

facilitate the necessary good quality and sufficient quantity of water for their citizens.[116] This also benefits the environment by managing the given resources and creating the ground rules for resilience and sustainable development.[117]

The right to water has three important pillars: availability, quality, and affordability.[118] The first two depend directly on the condition of ecosystems, while the third is more closely linked to social and governance dimensions. Moreover, environmental sustainability must form part of how the right is understood; access cannot be equated with unlimited or irresponsible use.[119]

The right to water inherently creates a paradox between basic human needs and environmental limitations. This calls for the creation of a counterbalance between the environment and social needs. Striking this balance is one of the most difficult challenges in this area, not least because the concept itself is inherently subjective. Any attempt to define it, especially in terms of affordability, carries the risk of excluding certain groups. What is manageable for some may be burdensome, or even unmanageable, for others. To better understand this, it is necessary to examine the relevant provisions of EU law that underpin this question.

5.3. EU Primary Law

EU legal orders do not expressly recognise the right to water as a human right.[120] A narrower interpretation than the international law. In EU primary law under environmental protection, we can find the protection of water resources. Under Article 3 of the Treaty on European Union[121] we find the definition of sustainable development and the aforementioned environmental protection as the EU's objectives.

Furthermore, Articles 11 and 191 of the Treaty on the Functioning of the European Union[122] place environmental protection as a cross-cutting objective and require the sustainable use of natural resources. Article 192 implements EU-level action on the management of water

[116] Bluemel, E.B. (2004) 'The implications of formulating a human right to water', *Ecology Law Quarterly*, 31, pp. 957–1006, at p. 972.
[117] Winkler (2012), p. 196.
[118] The other element is accessibility, encompassing physical and economic accessibility, non-discrimination, and access to information, as defined in UN Committee on Economic, Social and Cultural Rights (2003), *General Comment No. 15*, para. 12(c), a structure previously employed in *General Comment No. 12* (1999) on the right to adequate food. On this matter, see Montaldo, R. (2022) 'Water protection law and the human right to water from the perspective of EU law', in Milanovic, M. and Behrman, S. (eds.) *The Human Right to Water*. Oxford: Oxford University Press, p. 2.
[119] Gawel, E. and Bretschneider, W. (2016) *Content and Implementation of a Right to Water*, p. 13.
[120] Montaldo (2022), p. 5.
[121] Treaty on European Union (consolidated version) [2012] OJ C 326/13.
[122] Treaty on the Functioning of the European Union (consolidated version) [2012] OJ C 326/47.

resources. Moreover, the Charter of Fundamental Rights of the European Union, in its Article 37,[123] recalls the importance of environmental protection regarding natural resources, as echoed in Article 11 of the TFEU.[124] The TFEU requires Member States to organise access to services of general economic interest in line with principles set out at the EU level, as reflected in Article 14. Moreover, Article 106 subjects providers of these services to the rules of the Treaties, in particular those relating to competition. Where water services fall within this category, the European Union therefore has a legal basis to intervene through legislation.[125]

As we established, in the EU, there is no explicit human right to water, but it can be implicitly found through interpretation. The implicit factor can be found under the TEU that recognises human dignity and the protection of fundamental rights under Articles 2-6. Additionally, the Charter of Fundamental Rights of the European Union contains several relevant provisions, including Articles 1-3 on dignity, life, and integrity, Article 21 on non-discrimination, and Article 36 on access to services of general economic interest. While these provisions do not explicitly recognise a right to water, seen together, they provide a normative basis for its development within EU law, broadly in line with international trends.[126] However, these provisions do not create an explicit right to water, but they define the legal framework within which access, governance, and protection must be structured.

5.4. EU Secondary Law

Neither the EU's primary law nor its secondary legislation explicitly refers to the right to water, but its development has contributed significantly to water protection. The prioritisation of water resource planning was introduced in the 1973 Environmental Action Programme.[127] As a core element of environmental policy, these initial standards have evolved toward higher societal well-being and environmental standards, as drinkable water and bathing water were regulated. These initiatives led to the 1976 Directive 75/440/EEC,[128] which regulated surface water for drinking water production. The directive on drinking water of 1980, later replaced by Directive 98/83[129] regulated the protection of human health from contamination. These were updated

[123] Charter of Fundamental Rights of the European Union [2012] OJ C 326/391.
[124] Montaldo (2022), p. 5.
[125] van den Berge, Boelens and Vos (2020).
[126] Montaldo (2022), p. 5.
[127] Commission of the European Communities (1973) *First Environmental Action Programme*, *Bulletin of the European Communities*, Supplement 10/73.
[128] Council Directive 75/440/EEC [1975] OJ L194/26.
[129] Council Directive 98/83/EC of 3 November 1998 on the quality of water intended for human consumption [1998] OJ L 330/32.

recently by Directive 2020/2184[130], with a more comprehensive list of contaminants and their thresholds. The updates were all welcomed to further facilitate human health by setting more rigorous standards for the states.

One of the core elements to unify the regulation on water was introduced in 2000 with the Water Framework Directive.[131] It sets a high standard, considering the implementation challenges faced by the states and their many infringement proceedings.[132] The European Commission has repeatedly initiated infringement proceedings against Member States for failing to correctly transpose these directives.[133] The WFD does not establish the right to water; in Recital 1 of the WFD, it positions water as a shared heritage, rather than a commodity to be traded with. This marks an important symbolic step toward a more rights-based approach to water. Closely linked to the Framework Directive are the 2006 and 2008 directives on groundwater protection and environmental quality standards in water policy.[134]

Also important to note is Directive 2014/23/EU on the award of concession contracts, which explicitly excludes water sector concessions from its scope. Recital 40 of the preamble recognises water as a public good of fundamental value for all Union citizens.[135] These implicitly strengthen the shift on water, representing a common heritage that law has a duty to shield in the EU.

The Court of Justice of the European Union, in its interpretation, has not affirmed the human right to water; it has brushed the topic.[136] While EU secondary law does not resolve the tension between market logic and the protection of water as a fundamental resource, it structures the legal space within which these can be balanced in practice.

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[130] Directive (EU) 2020/2184 of the European Parliament and of the Council of 16 December 2020 on the quality of water intended for human consumption (recast) [2020] OJ L 435/1.
[131] Directive 2000/60/EC.
[132] The objectives of the Water Framework Directive are set out in Article 1, which aims to establish a framework for the protection of inland surface waters, transitional waters, coastal waters, and groundwater, with the purpose of achieving good water status and preventing further deterioration.
[133] Case C-43/10 *Nomarchiaki Aftodioikisi Aitoloakarnanias and Others* ECLI:EU:C:2012:560; see also Van Calster, G. and Reins, L. (2017) *EU Environmental Law*. Cheltenham: Edward Elgar.
[134] Directive 2008/105/EC of the European Parliament and of the Council of 16 December 2008 on environmental quality standards [2008] OJ L 348/84; Directive 2007/60/EC of the European Parliament and of the Council of 23 October 2007 on the assessment and management of flood risks [2007] OJ L 288/27.
[135] Directive 2014/23/EU.
[136] Anastasi, F. (2022) 'An outline on the right to water in the EU system', *European Studies*, 9, pp. 363–389, at p. 368.

5.5. The Question Of Affordability

One of the key issues regarding water law is affordability. This problem is inherently subjective in nature.[137] From a more global perspective, there is a direct contradiction between cost recovery and affordability. However, the UN High Commissioner for Human Rights views this differently:

> "Consequently, the affordability requirement is not incompatible with the principle of cost recovery for water and sanitation services, which is also recognized in several international declarations. However, it defines limits to cost recovery and highlights the fact that it should not become a barrier to access to safe drinking water and sanitation, notably by the poor."[138]

Nonetheless, financial sustainability is hard to achieve in the face of economic, demographic, and climate-related pressures. Where water provision functions as a natural monopoly, this balance is typically handled through national regulatory frameworks.[139]

Governance and regulation are key factors in achieving both affordability, access and sustainability.[140] While the ownership structure of water services is seemingly relevant to how they are governed, it is necessary to move beyond the simple binary of public versus private, or good versus bad.[141] As the literature on both sides shows, neither model is inherently superior; affordability is harder to achieve if water services fall out of the supervision of the government. In other ways, affordability may become more difficult to safeguard where private provision is not accompanied by effective public regulation and oversight.[142] The outcomes are often context-dependent, shaped by national conditions, political choices, and a range of other factors.

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[137] Hirano, (2016), p. 23.
[138] United Nations High Commissioner for Human Rights (2007) *Report on the Scope and Content of the Relevant Human Rights Obligations Related to Equitable Access to Safe Drinking Water and Sanitation*, UN Doc. A/HRC/6/3, p. 15; Salman, M.A. and McInerney-Lankford, S. (2004) *The Human Right to Water: Legal and Policy Dimensions*. Law, Justice and Development Series. Washington, DC: World Bank, pp. 70–72.
[139] OECD (2015b) *The Governance of Water Regulators*. Paris: OECD Publishing.
[140] Murthy, S.L. (2013) 'The human right(s) to water and sanitation', *Berkeley Journal of International Law*, 31(1), pp. 89–147.
[141] Pérard, E. (2009) 'Water supply: Public or private? An approach based on cost of funds, transaction costs, efficiency and political costs', *Policy and Society*, 27(3), pp. 193–219, at pp. 196–203; Kirkpatrick, C., Parker, D. and Zhang, Y.F. (2006) 'An empirical analysis of state and private-sector provision of water services in Africa', *The World Bank Economic Review*, 20(1), pp. 143–163.
[142] Homsy, G.C. and Warner, M.E. (2022) 'Water pricing and affordability in the US: Public vs. private ownership', *Water Policy*, 24(3), pp. 500–516.

What is essential is the establishment of a fallback system, a governance framework capable of ensuring the continuous, resilient, and sustainable provision of water services, regardless of ownership. This can facilitate the affordability case as well. Such a framework should prevent disruptions in service delivery, affordability in pricing and quality of water, unbothered by shifts in ownership or political direction. Yet, this dimension remains largely absent from current debates. The focus should instead be redirected toward structural resilience rather than ownership, as experience shows that transitions between public and private models tend to follow a wave-like pattern.[143]

6. Water and Environmental Law Principles in the EU

The EU environmental law is built on three core principles, laid down in Articles 191 to 193 TFEU, and reinforced by Article 11 TFEU and Article 37 of the Charter of Fundamental Rights of the European Union. These principles are the precautionary principle, the polluter pays principle, and the principle of environmental integration.

Primarily, the precautionary principle[144] functions as a risk management tool when there is scientific uncertainty about potential environmental or health risks.[145] This means that authorities have the tool to adopt preventive measures, such as withdrawing a product from the market or restricting its distribution. The precautionary principle allows the use of these preventive measures without the immediate need for scientific evidence, hence the precautionary measure. The principle, if used proportionally, can stop irreversible damage.

The polluter pays principle[146] places the cost of preventing, mitigating, and remedying environmental harm on those responsible for it. The principle is operationalised in secondary legislation, most notably through the Environmental Liability Directive, imposes obligations on operators engaged in high-risk activities, such as those involving hazardous substances or discharge into water, to prevent environmental damage or, if damage occurs, to remedy it at their own expense.[147] However, this seemingly straightforward principle continues to raise several problems and debates in academic circles, because these challenges lie at its core, such

[143] Pérard (2009), pp. 193–219; McDonald, D.A. (2018) 'Remunicipalization: The future of water services?', *Geoforum*, 91, pp. 47–56; Szekeres, Á. (2026) 'Governing water after remunicipalisation: Centralisation and public control in Hungary', *Essays of Faculty of Law University of Pécs: Yearbook of 2025*.
[144] Freestone, D., Hey, E. (eds.) (1996) *The precautionary principle and international law*. The Hague: Kluwer Law International.
[145] Anastasi (2022).
[146] Sands, P. (2012) *Principles of International Environmental Law*. 3rd edn. Cambridge: Cambridge University Press; Scott, J. (2015) 'The geographical scope of the EU's climate responsibilities', *Cambridge Yearbook of European Legal Studies*, 17, p. 92.
[147] European Union (n.d.) *Environmental Integration into Sectoral Policies*.

as the question of who qualifies as a polluter and how this term should be interpreted. Another point of contention is whether the principle adequately covers both prevention and remediation, given that it is most often applied after pollution has already occurred. Moreover, issues of legal enforcement and liability gaps arise when discussing this principle.

Lastly, the principle of environmental integration, enshrined in Article 11 TFEU, requires that environmental protection to be incorporated into all Union policies and activities. Since the 1998 Cardiff European Council, this principle has gained prominence, particularly in sectors such as energy and climate policy.[148] The principle acknowledges that environmental sustainability cannot be pursued in isolation and must be embedded in broader economic and social policymaking.[149] However, this raises the question of whether the principle constitutes a binding legal obligation or merely serves as a policy guideline. Its wording is quite open and not very precise, making enforcement difficult and leaving room for different interpretations. This also strengthens the argument of the persistent tension between ambition and implementation in EU legislation.

7. The Water Framework Directive and the Full Cost Recovery Principle

The starting point for water pricing and financing in the European Union is a concrete legal obligation set out in Article 9 of the WFD. As we established previously, the provision establishes the principle of cost recovery for water services, including environmental and resource costs, and links water pricing directly to the polluter-pays principle.

In order to understand the legal starting point of EU water financing, it is necessary to reproduce Article 9 in full.

Article 9 of the WFD - Recovery of costs for water services

> "1. Member States shall take account of the principle of recovery of the costs of water services, including environmental and resource costs, having regard to the economic analysis conducted according to Annex III, and in accordance in particular with the polluter pays principle. Member States shall ensure by 2010:
> — that water-pricing policies provide adequate incentives for users to use water resources efficiently, and thereby contribute to the environmental objectives of this Directive,

[148] Kingston, S., Heyvaert, V. and Čavoški, A. (2019) *European Environmental Law*. Cambridge: Cambridge University Press.
[149] Anastasi (2022), pp. 368–370.

— an adequate contribution of the different water uses, disaggregated into at least industry, households and agriculture, to the recovery of the costs of water services, based on the economic analysis conducted according to Annex III and taking account of the polluter pays principle. Member States may, in so doing, have regard to the social, environmental and economic effects of the recovery as well as the geographic and climatic conditions of the region or regions affected. 2. Member States shall report in the river basin management plans on the planned steps towards implementing paragraph 1, which will contribute to achieving the environmental objectives of this Directive, and on the contribution made by the various water uses to the recovery of the costs of water services. 3. Nothing in this Article shall prevent the funding of particular preventive or remedial measures in order to achieve the objectives of this Directive. 4. Member States shall not be in breach of this Directive if they decide in accordance with established practices not to apply the provisions of paragraph 1, second sentence, and for that purpose the relevant provisions of paragraph 2, for a given water-use activity, where this does not compromise the purposes and the achievement of the objectives of this Directive. Member States shall report the reasons for not fully applying paragraph 1, second sentence, in the river basin management plans."[150]

Water law in the EU begins with a sentence that sounds almost naïve, but is actually a warning: water is "not a commercial product like any other".[151] The WFD sets this tone in the Preamble, and then immediately moves into the hard part: how to protect water in practice, in a Union where uses, infrastructures, and economic pressures are very uneven.

7.1. Why the WFD Was Created

The WFD was not adopted in a vacuum, as it was created as a response to an already changing sector. A single EU framework was needed to combat rising environmental concerns, as well as to support a broader transformation in how public decisions were made: a shift from "government to governance", combined with increased liberalisation and internationalisation.[152] This meant the inclusion of more actors, more decision-making centres, and greater fragmentation of power.

[150] Directive 2000/60/EC.
[151] Directive 2000/60/EC, recital 1.
[152] Kaika, M. (2003) 'The Water Framework Directive: A new directive for a changing social, political and economic European framework', *European Planning Studies*, 11, pp. 299–316, at p. 300.

The WFD had an ambitious purpose to provide a general common framework for water management across Member States, all based on the existing water legislation and bringing them under one umbrella.[153]

What made it new was not only "what" it protected, but "how". The Directive connects environmental objectives with a governance method. Instead of treating water protection as a set of isolated standards, it introduced an integrated approach. Environmental goals became linked to how water is planned, monitored, and managed, creating a system rather than adding another piece of legislation to the mix.[154]

Another major shift in the WFD was the introduction of cost recovery as a principle of governance.

In political-economic terms, it "guides the European water sector towards a more commodifying direction and can have a socially negative impact on households through increased prices".[155] In other words, the WFD does not merely ask for cleaner waters. It also asks: who pays, how, and with what incentives.

It shows how difficult it is for Member States to properly assess cost recovery and to apply the cost-recovery principle, together with the Polluter Pays Principle.[156]

This way, economics becomes part of environmental governance, as water is priced in a way that ignores real costs and scarcity, leading to overuse and pollution.

7.2. The Core Contradiction Inside The Directive

Examining the WFD, we can observe an internal division between, on the one hand, Recital 1 of the WFD, as it opens by insisting that water is not a normal commodity, on the other hand, by introducing the logic of price signals, cost recovery, and incentives.[157]

This tension is not accidental. It is part of the Directive's architecture. The WFD attempts to balance water's social role as a public good with its "newly inflated economic role"[158]:

[153] Kaika (2003), p. 300.
[154] Kaika (2003), p. 300.
[155] Szabó, I. (2019) 'The European governance of the water sector – Contentious policy agendas triggering transnational reactions', *European Research Council Report*, p. 14.
[156] European Commission, DG Environment (2021) *Economic Data Related to the Implementation of the WFD and the FD and the Financing of Measures*.
[157] Farnault, A. and Leflaive, X. (2024) *Cost Recovery for Water Services under the Water Framework Directive*. OECD Environment Working Papers No. 240. Paris: OECD Publishing. https://doi.org/10.1787/e2a363e3-en.
[158] Kaika (2003), p.300.

> "The discursive representation of water attempts to strike the rather unattainable balance between a widely accepted social role as a public good and a heritage and its newly inflated economic role as a market commodity".[159]

This is an interesting point, because Article 9 is designed for environmental outcomes, but its effects run directly into social life. It touches upon the household bill, the affordability of service, and the distribution of burdens between users.

The cost recovery is treated as the primary principle, and social concerns are pushed into state measures.[160] But the Directive itself leaves substantial space for Member State interpretation and application.

7.3. Why "Full Cost Recovery" Becomes Difficult in Practice

The idea of recovering the costs of water services can sound straightforward until we look deeper and try to find in the WFD the description of what costs need to be recovered.

In principle, Article 9 points to a broad cost concept that includes not only financial costs, but also environmental and resource costs. However, many systems struggle even with the financial side, as financial cost calculation is not uniform and involves contested issues such as depreciation, historical capital expenditure, the treatment of subsidies, and the costing of multifunctional infrastructure.[161] This is one reason cost recovery levels can be hard to compare.

Environmental and resource costs raise greater difficulties. They are rarely estimated, there is no single agreed method, and operationalising them in tariffs is politically and technically hard to do.[162] Even defining the "correct" scale is hard, as environmental impacts and resource scarcity can happen across a river basin, not neatly within a service area.[163] In practice, this pushes Article 9 towards a narrower, financially focused interpretation.[164]

Article 9(1) of the WFD expressly permits Member States to take account of "the geographic and climatic conditions of the region or regions affected", as service conditions differ substantially across territories, and these differences directly influence affordability.

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[159] Kaika (2003), p. 300.
[160] Szabó (2019), p. 14.
[161] Farnault and Leflaive (2024).
[162] European Commission (2010) *Managing Scarce Water Resources – Implementing the Pricing Policies of the Water Framework Directive*. Entec UK Limited.
[163] WATECO (2003) *Common Implementation Strategy for the Water Framework Directive (2000/60/EC): Guidance Document No. 1 – Economics and the Environment*.
[164] Farnault and Leflaive (2024).

Supplying drinking water in remote, mountainous, or sparsely populated areas is structurally more expensive than in dense, well-connected urban regions. Lower population density means higher per-capita infrastructure and maintenance costs, which, if fully reflected in the tariffs, would place a greater burden on users.[165]

This creates the risk of providers either refraining from extending services to high-cost areas or shifting the additional costs directly onto end users through higher tariffs. The third sentence of Article 9(1) tries to mitigate this with adequate water pricing.[166]

The Directive demands economic rationality, but the economy of water is not easily measurable.

7.4. From "Full Cost Recovery" to "Sustainable Cost Recovery" and the 3Ts

A growing body of work argues that tariffs alone cannot reliably finance water and sanitation in a fair and stable way. The obstacles are that services are expanding, infrastructure is ageing, and affordability constraints are growing and will continue to grow in the future.[167] In sanitation in particular, financing debates often become trapped in three patterns:

1. "Gap talk"[168] — that focuses on the financing gap between needs and available funding.[169]
2. "Silver bullet talk" — an obsession with the latest financing instrument (PPPs, blended finance, impact bonds), leading to tunnel vision and ignoring system-wide costs and responsibilities.[170]
3. Distributional blindness — losing sight of where costs are actually borne, especially by households in poorer areas or using onsite systems, burdened by paying more and also bearing environmental impacts.[171]

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[165] Greco, R. (2020) 'The liberalization of water services under EU law and the human right to water', *Eurojus*, 2, p. 125.
[166] Greco (2020), p. 125.
[167] Strong, C., Kuzma, S., Vionnet, S. and Reig, P. (2023) *Achieving Abundance: Understanding the Cost of a Sustainable Water Future*. Washington, DC: World Resources Institute; OECD (2022) *Financing a Water Secure Future*. Paris: OECD Publishing.
[168] Farnault and Leflaive (2024).
[169] Carrard, N., Willetts, J., Kome, A. and Munankami, R. (2024) 'Sustainable cost recovery principles can drive equitable, ongoing funding of critical urban sanitation services', *npj Clean Water*, 7, 105, pp. 1–4, at p. 1. https://doi.org/10.1038/s41545-024-00399-2.
[170] OECD (2022) *Financing a water secure future*. Paris: OECD Publishing.
[171] Leflaive, X. and Hjort, M. (2020) *Addressing the Social Consequences of Tariffs for Water Supply and Sanitation*. OECD Environment Working Papers No. 166. Paris: OECD Publishing.

This matters because the deeper question is not only "how much money is missing", but who pays for what and whether that allocation is appropriate.[172]

Against this, the concept of sustainable cost recovery introduces a better, or rather an encompassing solution, if pinned against the "full cost recovery".

The sustainable cost recovery was introduced in the water sector debates in connection with the Camdessus Panel.[173] The sustainable cost recovery accepts the fact that tariffs are not sufficient to ensure financial viability for all services in all contexts.[174]

> "Even in the most developed countries, covering costs solely on the basis of tariffs may not take sufficient account of the burden this would place on the poorest consumers, or of the merit or public goods character of some WSS services, particularly sanitation."[175]

Sustainable cost recovery is commonly expressed through the 3Ts:

- Tariffs (paid by users)
- Taxes (public budget funding)
- Transfers (external funds, including EU support or intergovernmental transfers)[176]

Framed with Article 9, cost recovery can be treated as a principle that must be implemented through a financing mix, not through a single mechanism.[177] It disintegrates the illusion that users should pay for everything and pushes for a shared burden. It also aligns with what the WFD itself permits, that Member States may consider social and economic effects and are not forced into one pricing model.

The WFD is one of the EU's most influential legal instruments shaping how water services are financed, and therefore how burdens are distributed between households, industries, farmers and the public budget.

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[172] Alessi, M. and Treyer, S. (2013) 'Economic models and water pricing towards water efficiency', *Intereconomics*, 48(3), pp. 153–159, at p. 153.
[173] Camdessus, M. (2003) *Financing Water for All: Report of the World Panel on Financing Water Infrastructure*. Marseille: World Water Council.
[174] Carrard, Willetts, Kome and Munankami (2024), p. 1.
[175] OECD (2009) *Managing Water for All: An OECD Perspective on Pricing and Financing*. Paris: OECD.
[176] Carrard, Willetts, Kome and Munankami, (2024), p.2.
[177] OECD (2009) *Managing water for all: An OECD perspective on pricing and financing*. Paris: OECD; Winpenny, J. (2003) *Financing water for all: Report of the World Panel on Financing Water Infrastructure chaired by Michel Camdessus*. Marseille: World Water Council.

This is also the point where the shift from the full cost recovery to sustainable cost recovery becomes more than a policy preference, a clear shift to actually treat water as a heritage, while still financing the pipes and plants that make access real.

8. The Principle of Full Cost Recovery and Affordability

The idea of cost recovery was debated from the beginning. The wording of the principle was a focal point during its legislative process, especially the reach of its binding force.[178] The WFD does not provide a definition of costs, in particular, environmental and resource costs.[179] However, in Article 9 of the WFD, we can find requirements for Member States to reflect and take into account environmental and resource costs, but it lacks a clear and operational definition of what can be included in them. Basically, it creates the breeding ground of structural tension between financial sustainability and universal access to water services.

Article 9 of WFD, as we pointed out, tries to offer a solution for this by requiring Member States to recover the costs of environmental and resource costs of water services, taking into account the polluter pays principle. But not having a clear definition of the costs can hinder its effectiveness. This paradox creates the tension between the cost recovery and affordability, the latter being a core element of the human right to water.[180]

The Directive includes some proactive measures for vulnerable users, or on a larger scale for social concerns, where the derivation from hull cost recovery is not necessary. However, without clear legislation, the implementation can fluctuate, and the protection of vulnerable groups can decrease in one country compared to another. This, coupled with structural problems in some of the Member States, as tariffs are still kept low for political reasons, environmental costs are not really reflected in the price, and much-needed infrastructure investments keep being postponed because there simply isn't enough funding to further the gap between the two.[181]

To better understand the gap, we need to establish the fact that tariffs are inherently influenced by political choices. Quoted earlier, the UN Special Rapporteur on the right to water, Catarina de Albuquerque, highlighted the role of regulatory authorities as a dual one. In one way, they need to guarantee affordability; in the other, they need to resist commercial and

[178] Kaika, M., Page, B. (2003) 'The EU water framework directive: Part I – European policy-making and the changing topography of lobbying', *European Environment*, 13(6), pp. 314–327.
[179] Unnerstall, H. (2007) 'The principle of full cost recovery in the EU water framework directive – Genesis and content', *Journal of Environmental Law*, 19(1), pp. 29–48, p. 37.
[180] Directive 2000/60/EC [2000] OJ L327/1, Art. 9.
[181] Marques, R. C. (2010) *Regulation of water and wastewater services: An international comparison*. London: IWA Publishing; OECD (2015b) *The governance of water regulators*. Paris: OECD Publishing.

political pressures.[182] Regulatory authorities often feel the pressure to lower the prices or keep them there for electoral gain, opposing the service providers that need to raise the prices to protect profit margins. The rights of users are often overlooked because they are seen simply as "users" rather than as citizens. This distinction can weaken their position, treating them as mere consumers of a service instead of members of society who are entitled to protection. Independent regulators with adequate resources are therefore key to ensuring that tariffs are set in a fair, transparent way and remain in line with fundamental rights and to reintroduce the mere "users" as rights-holders that are entitled to protection.[183]

Affordability is not just a matter of pricing. It marks a limit that cost recovery should not cross.[184] Privatisation or market-based reforms alone cannot ensure fair or sustainable outcomes, nor can they ensure that public operators have the governance methods.[185] Poor households can be particularly disadvantaged by poorly designed water-service financing. Generalised subsidies frequently benefit already connected and higher-income households, while poorer households may remain outside service networks and therefore receive little or no benefit from subsidies attached to networked provision.[186]

The goals of Article 9 of the WFD are hard to achieve, and tariffs are just one side of the coin. By incorporating transparency, real public involvement, and protections for those who are more vulnerable, we can be closer to achieving these goals.[187] Setting tariffs should not be seen solely as an economic decision but also as a matter of public accountability and democratic governance.[188] Moreover, public debate frequently frames water financing as a quantitative problem: investment needs exceed available resources; therefore, tariffs must increase, or additional capital must be mobilised. This framing is relevant, but is incomplete as financing mechanisms are not neutral. They determine how costs, risks and responsibilities are allocated. Legal and political criteria according to which the funding is raised also need to be examined, next to the sheer volume of the funding for water services.[189]

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[182] de Albuquerque, C. (2014a) *Report of the Special Rapporteur on the human right to safe drinking water and sanitation on the right to participation*, UN Doc A/69/213.
[183] de Albuquerque (2014b).
[184] Leflaive and Hjort (2020), pp. 7–10; Farnault and Leflaive (2024).
[185] Marin (2009); Baietti, A., Kingdom, W. and van Ginneken, M. (2006) *Characteristics of Well-Performing Public Water Utilities*. Water Supply and Sanitation Working Notes No. 9. Washington, DC: World Bank.
[186] Andres, L.A. et al. (2019) *Doing More with Less: Smarter Subsidies for Water Supply and Sanitation*. Washington, DC: World Bank; OECD (2003) *Social Issues in the Provision and Pricing of Water Services*. Paris: OECD Publishing.
[187] Pánovics, A. (2018) 'Access to Information and Transparency', in Krämer, L. and Orlando, E. (eds), *Principles of Environmental Law*, Edward Elgar, pp. 353–365.
[188] de Albuquerque (2014b).
[189] OECD (2026) *Financing Water Security: Models and Approaches for Investments that Last*. OECD Studies on Water. Paris: OECD Publishing; OECD (2022).

A similar oversimplification characterises the recurring focus on financial innovation. Over recent decades, the sector has experimented with privatisation, corporatisation, public–private partnerships and blended finance structures.[190] However, these instruments can't improve efficiency on their own, as they focus on only one part of the problem, disregarding the structural question of cost allocation. A coherent system of revenue generation and redistribution is needed, and for that, we need to view the water services as a mechanism.
The distribution of costs is still not fully addressed, as in several Member States, households, especially vulnerable users, tend to bear a relatively higher share of the costs.

From a legal standpoint, it is neither required nor justified to interpret cost recovery as an obligation to finance water services exclusively through tariffs. The provision does not prescribe a single financing model, and if we interpret "full cost recovery" as a rigid principle, we fall into the trap of disregarding the public good dimension of water services and the Directive's built-in proportionality logic. However, if we systematically underprice water to support the citizens, we undermine sustainable water management. These characteristics justify the involvement of general taxation and intergovernmental transfers alongside user charges.[191]

The "3Ts" would be influential in this case. Tariffs should at least cover day-to-day operation and maintenance, and encourage efficient water use. Moreover, taxes and transfers can reasonably support larger investments, environmental measures, and protections for affordability. The exact mix differs from one Member State to another, but the basic idea stays the same: financial sustainability and social fairness need to be ensured together. For a system to be credible, public funding needs to be stable and predictable. When funding comes in the form of ad hoc subsidies that only plug short-term gaps, it can distort incentives and make it harder to hold anyone accountable.[192]

Affordability is hard to balance because overall figures often give the impression that high levels of cost recovery are affordable for households in most EU Member States. [193]
Nevertheless, even a relatively small proportion of households facing affordability constraints is legally and politically significant, because we are discussing a sector linked to essential services. In many cases, targeted social tariffs or income-based support mechanisms are

[190] OECD (2010) *Innovative Financing Mechanisms for the Water Sector*. OECD Studies on Water. Paris: OECD Publishing; Laubenstein, H. and Leflaive, X. (2024) 'Water investment planning and financing', *OECD Environment Working Papers*, No. 237. Paris: OECD Publishing.
[191] Alessi and Treyer (2013), p. 153.
[192] Alessi and Treyer (2013), p. 153.
[193] Alessi and Treyer (2013), p. 153.

implemented in the national system, and these are compatible with cost recovery principles as they are necessary to ensure proportionality and non-discrimination in water access.[194]

Finally, pricing should be transparent, and cost recovery should not be limited to financial accounts but, where possible, should also include environmental and resource costs, in line with the objectives of the WFD.[195]

The tension exists between a narrow financial interpretation of cost recovery and a systemic understanding of sustainability, and not between public and private provision.
We do not reject the idea of cost recovery, but urge caution in interpreting it in isolation from equity and public responsibility. If Article 9 treats pricing as a tool of governance, then sustainable cost recovery can help ensure that its use does not lead to socially harmful outcomes.

9. The Right to Water in the Jurisprudence of the European Court of Human Rights

Water governance is often described as the system through which water resources and services are managed across political, social, and economic levels.[196] In this context, the role of the Council of Europe is often less visible than that of the European Union, even though it was among the first to engage with emerging environmental challenges.

The recognition of water as a human right remains incomplete, as unlike traditional rights, such as freedom of expression or religious freedom, water presents a different problem. It is both a basic need and a service.[197]

In legal doctrine, the right to water is typically approached in two ways. First, as a derivative right, it is linked to existing human rights. The United Nations Committee on Economic, Social and Cultural Rights has recognised that access to water forms part of the right to an adequate standard of living under Article 11 of the ICESCR.[198] In this sense, access to water becomes a state obligation derived from broader human rights guarantees.

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[194] Farnault and Leflaive (2024), pp. 19–20; Leflaive and Hjort (2020).
[195] Directive 2000/60/EC, Art. 9(1); European Commission (2000) *Communication from the Commission to the Council, the European Parliament and the Economic and Social Committee: Pricing Policies for Enhancing the Sustainability of Water Resources*, COM(2000) 477 final, pp. 9–11.
[196] Mehta, L. et al. (1999) *Exploring Understandings of Institutions and Uncertainty*. IDS Discussion Paper No. 372.
[197] Szilágyi (2018), p. 210; Horváth, Bartha and Szilágyi (2018), pp. 14–19; Raisz and Szilágyi (2017), pp. 73–98; Szilágyi (2015), pp. 38–54; Winkler (2012), p. 9.
[198] UN Committee on Economic, Social and Cultural Rights (2003), *General Comment No. 15*, UN Doc. E/C.12/2002/11; Bulto, T.S. (2011) 'The emergence of the human right to water in international human rights law: Invention or discovery?', *Melbourne Journal of International Law*, 12(2).

Second, the right to water can be conceptualised as an independent right, although this remains less developed in binding legal instruments.[199] At the national level, some constitutions, such as in Slovenia,[200] explicitly recognise access to drinking water as a fundamental right.[201]

At the European level, however, the European Convention on Human Rights does not explicitly recognise a right to water. Nevertheless, the jurisprudence of the European Court of Human Rights has gradually evolved to incorporate environmental considerations through interpretation.[202]

Although the ECHR does not explicitly protect the right to water, the Court has tried to address this absence by providing indirect protection through existing rights. However, this reliance on interpretative tools, such as the "living instrument" doctrine and the requirement that rights be "practical and effective", leaves the protection fragmented and dependent on judicial discretion.[203]

In this framework, water-related issues are primarily addressed under:

– Article 2 (right to life)
– Article 8 (right to respect for private and family life)
– Article 1 of Protocol No. 1 (property)
– procedural rights under Articles 6 and 13.

Among these, Article 8 has proven the most frequently used.[204] Unlike Article 2, which requires a high threshold of immediate risk to life, Article 8 allows for a broader assessment of environmental conditions affecting private life. In practice, however, it often functions as a

[199] Jakab, N. and Mélypataki, G. (2019) 'The right to water as a social fundamental right', *Journal of Agricultural and Environmental Law*, p. 10.
[200] Štemberger Brizani, K. (2025) 'The legal dilemmas of the drinking water supply in the Republic of Slovenia', Central European Academy Law Review, 2(1), pp. 49–66, at p. 56.
[201] Juhart, M. and Sancin, V. (2022) 'Slovenia: An example of a constitution guaranteeing high-level protection of natural resources and sui generis right to drinking water', in Szilágyi, J.E. (ed.) *Constitutional Protection of the Environment and Future Generations*. Budapest: Central European Academic Publishing, pp. 439–478; Constitutional Act Amending Chapter III of the Constitution of the Republic of Slovenia, *Official Gazette of the Republic of Slovenia*, No. 75/16 (2016).
[202] Mowbray, A. (2005) 'The creativity of the European Court of Human Rights', *Human Rights Law Review*, 5(1), pp. 57–79.
[203] Palmer, E. (2009) 'Protecting socio-economic rights through the European Convention on Human Rights', *Erasmus Law Review*, 2(4), pp. 397–425.
[204] Hendry, J. (2020) 'The right to water and sanitation under the European Convention', *PKI Global Justice Journal*, 4, p. 14.

residual category, where water-related claims are placed when no more specific provision is available.

The Court's approach can be illustrated through a series of cases dealing with access to water and environmental harm.

In *Dubetska and Others* v. Ukraine,[205] the applicants lived near heavily polluting industrial sites and suffered from contaminated water and inadequate access to safe drinking water. The Court found a violation of Article 8, emphasising the impact of environmental degradation on private life.[206]

Similarly, in *Dzemyuk v. Ukraine*,[207] the construction of a cemetery near the applicant's home led to contamination risks affecting water quality. The Court again found a violation, as environmental harm interfering with living conditions can fall within the scope of Article 8.[208]

By contrast, in *Hudorovic and Others v. Slovenia,*[209] the Court did not find a violation, even though the applicants lacked access to water and sanitation in informal settlements. While acknowledging that a "persistent and long-standing lack of access to safe drinking water" may affect private life, the Court held that the required threshold of severity had not been met.[210] This approach is open to criticism because it imposes a high, unclear threshold, effectively limiting protection to extreme cases. The Court stated that access to safe drinking water is not, as such, a right protected by the Convention. Although it did not rule out future recognition in exceptional circumstances, this position leaves protection fragmented. The court assessed only whether the state had acted reasonably, and reduced the question of access to water to an administrative question rather than a question of human rights.[211]

The key issue is therefore not the existence of a right to water, but the severity of the interference, and the adequacy of state action. This creates a high threshold for applicants who must demonstrate a long-standing lack of access, a significant impact on private life, and a failure of state authorities to act. This approach places a considerable burden on individuals, particularly in vulnerable situations.[212]

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[205] *Dubetska and Others v Ukraine* (Application No. 30499/03).
[206] Braig, K.F. (2018) 'The European Court of Human Rights and the right to clean water and sanitation', *Water Policy*, 20, pp. 3–5.
[207] *Dzemyuk v Ukraine* (Application No. 42488/02).
[208] Braig (2018), pp. 3–5.
[209] European Court of Human Rights, *Hudorovič and Others v Slovenia* (Applications Nos. 24816/14 and 25140/14), Judgment of 10 March 2020.
[210] European Court of Human Rights, *Hudorovič and Others v Slovenia* (2020); Mythili Mishra, 'A Tale of Two Communities: Inequality and the Right to Water in Hudorovič and Others v Slovenia' (2021) *LSE Law Review*, Vol. VI, p. 172.
[211] Hendry (2020), p. 14.
[212] Juhart and Sancin (2022), pp. 439–478.

The limits of the Court's approach are linked to the structure of the Convention itself. The ECHR was designed to protect primarily civil and political rights, not socio-economic rights.[213] Although later developments, including the European Social Charter, address social rights, environmental rights remain only indirectly protected. The principle of subsidiarity implies that primary responsibility lies with Member States, and the ECtHR intervenes only when national systems fail.[214] This further limits the recognition of new rights, including the right to water. The jurisprudence of the ECtHR, on the one hand, has progressively incorporated environmental considerations into human rights law, and on the other hand, it has avoided recognising a direct right to water.

Moreover, the protection remains indirect, as we argued that it is conditional and dependent on case-specific thresholds. Water is essential for human life, yet its legal protection remains fragmented and contingent, failing to match its fundamental importance.[215]

However, the Court does not deny the importance of water, but it avoids recognising it as an autonomous right, instead subsuming it under existing provisions, most notably Article 8. The protection depends on judicial framing rather than on a clearly defined legal instrument, as the system operates through thresholds and exceptions.[216] Access to water is not guaranteed, but it is assessed on a case-by-case basis, depending on the severity of interference and the adequacy of state action.[217] The applicant must consequently demonstrate circumstances sufficiently serious to bring the complaint within the scope of the Convention. This evidentiary and threshold requirement may create particular difficulties for applicants in vulnerable situations.[218]

Two possible paths to remediate the situation are arguable in this case, as on the one hand, the gradual expansion of jurisprudence through interpretation, and on the other hand, the adoption of a specific legal instrument recognising the right to water. However, both approaches remain problematic, as the first risks inconsistency and fragmentation, while the

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[213] Thornton, L. (2014) 'The European Convention on Human Rights: A socio-economic rights charter?' in Egan, S., Thornton, L., Walsh, J. (eds.) *Ireland and the European Convention on Human Rights: 60 years and beyond*. Oxford: Bloomsbury, pp. 227–256.
[214] Barral, V. (2018) 'Towards judicial coordination for good water governance?', *International and Comparative Law Quarterly*, 67(4), pp. 931–959.
[215] *Hudorovič and Others v Slovenia*, App nos 24816/14 and 25140/14 (ECtHR, 10 March 2020), paras 110–116; *Dzemyuk v Ukraine*, App no 42488/02 (ECtHR, 4 September 2014), paras 77–84.
[216] *Hudorovič and Others v Slovenia*, App nos 24816/14 and 25140/14 (ECtHR, 10 March 2020), paras 110–116; *Dzemyuk v Ukraine*, App no 42488/02 (ECtHR, 4 September 2014), paras 77–84; *Dubetska and Others v Ukraine*, App no 30499/03 (ECtHR, 10 February 2011), paras 109–123.
[217] *Hudorovič and Others v Slovenia*, App nos 24816/14 and 25140/14 (ECtHR, 10 March 2020), paras 113–159; *Dzemyuk v Ukraine*, App no 42488/02 (ECtHR, 4 September 2014), paras 77–84, 91–92.
[218] *Hudorovič and Others v Slovenia*, App nos 24816/14 and 25140/14 (ECtHR, 10 March 2020), paras 113–116; *Dzemyuk v Ukraine*, App no 42488/02 (ECtHR, 4 September 2014), paras 77–84.

second faces political and conceptual difficulties, particularly in defining the scope and enforceability of such a right.

This is a structural limitation of the current framework, as it is not designed to guarantee access to water per se, but only to address its absence in extreme cases.[219]

Even at the level of human rights law, access to water is not secured in a coherent or predictable manner, as the problem lies not in the absence of formal recognition alone, but in how governance structures translate legal principles into practice.

IV. National Case Studies

1. Hungary

Period	Wave	Dominant Ownership Model	Role of the Private Sector	Key Characteristics	Governance Logic
1948–1989	Integration (Socialist Model)	State Ownership Model	None	- Full nationalisation- Regional state providers- Central planning	Centralised, hierarchical
1989–2010	Fragmentation, Decentralisation, and Commercialisation	Municipal Ownership + Mixed Models	Significant (expanding)	- Municipalisation of assets- Many local providers- Concessions and foreign entry	Fragmented, weak coordination
2010–Present	Remunicipalisation and State Recentralisation	Increasingly State Ownership Model	Limited (residual)	- Sector consolidation- Growing state control- Reduced municipal role	Centralised, state-dominated

Table 1. Waves of Water Governance in Hungary 220

The Hungarian evolution of water services can be defined as a rapid shifting one. It lacks a steady, gradual, or cohesive progression. We can observe periods of integration and fragmentation that underline the study's key issue.[221] The rapid shifts can be attributed to political and economic shifts that shaped the water service sector over the years. Moreover, we can observe that an unstable political and economic background can and will result in an unstable water service sector.

As a common preestablished starting point of the study is the collapse of the Soviet-type dictatorship and its impact on the formation of the new, free water service sector. To properly examine the starting point, we need to revisit the already existing legal framework to establish the groundwork.

[219] *Hudorovič and Others v Slovenia*, App nos 24816/14 and 25140/14 (ECtHR, 10 March 2020), paras 110–116.
[220] Author's own elaboration based on the analysis presented in this thesis.
[221] Szabó, I. and Garcia Quesada, M. (2017) 'Historical waves in Hungarian water sector reform and implications for integration', *Utilities Policy*, 46, pp. 15–21.

We will examine three clusters of the phases of evolution to create clarity and analytical structure. This will be mirrored in the Romanian example as well to facilitate a better comparison and to underline the differences taken by each country. The three clusters differ title-wise; however, they are concise at the same time belt because the major changes in the water sector align almost perfectly with each other. This is due to the fact that both countries had similar historical experiences.

The Hungarian experience can be divided into the following three main periods from 1948 to the present day: From 1948 to 1989, we count on the integration wave, where the number of providers fell from 430 to 34.[222] The second time belt spans from 1989 to 2010, named the fragmentation wave, where the number of providers grew to 450. Lastly, from 2010 to the present day, we have an amalgamation of (re)municipalisation, which stalled and turned into (re)integration. We enumerate 36 operators in this period.[223]

An initial indication of the degree of integration of water-service provision is the number and scale of operators. A smaller number of larger providers may indicate a more aggregated system, whereas a large number of independent providers may point towards greater institutional fragmentation. However, neither structure can, on this basis alone, be regarded as inherently superior.[224]

As an integrated sector provider that operates on a relatively larger scale, it can generate greater resources for its operation. Regulatory oversight is larger, and it can positively improve long-term sustainability and consumer protection. The downside is the inherent integration, because the problems are not resolved where they emerged. They are just implemented through top-down resolutions. In realising larger clusters for water service operations, there may be instances in which parts of the larger cluster are ignored or, worse, discriminated against by the systems administrator.[225]

On the other hand, in a fragmented sector, the service provision is covered by smaller-scale service providers.[226] Here, the local operators have the ability to solve the emerging problems more in line with the smaller sector. The closeness to the community and the possible root

[222] Szabó and Garcia Quesada (2017), p. 15.
[223] MEKH (2018) *A víziközmű működési engedélyes szolgáltatók listája*.
[224] World Bank (2017) *Joining Forces for Better Services? When, Why, and How Water and Sanitation Utilities Can Benefit from Working Together*. Washington, DC: World Bank; OECD (2011).
[225] World Bank (2005) *Models of Aggregation for Water and Sanitation Provision*. Water Supply and Sanitation Working Notes, Note No. 1. Washington, DC: World Bank, pp. 15–16; OECD (2011) *Water Governance in OECD Countries: A Multi-level Approach*. OECD Studies on Water. Paris: OECD Publishing, doi: 10.1787/9789264119284-en.
[226] Szabó and Garcia Quesada (2017), p. 15.

cause of the problem can result in a much more harmonious operation. The downside of these is the lack of supervision and the lack of resources, as it cannot generate enough financial resources to recover the costs of operation. These problems on both sides call for a deeper examination of water services beyond ownership structure, but also an examination of the numbers and scale of operators.[227] Only by building on these findings can we move to discuss the governance.

Another base idea is that the water service sector must respond to the supply and demand principle by widening coverage and keeping up the good quality of water. In response to the economic principle, the state-owned water sector faces pressure to balance these responsibilities with the public policy objectives. The question of achieving equitable access, affordability and the sustainable management of water services is pressed against financial obstacles. The privately owned water sector can overcome these by pushing the fulfilment of the public service obligations, to the source, back on the state.[228] However, the state should always prioritise public welfare over profit. Incentivising the use of private ownership can push the "citizen" into a "user", where the need for welfare is lost.

The loss and regain of public sector welfare can be observed in our examination. As water service provision changed in parallel with major regime changes.

But we must not concentrate on just the public and private ownership debate.[229]We need to study all aspects of water service evolution in Hungary to accurately pinpoint the problems of each main period.

Examining the Hungarian state in these reforms can also shed light on which role it embodied: owner, regulator of water services and, as we will see in some cases, the facilitator of these reforms.

We build upon the work of Szabó and Queseda[230] who worked out the three main periods we use in this research, but evolving on the remunicipalisation period with the addition of a (re)centralised view. We also widened the legislative framework to better reflect the main periods.

[227] Szabó and Garcia Quesada (2017), p. 16.
[228] Wade (2008); Castro, J.E. (2007) 'Poverty and citizenship: Sociological perspectives on water services and public-private participation', *Geoforum*, 38(5), pp. 756–771.
[229] Boda, Z., Scheiring, G. (2006) 'Water privatisation in the context of transition' in Chávez, D. (ed.) *Beyond the market*, pp. 95–101; Lobina and Hall (2008), pp. 178–202.
[230] Szabó and Garcia Quesada (2017), p. 16.

1.1. 1948–1989: The Wave of Integration

The wave of integration was marked by state-led consolidation and centralisation. This is visible in the legal instruments that focused mainly on nationalisation and the development of a systematic organisation of the water services and management.

The influential legal documents of this period are:

1. Decree 207.760/1948 on the Organisation of the National Water Management Office.
2. Act XX of 1949 of the proclamation of the Constitution of the Hungarian People's Republic.
3. Act IV of 1964 on Water.
4. Act IV of 1959 on the Civil Code.

1.2. 1989–2010: The Wave of Fragmentation

After the political transition in 1989, the country moved to market liberalisation and decentralisation. This resulted in a fragmented water service sector. Local autonomy was incentivised, and privatisation efforts grew. In a time of accession to the EU, the tension between public and private involvement heightened.

The volume of important documents exceeded:

1. Act XXXI of 1989 on the Amendment to the Constitution.
2. Act XIII of 1989 on the Transformation of Economic Organisations and Business Associations.
3. Act XXIII of 1989 on the Registration of Companies by the Court, and the Legal Supervision of Companies.
4. Act LXV of 1990 on Local Municipalities.
5. Act LXXXVII of 1990 on Pricing.
6. Act XVI of 1991 on Concessions.
7. Act XX of 1991 on the Scope of Duties and Jurisdiction of Local Governments and Their Organs, of the Delegates of the Republic and of Certain Organs of Central Subordination.
8. Act XXXIII of 1991 on the Transfer of Certain State Assets to Municipalities.
9. Act LVII of 1995 on Water Management (Vgt.).
10. Act No. LXXXIX of 2003 on Environmental Pollution Charges (Ktd. tv.).
11. Act CXXI of 2006 on Amending Various Acts Founding the Budget of the Republic of Hungary for the Year 2007.
12. Act CVI of 2007 on State Assets.
13. EU Accession (2004).

14. Water Framework Directive.
15. Urban Waste Water Directive (91/271/EEC).
16. Drinking Water Directive (98/83/EC).

1.3. 2010–2024: The Wave of Remunicipalisation and Subsequent State Recentralisation

To undo the harms created by the fragmentation period, Recentralisation was strongly pushed. After this, recentralisation was the aim. This resulted in the consolidation of control under the public entities and the state.

The following legal documents are relevant to our research:

1. The Fundamental Law of Hungary.
2. Act CCIX of 2011 on Water Utility Supply.
3. Act CXCVI of 2011 on National Assets.
4. Act CLXXXIX of 2011 on Local Governments of Hungary (Mötv.).
5. Act XXII of 2013 on the Hungarian Energy and Public Utility Regulatory Authority (MEKH Act).
6. Act LIV of 2013 on the Implementation of Utility Cost Reductions (Overheads Act).
7. Establishment and expansion of Nemzeti Vízművek Zrt. as a central state-owned structure.
8. Sectoral consolidation measures reducing the number of service providers.
9. Introduction of administratively controlled tariff reductions.

To strengthen regulatory oversight, the following were added:

- Government Decree 58/2013 (II. 27.) on the Implementation of Certain Provisions of Act CCIX of 2011 on Water Utility Services (Vhr.)
- Ministerial Decree 16/2016 (V. 12.) of the Ministry of Interior on the Water Management and Water Protection Professional Requirements, Scope of Investigations, and Content of Data Reporting to be Fulfilled during the Operation of Public Drinking Water Utilities and Public Sewerage and Wastewater Treatment Utilities
- Ministerial Decree 61/2015 (X. 21.) of the Ministry of National Development on the Detailed Content and Formal Requirements of the Renovation and Replacement Plan and the Investment Plan as Part of the Rolling Development Plan of Water Utilities
- Ministerial Decree 47/1999 (XII. 28.) of the Ministry of Transport, Communication, and Water Management on the Fees Payable for Drinking Water Supplied from State–Owned Public Water Utilities and the Use of State–Owned Public Sewerage Facilities

- Ministerial Decree 24/2023 (XII. 13.) of the Ministry of Energy on the Water Utility Development and Compensation Fund
- Ministerial Decree 25/2023 (XII. 13.) of the Ministry of Energy on the Determination of Water Utility Service Fees for Non–Residential Users
- Government Decree 5/2023 (I. 12.) on Drinking Water Quality Requirements and the Regulation of Its Monitoring

1.4. Legal Timeline

1.4.1. 1948–1989: The Wave of Integration

Water service provision was in the hands of local authorities all across Europe at the beginning of the examined period. Hungary was no exception, as roughly 340 council-founded companies were responsible for it in Hungary, where pipelines existed. The fragmented system relied on semi-functional local-level management in the 1940s.[231]

After the aftermath of WW2, a wave of integration started in many European countries. Hungary also moved towards direct control of water services by the central state,[232] as the socialist regime gained traction.

The adoption of the new National Water Management Office (*Országos Vízgazdálkodási Hivatal*) solidified the change in 1948.[233] *Stricto sensu* this was not considered a regulatory authority, however it allowed the integration of local water service companies under regional water service companies, thus giving the power to the central government.[234] This was a clear move from the municipal-centred service provision to a centralised one.

Moreover, Act IV of the Hungarian Civil Code from 1959 cleared the remaining path to centralisation as it provided the general legal framework for state ownership and economic organisation. The Act granted legal personality to state-owned enterprises with legal personality and enumerated their competencies. Among the competences was the execution of public service tasks.[235] It laid the foundation for a unified, nationwide system of water utility administration.

[231] On the creation of the Act XXIII of 1885 on the basis of which the municipal water service was established and the foundations of regulation, see Koncz, I. (2019) 'The development of water rights administration in Hungary', *Journal of Agricultural and Environmental Law*, pp. 103–111.
[232] Act XX of 1949, Art. 6.
[233] Decree No. 207.760/1948.
[234] Szabó and Garcia Quesada (2017), pp. 16–17.
[235] Civil Code, Chapter VI.

Further centralisation and regulatory refinement were achieved through Act IV of 1964 on Water, a statute of enduring influence until the end of the socialist era in 1989. The Act established the conditions for service provision, defined the criteria for water rights licensing, and allocated financial responsibility for the construction, renovation, maintenance, investment, and operation of public water infrastructure, whether performed by the State or other public bodies.

State-owned management was charged with the operation, management and acquisition of the public water infrastructure. This framework, however highly centred, still managed to keep some degree of local participation.

As Post-WW2 brought the socio-economic changes, the water sector was restructured into 36 water and wastewater companies assimilating the previous 430 individual smaller council companies. The core state-led regional utilities within the centralised system were called "regional waterworks"("regionális vízművek"): DRV Zrt.; EDV Zrt.; DMRV Zrt.; ERV Zrt.; TRV Zrt.[236] These entities were created to expand water services to areas that had previously been left out, especially in rural regions where access lagged far behind urban centres. However, even though the reform formally extended service coverage, the sector continued to struggle with weak technical capacity, limited financial resources, and organisational shortcomings. The persistence of these issues later led to the sector's decline.

In practice, despite the strong integrative ambition behind the model, the system remained constrained by the inefficiencies and resource limitations typical of highly centralised structures.

1.4.1.1. Local illustrations from the socialist period and the transition

From the 1940s onwards, the organisation of water services in Hungary did not simply change; it was restructured at its core. The post-war land reform removed the economic base on which earlier water associations relied, as the system of large landowners financing infrastructure disappeared from use.[237] What remained were collective structures without financial autonomy, which increased the dependence on the state. Their survival was no longer linked to local capacity, but to access to public funding.

[236] Szabó and Garcia Quesada (2017), pp. 16–17.
[237] Fejér, L. (2010) 'Társulatok a magyar vízgazdálkodásban, 1810–2010: Magánerő vagy állam? [Associations in Hungarian water management, 1810–2010: Private initiative or state?]', *História*, 6–7, 'Ember és természet', pp. 44–47.

During the socialist period, this was further reinforced when water was redefined as public property and water management was formally centralised. Yet, even in this system, centralisation did not fully replace local coordination. From the late 1950s, water management associations reappeared, not as a contradiction to centralisation, but as a necessity.[238] Infrastructure could be planned centrally, but its organisation and operation still required local forms of cooperation and financing.

The following decades are often described through expansion, and rightly so. Access to piped water increased significantly, and water utility associations became central actors in extending the drinking water supply. But this expansion included further problems. While water supply developed rapidly, wastewater infrastructure lagged behind, creating what later became known as the "közműolló"[239] or "utility gap".[240] This gap was an early sign that infrastructure growth, on its own, does not produce a balanced system.

Furthermore, through the planning documents, we can understand the logic of centralisation. In 1958, the expansion of urban supply was framed through concrete obligations, such as increasing Budapest's water capacity by 100,000 m³ per day, while rural development aimed to provide safe drinking water to half a million inhabitants through new wells and small-scale systems.[241] Water services appear here as a state project, not only technical, but also social, linked to public health and living conditions.

Moreover, press sources from 1969 show that water services were not just administrative systems, but part of wider political and social realities. Parliamentary discussions on the performance of public services, including"vita a lakosság ellátásáról", show that service provision was also a politically contested issue subject to evaluation and debate (Annex 1). Moreover, references to utilities as "not loss-making enterprises" indicate that economic thinking was already present.[242] The system was not indifferent to costs, because it was already measuring performance, even if not yet through market mechanisms.

In 1984, water provision was described as a struggle, a "csata — az éltető vízért", and reports referred to situations where "the water does not run" or where quality deteriorates (Annex 2).[243] Meaning that infrastructure expansion did not automatically translate into a

[238] Fejér (2010), pp. 44–47.
[239] The "közműolló" refers to the difference, expressed in percentage points, between the share of dwellings connected to the public water supply network and those connected to the sewerage system. In an ideal situation, this gap is zero.
[240] Fejér (2010), pp. 44–47.
[241] Magyar Közlöny [Official Gazette of the Hungarian People's Republic] (1958), No. 55, 25 June 1958, p. 435.
[242] Esti Hírlap [Evening News] (1969), 14(143), 21 June 1969, p. 3.
[243] Napló (Diary, regional daily newspaper, Veszprém, Hungary) (1984) Vol. 40, No. 169, 20 July 1984, p. 3.

reliable service system. The system could build and expand, but it struggled to maintain and distribute evenly. This was, and it still is, a recurring pattern.

By the late 1980s, the system was already moving towards change.[244] New forms of participation appeared, where local communities organised themselves to improve water supply by forming associations for these purposes (Annex 3). Water services were no longer only something provided by the state, but something that required local initiative. The idea of representation also gains traction, with references to forums expressing the interests of the population.[245]

After the transition, water supply is explicitly recognised as a primary public need, and responsibility is moved to the municipal level through the 1990 Local Government Act.[246] But this does not mean a simple withdrawal of the state, but an emergence of a more layered system. Local governments become responsible, but central programmes, funding, and regulation remain essential. This means that the system does not decentralise completely; it reorganises itself. Because of this, water utility associations are no longer operating within central planning, but they are also not purely market actors. They function as hybrid structures, combining local initiative, collective financing, and public service provision, relying on cooperation across levels.[247]

From these examples, we can see that beyond what the law suggests: centralisation, then decentralisation, there is a system that is constantly adjusting, balancing between planning and practice, between expansion and limitation, between state control and local need.

We can observe a pattern of tensions that define water services today, between infrastructure and service quality, between financial sustainability and accessibility, and between central coordination and local responsibility. These show that the challenges are not created by recent reforms, but are embedded in the structure of the sector itself.

1.4.2. 1989–2010: The Wave of Fragmentation

With the end of the Soviet-type dictatorship in 1989, in Hungary, a new wave emerged. Under the flag of market liberalisation, a swift change took place. The dismantling of the centralised system, the market widened rapidly, as the 34 integrated water service providers were

[244] Népfront (People's Front, Hungary) (1989) Vol. 34, No. 9, 1 September 1989, p. 37.
[245] Új Magyarország (New Hungary, national daily newspaper, Hungary) (1992), 'Vízgazdálkodási társulatok a víz ellen és a vízért…' [Water Management Associations Against and For Water…], Vol. 2, No. 57, 7 March, p. 25.
[246] Önkormányzati Tájékoztató (Municipal Bulletin, Hungary) (1998) Vol. 8, No. 9, p. 7.
[247] Önkormányzati Tájékoztató (1998), p. 7.

fragmented into approximately 450 smaller individual water service providers, in a relatively short period.[248]

New ideas emerged without real debate, and promoters of decentralisation pushed the idea of privatisation of the Hungarian water services. The government was also highly receptive to this new wave, encouraging privatisation measures.[249]

The newfound freedom tainted the judgment of the decentralisation promoters, leading to yet another drastic shift of ownership. The planned economy was overthrown to achieve market competition.

This encouraged the turn to private operators by establishing the right to private property and subsequently ending public ownership over key supply systems, like the water utility system. Moreover, by recognising private property rights, the law opened the way for private actors to enter sectors once controlled exclusively by the state.

The 1949 Constitution was amended under the Act XXXI of 1989. This reform marked the end of the centrally planned socialist model and established the legal foundations for a transition to a market-based economy.[250] Moreover, private property rights enabled the private actors.

Under Act LXV of 1990 on Local Municipalities, Section 8(4), within the framework of the duties and competences of local governments, municipalities were underlined that "the local government must ensure a healthy drinking water supply."[251] Municipal authorities thus have the obligation to ensure the availability of potable water. Moreover, Act XX of 1991 widened the scope of operating water services, which also fell on municipalities.[252] This confirmed that water services were no longer merely accessible at the local level but institutionally embedded within municipal obligations. This was further reinforced by Act XXXIII of 1991(Hereinafter: Assets Act), as it prescribed that "public utilities and other assets serving the provision of local public services shall be transferred into the ownership of local governments."[253] The Assets Act established Asset Transfer Committees to manage and

[248] Szabó and Garcia Quesada (2017), pp. 16–17; World Bank (2017) *Case Study—Kiskun-Viz, Hungary*. WSS GSG Utility Turnaround Series. Washington, DC: World Bank, p. 2.
[249] Önkormányzati Tájékoztató (1998), p. 7.
[250] Act XXXI of 1989, § 2.
[251] Szabó and Garcia Quesada (2017), pp. 16–17.
[252] 'A helyi önkormányzat feladata a közszolgáltatások biztosítása, különösen a közüzemi szolgáltatások működtetése.' ['Local governments are responsible for ensuring public services, in particular the operation of public utility services.']; Act XX of 1991, Section 2(1)–(2).
[253] Act XXXIII of 1991 on the Transfer of Certain State-Owned Assets to Local Governments, Section 2(1); We need to highlight that in the Assets Act does not always explicitly uses "water infrastrucure"; it uses a wider notion of "Közművek"("Public Infrastrucure"), but doctrinally this includes the water services infrastrucure. It is

oversight the process. It did not just say that "municipalities get the assets", but created committees for it, which decided who gets what based on the examination of how the infrastructure was used.[254] The infrastructures were either used jointly, separately, or by technical separation. The use of the committee forecasts the fragmentation period. Assets were not transferred uniformly, and ownership models became mixed and hard to keep track of.

Because of this, regional systems were sometimes broken up or were shared in an awkward manner. Where infrastructure could not be linked to one municipality, this remained under the ownership of the state.[255] The combination of these poorly designed arrangements forms the legal origin of the fragmented governance structure.

Act XIII of 1989 (Hereinafter:"Transformation Act") legislated the transformation of state-owned enterprises into business associations.[256] This marked the turning point to the market economy. The Transformation Act, although not sector-specific, altered the landscape of water services. This acted as a catalyst for the commercialisation of public domain assets, including water services, as it established the legal and economic pathway to address market principles. of assets that had previously been in the public domain by altering their legal and economic character to conform with market principles. This Act introduced a statutory deadline obliging state-owned companies to convert into limited liability companies or joint-stock companies.[257] Water infrastructure (plants, pipes, systems, etc.) from this point was open to be a business asset, not just part of the public property.

Moreover, besides the transferrability of assets, the Transformation Act was vague about the management and the nature of the water utility infrastructure. The Act introduced concepts like business assets, shares, quotas, and economic organisations, but failed to define how these apply to network-based infrastructures.[258] Water infrastructure is being categorised as a normal business asset. With no clear legislation on how these should be managed? What can and cannot be sold? If there are still public obligations? The Transformation Act, thus allowing privatisation practices beyond the intent of the original legislation.

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important to make this destinction, because the hungarian legislation uses a sector neutral wording can be decieving, however in our case it is undoubtably includes the water services infrastructure.

[254]Act XXXIII of 1991, Sections 7–9.

[255] Kis, Á. and Ungvári, G. (2019) 'Are we still falling? Sustainability and equity in the Hungarian water utility services sector', *Budapest Management Review*, 50, p. 81.

[256] "Economic organisations may be transformed into business associations."; Act XIII of 1989 on the Transformation of Economic Organisations, Section 1.

[257] Szabó and Garcia Quesada (2017), p. 18.

[258] Act XIII of 1989 on the Transformation of Economic Organisations and Business Associations, Sections 1–3, in conjunction with Act VI of 1988 on Business Associations.

By converting public utility providers into business associations, their assets fell under corporate law regimes, including liquidation proceedings. During these proceedings, water utility assets were often not recognised as municipal property, but treated as transferable corporate assets, which made their unrestricted sale to private operators possible. This contributed to a gradual, then accelerating, increase in service providers after the Assets Act. The growing number of operators led to greater fragmentation and made any broader coordination of water services increasingly difficult.

This led to an exponential increase in the number of small local water companies. The system became highly fragmented by the early 2000s.[259] This resulted in uneven service quality, financial instability among providers, and increasing difficulties in regulation.[260] Over time, these structural weaknesses led to growing calls for reintegration and broader systemic reform. However, governance failures, rather than ownership models, became the primary drivers of inefficiency, inequality, and systemic instability. Still, the solution was often framed as going back to public ownership, as if the problems came from privatisation itself, rather than from how the system was governed.

1.4.2.1. Foreign Investment, Concessions, and Governance Failures in the Water Sector

The privatisation of Hungarian water services was highly dependent on foreign investments. Through concession agreements, multinational enterprises, Veolia, SUEZ, RWE, E.ON, and Berlin Wasser,[261] it took over the operation of water services.[262] In the privatisation processes, some local private companies also took part.

By opting for a more privatised system, one question emerged: who is in charge?
The privatisation model had major weaknesses, including the extent of oversight by the national authority.[263] Unlike in many Western European countries, Hungary did not establish a central authority to regulate the economic and financial aspects of water services. Economic aspects refer to social impact, pricing, and efficiency in the wider system, while financial aspects refer to costs, accounts, and revenues within the system. As a result, local governments

[259] Szabó and Garcia Quesada (2017), pp. 16–17.
[260] World Bank (2017a), p. 2; Kovács, K. (2019) 'Water utility integration in Hungary: Impacts and future expectations', *Society and Economy*, 41(4), pp. 509–522.
[261] Hall, D., Lobina, E. (2007) *Water privatisation and restructuring in Central and Eastern Europe*. London: PSIRU, University of Greenwich.
[262] Boda and Scheiring (2006), 95–101.
[263] OECD, *Water Governance in OECD Countries: From Principles to Practice* (OECD Publishing 2019).

were left to negotiate and supervise complex concession arrangements, despite often lacking the necessary technical and legal expertise to do so effectively.[264]

Another problem was how assets were valued during privatisation.[265] In many cases, municipalities took over water systems without properly checking their value or their actual condition. Because of this, it became harder to plan infrastructure and manage finances. This was not just a technical problem, but a governance issue, as these decisions were made without proper information or oversight.

1.4.2.2. Budgetary Constraints and Investment Challenges

The driving force behind the privatisation of water services in Hungary was the quick monetary gain, and as a secondary force was the prospect of improving water services in the country. The "monetarization of nature"[266] was not a key factor when economic growth is on the line. This can be observed in the example of the Budapest Waterworks, where the partial privatisation came after the entity was financially stable and well functioning, without any need for immediate investment to maintain its operation.[267]

One key motivation underpinning the privatisation of water services in Hungary was the aim of generating immediate fiscal revenue. As for Hungary, when Budapest Waterworks was partially privatised, it was already a well-functioning and financially stable entity, with no pressing investment needed for its operation. The sale of a 25% stake and giving control over the management rights was largely driven by short-term thinking and not a long-term system. As just 25% of the shares were sold, ownership remained under public governance, but the control over them went to the private operator. The Budapest municipal government decided to sell a 25% share, together with management rights, to a Franco-German consortium composed of RWE–Thames and SUEZ. The transaction, valued at approximately 15.5 billion Hungarian forints (15.5 billion HUF ≈ 60–65 million EUR-late 1990s rates), granted the private consortium management control for a period of 25 years.[268]

The planned benefits that were expected, however, never fully came into fruition. The infrastructure investments needed to achieve a good function of the water services were still

[264] World Bank, *Reforming Infrastructure: Privatisation, Regulation and Competition* (World Bank 2002).
[265] Hall and Lobina (2007).
[266] Bakker, K. (2010) *Privatizing water: Governance failure and the world's urban water crisis*. Ithaca: Cornell University Press, p. 81.
[267] Hall, D., Lobina, E. (2006) *Pipe dreams: The failure of the private sector to invest in water services in developing countries*. London: PSIRU.
[268] Boda and Scheiring (2006), pp. 95–101.

covered by public money.[269] Later, the city bought back the shares under the wave of (re)municipalisation.[270]

Similarly, in 2004, the municipality of Pécs reconsidered its privatisation arrangement, mainly due to increasing water tariffs and the private operator's failure to deliver the expected investments. In this case as well, the private partner was the widely criticised SUEZ. Partial privatisation also created additional difficulties, particularly by limiting municipalities' access to European Union development funds intended for water infrastructure.

1.4.3. 2010–Present: Wave of Remunicipalisation and Subsequent State Recentralisation

The Hungarian Fundamental Law puts an emphasis on the protection of the environment and health. The protection of public health is preconditioned by access to safe drinking water. Article P[271] of the Fundamental Law treats water resources as part of the nation's common heritage, pointing to a strong public and sovereign approach. Article XX further reinforces this by linking access to drinking water to the right to physical and mental health.[272]

The Act CCIX of 2011 on Water Utility Supply (Hereinafter:"Water Utility Act") changed yet again the trajectory of water utility service operation. This legislative shift brought back the principles of integration and regionalisation in the water services sector. It marked a move towards a more centralised and coordinated system to address the issues created by system fragmentation and improve accessibility, accountability, and financial sustainability.

Remunicipalisation was the direct response to the privatisation issues enumerated in the previous fragmented period. The political and practical view was to bring back the water services to the municipalities and regain control over them. The main driving idea is to bring them back under public control, and all of the issues will be fixed regarding water services. However, weak governance and capacity gaps created the issue, which could not be solved by just changing ownership models. After remunicipalization efforts stalled, a stronger and more central view emerged.

Abandoning the clear path from private to public, in Hungary, the change became more complex. It went from private to municipal to state, a shift from local to national control rather than a simple return to public ownership. The wave of Remunicipalisation did not mark a stable endpoint, but rather a transitional phase that ultimately led to increased state centralisation.

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[269] Boda and Scheiring (2006), pp. 95–101.
[270] WAREG – European Water Regulators (2021) *Reports and publications on water sector regulation in Europe.*
[271] Fundamental Law of Hungary (2011).
[272] Fundamental Law of Hungary (2011).

While the Act did not set an exact size for service providers, it introduced minimum thresholds based on the number of users, which were gradually increased over time (50,000 by 2013, 100,000 by 2014, and 150,000 by 2016). In practice, this pushed smaller providers to either merge or give up their licences.[273] As a result, the number of operators dropped significantly, from around 450 in 2010 to about 42 by 2015 and 36 by 2024, gradually shaping a more centralised, state-dominated system.[274] Gradually, it created rules that made it impossible for small providers to survive.

The Water Utility Act was a clear reaction to the previous regulatory model with three main points.

First, the law defined "water utility assets" as public infrastructure linked to municipal tasks, separating them from "operating assets" held by enterprises.[275] This fixed the grey area that had previously enabled privatisation. Second, it outlined the main service models, concession, lease, and asset management, making the division of responsibilities between municipalities and operators clearer.[276] Third, the role of the Hungarian Energy Office (Hereinafter: HEA), originally established in 1994, was extended to the water sector, allowing it to issue licences and oversee compliance and tariffs.[277] As well, HEA became the answer to the local pricing issues faced in the period of fragmentation.[278] But why was such a strong reform necessary?

To understand the Water Utility Act, we need to examine its reflection on the fragmentation period's greatest challenges: concessions, flexible contracts, private entry, loopholes and fragmentation. The Act XVI of 1991 on Concessions allowed local governments to delegate the provision of water services either to private undertakings through concession contracts or to state-owned enterprises.[279] In practice, these frameworks enabled operators to manage water infrastructure and collect user fees in exchange for payments to municipalities.[280] This introduced a considerable degree of flexibility into the system, opening the door to private actors as well.

[273] Kis and Ungvári (2019).
[274] Szabó and Garcia Quesada (2017), p. 19.
[275] Act CCIX of 2011 on Water Utility Services, Sections 2–3.
[276] Act CCIX of 2011 on Water Utility Services, Sections 15–20.
[277] Act CCIX of 2011 on Water Utility Services, Sections 3–4.
[278] State Audit Office (1996) Report No. 314, noting that "in many cases, local governments set prices below actual costs, considering the population's capacity to pay"; and State Audit Office (2012) Report No. T/7309, observing that "the depreciation included in the fees failed to fully cover asset renovation and replacement."
[279] Act XVI of 1991 on Concessions, Section 2(1).
[280] Szabó and Garcia Quesada (2017), pp. 18–19.

Prior to the third wave, lease-based arrangements were also widely used in the operation of water utilities. These structures enabled private capital to be involved without necessarily requiring formal concession procedures. Although private ownership in operating companies was initially limited to 49%, this threshold was often circumvented through contractual arrangements, allowing investors to exercise greater influence.[281] A 2007 amendment later prohibited private equity in new contracts, but the earlier contracts remained in place.[282]

Ownership structures were shaped by the principle of subsidiarity, which placed control over water infrastructure at the local level, with municipalities as the main owners.[283] However, in regional systems, higher costs in less populated areas led more efficient settlements to leave these arrangements and set up their own providers in order to reduce tariffs. Over time, this contributed to the breakdown of previously integrated utility structures. For example, if three towns share a system, a more efficient town (A) may leave if it has to cover the higher costs of smaller settlements (B and C), choosing instead to operate independently and lower its tariffs. As more municipalities act in this way, the shared system gradually breaks down, leading to an increasing number of smaller, independent operators and, ultimately, a highly fragmented sector. This was the case in Hungary, as almost 400 organisations provided water services by 2010, even though the 33 largest companies still served around 85% of the population.[284]

In response to these developments, the Water Utility Act introduced stricter licensing and operational requirements. However, the stricter regulatory requirements, centralised tariff control, financial pressure, and institutional restructuring gradually consolidated the sector without direct legislative mandates.

In order to further consolidate the sector, the Government introduced procedural fees and a public utility tax based on pipeline length. Together with stricter regulatory requirements, this increased the pressure on providers, especially the smaller ones. In practice, many could no longer operate on their own and were forced to merge or exit the market. As a result, the number of providers dropped significantly, from around 450 in 2010 to 42 by 2015 and further to 36 by 2024.[285]

Until around 2012, efforts to (re)municipalise the sector were present, but they did not fully materialise. Instead, these developments gradually shifted towards Recentralisation, with

[281] Szabó and Garcia Quesada (2017), pp. 18–19.
[282] Act CXXI of 2006, § 10(1), amending Act LVII of 1995.
[283] Kis and Ungvári (2019), p. 79.
[284] Ungvári, G., Koskovics, É. (2010) 'Áttekintés a magyar víziközmű-ágazatról' in Valentiny, P. et al. (eds.) *Verseny és szabályozás*, pp. 305–328.
[285] Szabó and Garcia Quesada (2017), p. 19.

the State taking an increasingly active role in both ownership and management. Measures such as the Public Utility Network Tax[286] and government policy,[287] which reduced the revenues of service providers, increasing their financial dependence on the State, placed additional pressure on municipal providers and, in practice, transferred effective control to state institutions.

During 2019–2021, the system had developed into a model of consolidated state oversight, with HEA exercising comprehensive regulatory control, while local governments retained only formal ownership. The establishment of the National Water Works (Országos Vízművek Zrt.) in 2021 marked the final step in this process, as assets and operational control were increasingly centralised at the national level.[288]

Although the Water Utility Act aimed to stabilise the sector and strengthen consumer protection, its longer-term effect was a shift away from local self-government towards full state control. What initially appeared as a move towards (re)municipalisation, as a response to the shortcomings of privatisation, ultimately evolved into state-led centralisation, where ownership, regulation, and service provision became concentrated in the hands of the central government.

2. Romania

2.1. 1948–1989: The Wave of Integration

The first phase of water service organisation, in Romania, follows the same pattern as in the Hungarian example, as in the integration under a centrally planned system. With nationalisation, water services were brought under state control and organised within a unified administrative structure, very similarly to other countries under the Soviet-type dictatorship.

Legislation in this period followed centralisation efforts, strengthened public ownership, and created a somewhat hierarchical governance. In this period, water was treated as a state-managed resource, with limited autonomy given to the local authorities and no real separation between policy-making, operation, and control. Later, under the Ceaușescu regime, governance was characterised by an even higher degree of centralisation, with little emphasis on the citizens' needs for water access and quality. The system aimed to achieve uniform provision of

[286] Act CLXVIII of 2012 on the Public Utility Network Tax.
[287] "Rezsicsökkentés"Hungarian legislation introduced a 10% reduction in household utility tariffs in 2013, including water and wastewater services, followed by a prolonged tariff freeze at 2013 levels.
[288] Nemzeti Vízművek Zrt. (n.d.) 'Tevékenységre vonatkozó adatok', stating that from 1 January 2021 the company exercises the ownership rights and obligations of the Hungarian State over state-owned water utility service providers and state-owned water utility systems;Szekeres, Á. (2025) 'From Privatisation to Remunicipalisation: How Returning to Public Control of Water Services Benefits Hungarian Society', *Journal of Agricultural and Environmental Law*, 20(38), pp. 313–346, p. 337.

water, but without mechanisms for efficiency, accountability, or financial sustainability of the system.

Key legislation in this period consists of:

- Law No. 119/1948 on Nationalisation
- Constitution of the Romanian People's Republic (1948)
- Law No. 57/1968 on the Organisation of People's Councils
- Law No. 8/1972 on Water

2.2. 1989–2005: Waves of Fragmentation, Decentralisation, and Commercialisation

In the transition period after 1989, a shift can be seen from centralised control towards decentralisation and institutional fragmentation, as in the Hungarian example. It is a common response to the over-centralised models created by Soviet-type regimes. During this period, the new constitutional and legal framework reintroduced local autonomy and transferred responsibilities back to municipalities in order to address the problems left by the centralised system. The public services, including water, began to be reorganised along more commercial lines, opening up to the market. In this phase, the coexistence of multiple local operators was common, with diverse management models and contractual arrangements regarding the water services. While initially it increased flexibility, it also led to coordination problems, uneven service quality and quantity, and limited investment capacity in the water sector.

The important legal sources for this period are:

- Constitution of Romania (1991)
- Law No. 215/2001 on Local Public Administration
- Law No. 213/1998 on Public Property
- Law No. 326/2001 on Public Utility Services
- Legacy concession contracts, such as those in Bucharest and Ploiești.[289]

2.3. 2006–Present: The Wave of EU-Driven Regionalisation and Consolidation

In the most recent phase, we can see a strong influence of European Union law and funding mechanisms, divergent from the Hungarian example. The legal framework shifted towards regionalisation to overcome fragmentation and also improve efficiency through it. Water services in this period were reorganised into regional operators, supported by external financing

[289] Concession contracts concluded between the Municipality of Bucharest and Apa Nova București S.A. (2000), and between the Municipality of Ploiești and Apa Nova Ploiești S.R.L. (2004).

and guided by EU requirements, particularly in relation to environmental standards and cost recovery, a predicament to access these funds. Thus, on paper, the system became more structured, with clearer regulatory oversight and defined institutional roles.

However, this phase in practice brought new challenges in balancing financial sustainability, coordination, and accountability across different levels of water service governance.

- Law No. 107/1996 on Water
- Law No. 51/2006 on Community Public Utility Services
- Law No. 241/2006 on Water Supply and Sewerage Services
- Government Emergency Ordinance No. 198/2005 on the establishment, organisation and functioning of community public utility services
- Government Decision No. 855/2008 approving the Strategy for the Development of Community Public Utility Services
- ANRSC (Autoritatea Națională de Reglementare pentru Serviciile Comunitare de Utilități Publice) regulatory framework
- Subsequent amendments to Law No. 241/2006 and Law No. 51/2006

2.4. The Evolution of Legal Framework and Ownership in Romania

Period	Wave	Dominant Ownership Model	Role of the Private Sector	Key Characteristics	Governance Logic
1948–1989	Integration (Socialist Model)	State Ownership Model	None	- Full state ownership - No separation of functions - Central planning	Centralised, hierarchical
1989–2005	Fragmentation, Decentralisation, and Commercialisation	Municipal Ownership + Mixed Models	Significant (expanding)	- Assets transferred to municipalities - Concessions and leases introduced - Entry of foreign operators	Fragmented, weak coordination
2007–Present	EU-Driven Regionalisation and Consolidation	Public (Municipal/Inter-Municipal) Ownership with Regional Operators	Limited (residual / legacy contracts)	- Public ownership retained - Regional operators created - EU funding conditionality - Strong regulation (ANRSC)	Coordinated, EU-influenced

Table 2. The Evolution of Legal Framework and Ownership in Romania

The history of the regulation in Romania of the water supply and sewerage service as part of public services begins in 1938, when the legislature at that time understood the need to regulate public services and approved Law No. 129/1938 on the organisation and functioning of

municipal enterprises.[290] The legal framework was modified in 1981 through the adoption of Law No. 4/1981 on municipal services, which established that municipal services, including water supply and sewerage services, are public services of local interest and fall under the competence and responsibility of local authorities.

2.4.1. 1948–1989: The Wave of Integration

With the establishment of the planned economy, the regime of water resources in Romania was fundamentally modified.[291] The 1948 Constitution[292] provided in Article 6:

> "The riches of any kind of the subsoil, mineral deposits, forests, waters, sources of natural energy, means of communication by rail, road, water and air, the post, telegraph, telephone and radio belong to the State, as common goods of the people."

The planned economy changed the terminology on public property, as this term was substituted for the common goods of the people for water resources and other natural resources. The post, telephone, and radio were also included among natural resources, without any explanation or evident rationale.

In 1965, with the adoption of the new Constitution,[293] state ownership was widened as Article 7 stated that water resources, together with other natural resources, belonged to the whole people. Here, the Romanian State was named as the sole owner.

The legislation on the use and extraction of water was also widened to reflect the new constitution.

The most important aspect of this period was the Water Management Law,[294] which underwent several amendments over time to keep up with the needs of the regime. The law covered all waters: (a) surface waters: natural and artificial watercourses, natural and artificial lakes, ponds; (b) underground waters, phreatic and deep waters, including springs; and (c)

[290] Autoritatea Națională de Reglementare pentru Serviciile Comunitare de Utilități Publice (ANRSC) [National Regulatory Authority for Community Public Utility Services] (2021) *Raport privind analiza cadrului de reglementare economică* [Report on the Analysis of the Economic Regulatory Framework].
[291] Academia Română [Romanian Academy] (ed.) (2019) *Economia României după Marea Unire* [The Romanian Economy after the Great Union]. Vol. II, pp. 106–126.
[292] Romania (1948) *Constituția Republicii Populare Române* [Constitution of the Romanian People's Republic].
[293] Romania (1965) *Constituția Republicii Socialiste România* [Constitution of the Socialist Republic of Romania].
[294] Romania (1972) *Legea nr. 5/1972 privind gospodărirea apelor* [Law No. 5/1972 on Water Management].

inland maritime waters and the territorial sea.[295] Under the law, no water management works could be carried out without permits issued by the competent authorities.[296]

From a legislative point of view, supplying water to the population was the priority, trouncing over other uses, like agriculture or industry, as the population takes precedence.[297] As "[g]roundwater, including springs, is primarily intended for the drinking water supply of the population and may not be used for other purposes unless the water supply needs of the population are not affected, with the exception of firefighting."[298]

In practice, this priority was unevenly implemented, particularly in rural areas, where the industrial and agricultural uses needed to be prioritised to achieve the quota as the regime asked for. Drinking water demand was larger in the populated cities and towns, as the agricultural workers were transformed into the working class and drawn in by new housing projects.

The rural population had faced difficulties due to the agricultural pressure for water, as large parts of the rural areas were not connected to the pipes. The need to access drinking water was a problem for urban and rural areas, with the latter being more affected. Moreover, the sewerage situation was extremely poor, as domestic wastewater was directly discharged into water bodies, causing imminent problems for the people and agriculture. Thus, infrastructure was needed, and the construction began.

Year	Localities – Total	of which Cities/Towns	Network Length (km)	of which Cities/Towns	Urban (%)	Rural (%)	Drinking Water Distributed (thousand m³)	of which for Domestic Use
1950	101	88	3,700	3,638	98.32%	1.68%	113,245	47,860
1960	172	125	5,162	4,920	95.31%	4.69%	263,724	92,610
1970	309	195	9,244	8,631	93.37%	6.63%	806,924	284,419
1980	1,541	233	19,060	13,348	70.03%	29.97%	1,930,611	754,665
1989	2,301	260	27,795	18,178	65.40%	34.60%	2,723,812	1,205,779

Table 3. Drinking Water Supply in Romania (1950–1989)[299]

[295] Romania, Law No. 5/1972, Art. 2.
[296] Academia Română (2019), pp. 106–126.
[297] Romania, Law No. 5/1972, Art. 34.
[298] Academia Română (2019), pp. 106–126.
[299] Table based on Academia Română (2019); Romanian National Institute of Statistics, *Statistical Yearbooks* (1960–1990).

The development of the Romanian water sector during the socialist period brought a significant expansion of the public water infrastructure. As Table 3 shows, the number of localities served by public water supply systems increased from only 101 in 1950 to 2,301 by 1989. In parallel, the length of the distribution network grew from around 3,700 km to 27,795 km. An important part of this development was the gradual expansion of the infrastructure outside the urban areas. In 1950, 98.32% of the network was still located in cities and towns, while only 1.68% was in rural areas. By 1989, this changed considerably, with the urban share decreasing to 65.40% and the rural share reaching 34.60%.

The biggest territorial expansion can be seen after 1970. The number of localities served increased from 309 in 1970 to 1,541 in 1980, and further to 2,301 by 1989. The amount of drinking water distributed also increased significantly during this period, from around 113.2 million m³ in 1950 to 2.72 billion m³ in 1989. A similar increase can be seen in water distributed for domestic use, which grew from approximately 47.9 million m³ to 1.21 billion m³.

Therefore, the socialist period in Romania was not only a period of strong centralisation of the water sector, but also one of considerable infrastructure development. The system gradually moved from an almost exclusively urban network towards one which had an increasingly important presence in rural areas as well. Still, the difference between urban and rural areas remained significant by the end of the period. The expansion of the network therefore did not necessarily mean that access to water

2.4.1.1. Governance Logic And Planning

The law contained provisions for all uses of water: industry, agriculture, water supply, receiving bodies for polluted water, flood prevention, alluding to a progressive character, although its implementation in practice was deficient in the field of pollution prevention.

A hierarchy of importance was also legislated: rapid industrial development, the modernisation of agriculture, the increase in the level of urbanisation, water pollution, and, lastly, the prevention of damage caused by floods.[300] Water was viewed exclusively as a resource to be exploited,[301] with limited concern for sustainable management, the reduction of water consumption, or the prevention of pollution. We will find examples of the opposite, below, but fewer.

[300] Romania (1972) *Expunere de motive la Legea nr. 5/1972 privind gospodărirea apelor* [Explanatory Memorandum to Law No. 5/1972 on Water Management].
[301] Academia Română (2019), pp. 106–126.

Between 1974 and 1990, national water management programmes were developed for the medium and long term, which further underline, in some ways, a flawed but nevertheless progressive direction.[302]

2.4.1.2. Local Illustrations From The Socialist Period

The following excerpts show how water services actually functioned during the socialist period. Instead of a smooth picture of progress, they point to uneven performance and technical limits.

Early sources indicate that the water supply was subject to disruptions and reactive planning. In 1948, for instance, the population of Iași "suffered from water shortages" when the Timișești pipeline malfunctioned, prompting authorities to "increase the capacity… by an additional 200 m³/day" and to construct new facilities.[303] By 1956, infrastructure projects were expected to meet multiple, and often competing, requirements, including "water quality, flow volume… relatively short execution time, and minimal costs".[304]

By the end of the 1950s, internal administrative records were showing more systemic challenges. Although water supply installations formally existed in several localities, their functioning was often limited by "the age of the infrastructure" and "insufficient flow", resulting in inadequate service provision.[305] In Târgu Mureș, the system had reached its limits, as "the capacity of the water plant has been reached", leading to pressure drops and situations where "taps no longer function".[306] In Reghin, the lack of potable water sources forced the population to rely on river water, with "cases of typhoid… more frequent", while the existing network covered only a small portion of the city.[307] In other localities, such as Târgu Secuiesc, "there is no drinking water supply system", and in Sfântu Gheorghe, the infrastructure, "dating from 1900", had become insufficient both in capacity and coverage.[308]

Public discourse revealed that water governance extended beyond infrastructure, as official messaging combined promises of expansion, such as "3,500 km of new distribution networks",

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[302] Romania (1974) *Water Law No. 8/1974*; Romania (1976) *Law No. 1/1976*; Romania (1989) *Law No. 5/1989*.
[303] "Increase in Water Flow from Ciric and Șapte Oameni" (translated from Romanian: „Sporirea debitului de apă de la Ciric și Șapte Oameni"), *Opinia*, regional daily newspaper, 29 July 1948, reporting on early post-nationalisation efforts to expand urban water supply infrastructure in Iași and surrounding areas, reflecting the broader shift towards centralised management of water resources in the early socialist period.
[304] Peiu, N., Ostap, C., Simionescu, D. (2023) *Lungul drum al apei pentru Iași*. 2nd edn. Iași: Asachiana (author's translation).
[305] Romanian Communist Party, Mureș County Committee (1959) *Records of the bureau meetings of the regional party committee concerning the economic and social development of the Hungarian Autonomous Region (1959–1975)*, Fund no. 3, File no. 226, 29 August 1959, 254 folios, p. 54 (author's translation).
[306] Romanian Communist Party, Mureș County Committee (1959), p. 54 (author's translation).
[307] Romanian Communist Party, Mureș County Committee (1959), p. 138 (author's translation).
[308] Romanian Communist Party, Mureș County Committee (1959), p. 138 (author's translation).

with explicit concern over "excessive consumption" and system losses.[309] Citizens were directly addressed as participants in maintaining the system, with the call to use water rationally, "S-o folosim chibzuit, să n-o risipim!" [Let us use it wisely, not waste it!], and to fulfil their "datoria… în privința întreținerii instalațiilor" [duty… regarding the maintenance of installations] (see Annex 4).

These examples show that, despite ongoing efforts to expand infrastructure, water services operated under persistent structural limitations. Service provision remained uneven, and improvements often took the form of reactive, localised interventions rather than systemic solutions. Reducing losses and moderating consumption indicate that governance relied not only on technical expansion, but also on shaping user behaviour. This dual approach shows that service performance was shaped less by formal structures and more by the limits of their governance in practice.

2.4.2. 1989–2005: Waves of Fragmentation, Decentralisation, and Commercialisation

After 1989, the legal framework governing water services was progressively reformed from a planned economy to a market-oriented system, to reflect the new constitutional and administrative order. Public utility services, including water supply and sewerage services, were once again placed under public law, more precisely administrative law, abandoning the concept of "common goods of the people".[310] In 2001, the regulatory framework was improved, detailed, and amended. The new constitutional system,[311] coupled with the new Law on local public administration No. 215/2001,[312] and Government Ordinance No. 32/2002[313] on the organisation and functioning of public water supply and sewerage services, served as the benchmark for water services.

[309] Scînteia (1976) 'Mai multă grijă pentru apa potabilă' [More Care for Drinking Water], 24 September, p. 2 (author's translation).
[310] ANRSC (2021), *Raport privind analiza cadrului de reglementare economică în domeniul de apă și apă uzată în statele membre UE* [Report on the Analysis of the Economic Regulatory Framework in the Water and Wastewater Sector in EU Member States].
[311] Romania (1991) *Constitution of Romania* (as amended).
[312] Romania (2001) *Legea nr. 326/2001 privind serviciile publice de gospodărie comunală* [Law No. 326/2001 on Public Municipal Services].
[313] Romania (2002) *Ordonanța Guvernului nr. 32/2002 privind organizarea și funcționarea serviciilor publice de alimentare cu apă și de canalizare* [Government Ordinance No. 32/2002 on the Organisation and Operation of Public Water Supply and Sewerage Services], approved by Law No. 634/2002.

The Constitution of Romania, on the basis of water resources, is as follows:

> "1. Property may be public or private. 2. The law guarantees and protects public property that belongs to the State or territorial-administrative units. 3. The mineral resources that are of public interest… water resources that can be used for power production in the public interest, beaches, the territorial sea, the natural resources of the economic zone and the continental shelf, as well as other assets defined by law constitute exclusive public property. 4. Public property is non-transferable. Under the terms of the organic law, public property can be managed by autonomous entities, public institutions, or licensed or leased; it can also be transferred to public utility institutions for free use."[314]

Law No. 326/2001 was the foundation of the public utility services in Romania. This defined the responsibilities of central and local public administration, as it included the regulation, organisation, management, and control of public services.

Responsibilities were divided, as the Government had power in overall state policy in the field of municipal services through the initiation and adoption of legislation, while local public authorities were assigned competencies concerning the establishment, organisation, and operation of public services.[315]

Law No. 326/2001 established the National Regulatory Authority for Public Utility Services (Hereinafter: ANRSC), acting as the regulator of municipal public services in Romania. The ANRSC was coordinated by the Prime Minister and financed from its own revenues.[316]

ANRSC acquired competences regarding (i) the licensing and authorisation of operators, (ii) the approval of prices and tariffs for public services, and (iii) the monitoring and control of operators.

After this, Government Emergency Ordinance No. 32/2002 was adopted, establishing, on the one hand, the relationships between central/local public authorities and service operators, and, on the other hand, the relationships between operators and users.[317]

In 2002, several key instruments were approved, including the procedure for setting, adjusting, and modifying tariffs, the framework regulation for the organisation and operation

[314] Romania (1991) *Constituția României*, Art. 136.
[315] ANRSC (2021).
[316] ANRSC (2021).
[317] Romania, Government Ordinance No. 32/2002 on the Organisation and Operation of Public Water Supply and Sewerage Services.

of water supply and sewerage services, and the service provision contract.[318] In 2003, this framework was complemented by the procedure for delegation, the model delegation contract, and the framework specifications for the delegation of service management.[319] However, as noted in the literature, "this organic dimension will be greatly reduced when the state … delegates to some individuals the provision of certain activities that it fails to carry out on its own."[320] This can be understood as meaning that delegation alters not only the provider, but the very character of the public function itself.

2.4.3. 2007–Present: The Wave of EU-Driven Regionalisation and Consolidation

With the initiation of Romania's accession process to the European Union and in order to harmonise Romanian legislation with the EU regulatory framework, public utility services in Romania had to be brought up to speed. As the revolution concluded, Romania inherited a state-run, centralised water service system. A rush to modernise the country led to an initial openness to privatisation, to attract foreign investors.[321] These schemes attracted multinational companies, and they started to invest. This meant some areas were experiencing growth in infrastructure and efficiency, while others had to deal with rising costs and service delivery delays.[322] With the possibility of accession to the EU, the private-public ownership debate gained traction and public interest was pinned against private profit once again. Romania's privatisation process was characterised by several regulatory approaches. In some cases, contracts included clauses allowing the return of services to public control if performance standards were not met. This flexibility aimed to protect access to water while allowing private sector involvement. Moreover, privatisation generated public debate, with critics arguing that water, as a fundamental human right, should not be subject to market mechanisms or profit-oriented models.

The privatisation of the water service in Romania produced uneven results across the regions. While some cities recorded improvements in infrastructure and efficiency under

[318] Romania, ANRSC (2002) *Procedure for the Setting, Adjustment and Modification of Prices and Tariffs for Public Municipal Services*; Romania, ANRSC (2002) *Framework Regulation for Water Supply and Sewerage Services*; Romania, ANRSC (2002) *Service Provision Contract*.
[319] Romania (2003) *Procedure for the Delegation of Management of Water Supply and Sewerage Services*; *Model Contract for Delegation* (2003); *Framework Specifications* (2003).
[320] Andrei, A.C. and Papuc, I.E. (2018) 'Evolution of public utility services over the last 20 years in Romania', *SEA – Practical Application of Science*, 6(17), pp. 171–175, at p. 172.
[321] Brouthers, L., Văduva, S., Tiron Tudor, A. and Burțic, D. (2023) 'The transformation of the Romanian economy through privatisation and internationalization', *Journal of East European Management Studies*, 28, pp. 265–292.
[322] Brouthers et al. (2023).

privatised models, smaller municipalities often faced higher tariffs and weaker accountability, prompting reconsideration or reversal of privatisation agreements.

The current regulatory framework was adopted, represented by Law No. 51/2006, together with a new set of normative acts for each public service, namely Law No. 241/2006 on water supply and sewerage services. Law No. 241/2006,[323] the special law governing water supply and sewerage services establishes the main components of the regulatory framework, namely:

- defining the specific terms of water and sewerage systems
- establishing the principles of organisation and operation of services
- establishing the need for performance indicators
- the status and role of public authorities and their competences
- the forms of service management
- categories of users
- rights and obligations of operators
- rights and obligations of users
- financing of services
- alternative smart public services for the treatment of urban wastewater
- liabilities and sanctions

The regulation of water supply and sewerage services is complemented by the general framework established by Law No. 51/2006, concerning:

- ownership of assets
- public service obligations
- categories and requirements for water operators
- licensing
- service provision (contracting, billing, etc.)

The role of the water underwent some changes in the meantime. Law No. 51/2006 on community public utility services prescribed that water is no longer considered a good

[323] Academia Română (2019), pp. 106–126.

belonging to the whole people, but a natural resource forming part of the public domain of the state.[324]

The ownership of water supply and sewerage systems belongs to administrative-territorial units in most cases, as public property. However, there are assets that belong to the private property of administrative-territorial units or operators.

Moreover, Law No. 107/1996[325] was amended and supplemented several times in order to harmonise with the EU law. Until 2007, when Romania became a member of the EU, all European water legislation was transposed.

Through the transposition of the EU water acquis, a massive institutional and legislative modernisation took place, which was unprecedented before. The impact of the EU law is still undeniable in the legal field in Romania. EU requirements introduced higher standards of environmental protection and increased transparency in public procurement. These developments encouraged the use of public-private partnerships (PPPs) as a middle ground between full privatisation and state provision. PPPs allow for private investment and expertise, while maintaining public control over regulation.[326] However, without public regulatory oversight, it tends to face the same problems as both purely public and purely private models. Moreover, the legal discourse highlights that private participation must remain balanced with the need to protect water as a public resource.[327]

2.4.3.1. Regionalisation

But what is regionalisation?

Regionalisation in water supply and wastewater services refers to the integration of multiple local systems into a single regional operator. This operator brings together the technological, operational, and managerial components of previously separate services.[328] The main objective of this process is to improve performance and service quality by leveraging shared resources and infrastructure. In practice, regionalisation means concentrating and coordinating services across several administrative-territorial units within a defined geographical area, often based on river basins or administrative boundaries. As a general

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[324] Romania (2006) *Legea nr. 51/2006 a serviciilor comunitare de utilități publice* [Law No. 51/2006 on Community Public Utility Services], Art. 2(j) and (l).
[325] Romania (1996) *Legea apelor nr. 107/1996* [Water Law No. 107/1996], Art. 1.
[326] European Commission (2007) *Impact of EU Accession on National Water Policies: The Romanian Experience Revisited*.
[327] Romanian Ministry of Water (2018) *Current trends in water service regulation*; Romanian Ministry of Water (2019) *National policy papers: Future directions in Romanian water management reform*.
[328] Frone, S. (2008) 'Factors and challenges of regionalization in the water and wastewater sector', *Romanian Journal of Economics*, 27(2), pp. 185–186.

approach, regional systems are designed to serve a sufficiently large population, typically covering at least 100,000 population equivalents and including as many urban agglomerations as possible within a county or basin.[329] Public authorities, to achieve integrated water resource management, improve efficiency, address environmental concerns, and ensure compliance with the requirements of Directive 2000/60/EC, use this method.

However, regionalisation and formal compliance with EU water requirements do not exhaust the question of resilience. Scientific evidence from Romania shows that water governance must also address emerging pollutants that are not always covered by conventional monitoring. Szekeres, in her research, detected antibiotic residues, antibiotic resistance genes, mobile genetic elements, and microbial contaminants in groundwater environments around Cluj-Napoca, including in sites situated outside the immediate urban area.[330] In a related study on hospital wastewater effluents from Cluj County, the authors found similar types of contamination in both untreated and treated wastewater and showed that conventional treatment, based on activated sludge and chlorine disinfection, had only moderate removal efficiency for the studied pollutants.[331] Although antibiotic concentrations decreased by 55–80% and antibiotic resistance gene concentrations decreased by one to three orders of magnitude, certain potentially pathogenic bacteria increased, and even treated effluents could still contribute to the spread of emerging contaminants. In this sense, resilience should be understood not only as the continuity of service provision, but also as the legal and institutional capacity to recognise, monitor, and respond to new forms of environmental and public-health risk.

2.4.3.2. Water Management in Romania

The water services sector in Romania has undergone a process of regionalisation, aimed at addressing the high level of fragmentation and improving efficiency.[332] Historically, the sector was characterised by a large number of small, local providers, which limited capacity and led to uneven service quality.

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[329] Frone (2008), p. 186.
[330] Szekeres, E. et al. (2018) 'Investigating antibiotics, antibiotic resistance genes, and microbial contaminants in groundwater in relation to the proximity of urban areas', *Environmental Pollution*, 236, pp. 734–744.
[331] Szekeres, E. et al. (2017) 'Abundance of antibiotics, antibiotic resistance genes and bacterial community composition in wastewater effluents from different Romanian hospitals', *Environmental Pollution*, 225, pp. 304–315.
[332] Frone, D.F. and Frone, S. (2019) 'Regionalization increasing access to water supply and sanitation in rural Romania', *Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development*, 19(2), p. 135.

Regionalisation in Romania sought to reduce this fragmentation by reducing the number of operators and ensuring more consistent, reliable service provision across regions. At the institutional level, this process involved reorganising existing municipal services by integrating their operations across several administrative-territorial units within a defined geographical area, often based on river basins or administrative boundaries.[333]

The objective was to create a limited number of large operators by merging local utilities into Regional Operating Companies (ROCs). These entities operate as public service providers within Intermunicipal Development Associations, composed of local authorities, including municipalities and local communities.[334]

The process of regionalisation has led to the establishment of 43 Regional Operators.[335] These are organised as public commercial companies owned by local authorities. To implement regionalisation, municipalities form inter-municipal development associations and delegate water supply and wastewater services to these regional operators.

Moreover, some large urban areas have followed a different approach. In Bucharest and Ploiești, covering approximately 9% of the population, water services are delegated to private operators with mixed capital.[336] In these cases, subsidiaries of the Véolia group operate under long-term contracts of approximately 25 years.[337] But we have to highlight that these are legacy contracts, closed before the accession to the EU. So, it means it sets up a financial system that helps maintain and prolong the durability of water services. The differentiation in recovery mechanisms based on the funding source (own or public funds) reflects a resilient funding approach. When we decide on the amount to charge, we consider the value of publicly owned assets and whether people can afford them. This shows our dedication to ensuring the community can economically and socially withstand challenges.

Water supply and sewerage services can be managed either directly or through delegation, depending on the decision of local public authorities.[338]

In the case of direct management, local authorities assume full responsibility for the organisation, operation, and maintenance of the service.[339] This form of management is carried

[333] Onillon, A. and Fribourg-Blanc, B. (2023) *Economic Models for Water Management and Pricing in Europe: The Case of Romania*. Paris: OiEau – Office International de l'Eau, p. 9.
[334] Onillon and Fribourg-Blanc (2023), pp. 3–4.
[335] Autoritatea Națională de Reglementare pentru Serviciile Comunitare de Utilități Publice (ANRSC) (2023a) *Raport ANRSC* [ANRSC Report].
[336] ANRSC (2023a).
[337] Onillon and Fribourg-Blanc (2023), pp. 3–4.
[338] Romania (2006) *Law No. 241*, §18.
[339] Romania (2006) *Law No. 241*, §19.

out through public operators, which act based on a decision of the local authority and a licence issued by the ANRSC

Under delegated management, local authorities or inter-community development associations transfer the operation of the service to one or more operators, based on a delegation contract concluded in accordance with Law No. 51/2006.[340] The operator is responsible for the operation of the infrastructure and must hold a licence issued by the ANRSC, while the contract is approved by the competent deliberative authorities.

A central element of delegated management is the allocation of responsibilities between the authority and the operator, particularly in relation to investments. The contract must regulate the full lifecycle of investments, including financing and implementation, as well as the recovery of costs, depending on the source of funding.

Based on national reports, water services in Romania face several challenges, including lower access rates compared to other European countries, significant rural and urban access and quality of water, and uneven service quality, particularly among smaller operators, impacting already vulnerable areas of the country. The reliability of the sourced data is problematic, most commonly in smaller localities with high water losses.[341]

The World Bank also highlights that Romania is likely to be among the most affected countries in the Danube basin by climate change, signalling a need for a more resilient water sector.[342] Although reforms such as commercialisation and regionalisation have progressed in Romania, the process is still incomplete, and access to safe, quality and sufficient quantities of water is still not achieved. As late as 2020, only 72.4% of Romania's population had access to public water supply and sanitation, with coverage dropping to around 35% in rural areas, where many communities still rely on unmonitored groundwater sources such as wells, springs, and cave waters for drinking water.[343] The disparity between the Roma and non-Roma populations in accessing safe water services is also unavoidable in the country.[344]

2.5. The example of Concession in Bucharest

Article 2 of Law No. 51/2006 defines the operator/regional operator of the water supply and sewage service, under subpoints g) and h). The operator may be a public or private legal entity,

[340] Romania (2006) *Law No. 241*, §20.
[341] Autoritatea Națională de Reglementare pentru Serviciile Comunitare de Utilități Publice (ANRSC) (2023b) *Raport analiză ANRSC pentru anul 2023* [ANRSC Analysis Report for 2023].
[342] World Bank Group (2018) *Romania Water Diagnostic Report*.
[343] Szekeres, E. et al. (2023) 'Karst spring microbiome: Diversity, core taxa, and community response to pathogens and antibiotic resistance gene contamination', *Science of the Total Environment*, 895, 165133.
[344] Szekeres et al. (2023).

with public, private, or mixed capital, registered in Romania, another EU Member State, or a third country.

The concession model represents a specific form of delegated management, where the operation of water supply and sewerage services is transferred to an operator under a contractual framework, while ownership of the infrastructure remains public. In Bucharest, the case of concession is still relevant to be examined. As provided,

> "The management of the water supply and sewerage service in the Municipality of Bucharest is delegated to Apa Nova București S.A., on the basis of General Council Decision No. 85/2000 and Concession Contract No. 1329 of 29 March 2000".[345]

Here, public ownership is preserved, while operational responsibilities are transferred to a private operator, creating a hybrid model. The legal framework clearly distinguishes between the

> "Public domain – the totality of movable and immovable assets acquired according to the law, which are in the public ownership of administrative-territorial units and which, by law or by their nature, are intended for public use or local public interest, as declared by a decision of the General Council of the Municipality of Bucharest."[346]

> And the

> "Operator – a legal entity holding a licence that authorises it, in accordance with the applicable regulations, to provide the public water supply and sewerage service, and which administers and operates the related public utility systems. In the Municipality of Bucharest, the operator is Apa Nova București S.A. (ANB)."[347]

The concession contract establishes a detailed system of obligations for the operator.

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[345] Consiliul General al Municipiului București [General Council of the Municipality of Bucharest] (2015) *Regulamentul serviciului public de alimentare cu apă și de canalizare* [Regulation of the Public Water Supply and Sewerage Service], HCGMB No. 82/2015, p. 11.
[346] Consiliul General al Municipiului București (2015), p. 8.
[347] Consiliul General al Municipiului București (2015), p. 8.

> "The operator must ensure the continuous functioning of the public drinking water supply and sewerage system, as well as the industrial water supply system, in accordance with the provisions of the Concession Contract. For this purpose, the operator is obliged to carry out the necessary works for the maintenance, repair, renewal, modernisation, and development of the public water supply and sewerage system, in accordance with the provisions of the Concession Contract."[348]

In addition, the operator must comply with predefined service levels, including monitoring procedures, performance indicators, and corrective measures. Moreover, access to the service remains framed as a guaranteed right:

> "The right of non-discriminatory access to and use of the service is guaranteed to all users, under the contractual conditions and in compliance with the provisions of the service regulation and the programmes for the rehabilitation, expansion, and modernisation of water supply and sewerage systems."[349]

This highlights that, despite private operation, access is still regulated as a public service obligation.

Finally, the concession's financial structure is based on metering and cost-recovery mechanisms.

V. Governance

1. General Introduction to EU Water Governance

Water services formally remain within the competence of the Member States. Yet this formal allocation of powers does not reflect the actual influence of European intervention in the sector. With the growing importance of water, the EU also widened its scope, constructing a legal and policy framework governing water quality, environmental protection, pricing principles, state aid, and, more recently, macro-economic coordination.[350]

Water, therefore, sits in a constitutional grey zone, because it is nationally organised, yet increasingly Europeanised. Governance arrangements are understood as the result of a dialogue

[348] Consiliul General al Municipiului București (2015), p. 18.
[349] Consiliul General al Municipiului București (2015), p. 15.
[350] Gasseau, G. (2023) 'The political economy of water services in the EU' (conference paper, Naples).

between institutional structures and socio-political agency.[351] Economic imperatives, political conflicts, and social movements shape this field while simultaneously restructuring it.[352]

In March 2023, the United Nations convened a global water conference, refocusing attention on water as a systemic issue. Within the EU, the European Economic and Social Committee launched discussions on a proposed "EU Blue Deal," as water is becoming an asset for countries.[353] These further highlight the idea that access to water will emerge as the most important problem to solve. Water governance in Europe had an interesting evolution in the EU.

European water legislation emerged in the 1970s and 1980s, primarily as environmental regulation. Early directives focused on water quality standards, pollution control and the protection of raw water sources.[354] The objective was ecological improvement rather than service organisation. Affordability or universal access was not a central problem yet, thus these remained within Member State competence.

From an economic perspective, however, even these early measures had structural implications. By introducing harmonised water quality standards across the Union, EU law reduced the role of environmental conditions as a factor of competition. In this sense, environmental regulation had a "de-commodifying" effect, as minimum standards were removed from market logic and placed under collective political control.[355]

The environmental phase of EU water governance thus laid the groundwork for later developments. In the beginning, it was limited to ecological objectives; later, it created common regulatory baselines and institutional mechanisms that would eventually support broader integration in the sector.

2. What Is Water Governance?

The notion that "the water crisis is a governance crisis", prominently articulated by the OECD more than a decade ago, has since become a recurring theme in global discourse. The 2023 report of the Global Commission on the Economics of Water further reinforced this narrative.[356]

[351] Giannone, D., Cozzolino, A. (2022) 'The state? Critical issues and possible new research avenues', *Soft Power*, p. 144.
[352] Zwarteveen, M. et al. (2017) 'Engaging with the politics of water governance', *WIREs Water*, 4(6).
[353] European Economic and Social Committee (no date) *EU blue deal*.
[354] Szabó (2019), p. 9.
[355] Szabó (2019), p. 9.
[356] Gasseau, G. (2025) 'Bridging the international political economy of water: Social reproduction, governance and non-state actors', *Review of International Political Economy*, 32(3), pp. 871–886.

Yet the term "governance" is often used without its conceptual precision.[357]

In natural sciences, water governance starts from the recognition that the management of water goes beyond technical infrastructure and engineering solutions. From the perspective of political economy, it reflects a move away from hierarchical government towards coordination across different levels and between different actors.

At its core, water governance is about the allocation of decision-making authority. It raises some basic questions: Who decides? Through which procedures? And based on what principles? These questions concern how water resources and services are used, distributed and financed, but also who has the authority to make these decisions.

Such decisions are also inherently economic, as we look at the pricing, investment, cost recovery and different ownership models are therefore not simply technical details of water service provision. They represent political and economic choices, with consequences for how the system operates and who ultimately carries its costs.

The distinction often drawn between "government" and "governance" signals the shift from centralised state authority to a more fragmented one, involving local, national and supranational levels, as well as public and private actors. Decision-making is increasingly divided between local, national and supranational levels, while both public and private actors can have a role in the process. However, governance should not be understood only as an institutional arrangement. It also shows how power is distributed and exercised within the system. As Gasseau argues, water governance is "dynamic rather than static, political rather than technical and contested rather than consensual".[358]

Seen from this perspective, EU water governance cannot be reduced to a collection of directives.[359] Rather, these directives operate within a broader governance system.

3. Problem for the Future Generation and Us

Water scarcity is often presented as a direct consequence of climate change; however, it is deeply shaped by governance choices. Scarcity is not only about how much water exists, but about how water is allocated, protected and priced.[360]

[357] Distefano, T. (2021) *Water resources and economic processes*. London: Routledge.
[358] Gasseau, G. (2024) 'Negotiating the public: Re-municipalization, water politics and social reproduction', *Globalizations*.
[359] Gasseau (2023).
[360] Gasseau (2025).

Decisions regarding infrastructure, abstraction permits, pollution control, tariffs and investment determine who has access to water and under what conditions. In this sense, scarcity is also the outcome of political and economic decisions.[361]

In the debate on privatisation, this point can be even more strongly emphasised, because private participation in water services is often presented as a solution to scarcity. The argument is that market incentives improve efficiency and attract investment, yet critics argue that profit-oriented management may neglect affordability and environmental protection. Whether privatisation works, therefore, depends on the criteria used to evaluate it: efficiency alone, or also equity and sustainability.

In neoclassical economics, scarcity is the basic condition of economic life. Water is scarce in the same way as any other resource, and if a problem arises, they are understood as a problem of allocation. The proposed solution is usually pricing reform: water should reflect its true cost so that users are incentivised to reduce waste.

Institutional economics also accepts scarcity as a starting point, but focuses on coordination, yet the problem is not only price signals, but also weak institutions.

Ecological economics places the emphasis on ecological limits, not just the allocation of water. Pollution, overuse and unsustainable production reduce available resources, and the response should therefore prioritise conservation and environmental protection.

In feminist economics, scarcity is underlined as an effect on social groups, as in many contexts, women bear the primary responsibility for household water management and care work. Reduced access to water increases the workload and vulnerability of women.[362]

Finally, in Marxian political economy, the distribution matters the most, because water may be scarce for certain groups because it is secured or overused by others, creating unequal control.[363]

This does not deny the physical reality of climate change or hydrological stress; rather, it shows that scarcity is not neutral and access to water cannot be understood solely through the lens of physical scarcity of the water. As empirical research[364] shows, inequalities often can start not from the lack of resources, but from administrative inaction and the failure of governance, and how we define the problem shapes the solutions we consider legitimate.

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[361] Gasseau (2025).

[362] Ahmed, S. (2007) 'Getting gender mainstreaming in water right: Perceptions, practices and policies', *International Feminist Journal of Politics*, 9(4), pp. 583–598.

[363] Gasseau (2025).

[364] Cocîiu, C., Rughiniș, C. (2025) 'Living without water: Drought, inequality, and climate silence in a Romanian village', *Sociologie Românească*, 23(2), pp. 145–160, p. 159.

Member States face tensions between cost recovery, affordability and ecological protection, and here this problem becomes relevant. Scarcity, therefore, forces difficult choices for the countries: who pays, who benefits, and who bears the risks.

Water scarcity is thus not only an environmental issue, as it becomes a governance issue, a financing issue, and ultimately a question of social priorities.

4. Some Ideas About Hungarian Water Governance: Centralised or Multi-Level?

In Hungary, formal water governance operates within a multi-level framework. In practice, however, this can be described as a strongly centralised system.[365]

Hydrologically, Hungary is part of the Danube River Basin. For internal planning and operational purposes, the country is divided into four sub-catchments and twelve sub-basins.[366] Since June 2024, overall responsibility for water policy has lain with the Ministry of Energy. The Ministry supervises the General Directorate for Water Management.[367]

Despite the appearance of multi-level governance, operational control remains largely centralised. Twelve Territorial Water Management Directorates carry out water management tasks at the sub-basin level. These bodies function within hydrological units rather than administrative county boundaries, and they are supervised by the central General Directorate. Water permitting powers are exercised by County Government Offices, these are more like deconcentrated state organs rather than autonomous regional authorities.

Consultative Water Management Councils exist at the sub-catchment and sub-basin levels. However, their role is advisory. Decision-making authority remains concentrated at the central level.

Two independent bodies play a relevant oversight role. The Hungarian Energy and Public Utility Regulatory Authority regulates water supply and sanitation services, including tariffs. In addition, the Ombudsman for Future Generations within the Office of the Commissioner for Fundamental Rights monitors environmental and water-related rights. These institutions compose the regulatory and constitutional control, but they do not change the centralised structure of water governance.[368]

Municipalities formally remain responsible for the development and oversight of water supply and sanitation infrastructure. However, the number of service providers has been

[365] OECD (2026) *Water governance for climate resilience in Hungary*. Paris: OECD Publishing, p. 38; OECD (2011) *Water governance in OECD countries: A multi-level approach*. Paris: OECD Publishing.
[366] OECD (2026) *Water governance for climate resilience in Hungary*, p. 38.
[367] OECD (2026) *Water governance for climate resilience in Hungary*, p. 38.
[368] OECD (2026) *Water governance for climate resilience in Hungary*, p. 38.

reduced over the years through centralisation efforts. Currently, 34 state or municipally owned operators provide water and sanitation services.

The Hungarian water governance case presents a formally multi-level but substantively centralised model.

4.1. Ministry of Energy

Since June 2024, the Ministry of Energy (Energiaügyi Minisztérium, EM) has been the lead authority responsible for water management and protection in Hungary.

Under the supervision of the Ministry of Energy, the General Directorate for Water Management[369] (Országos Vízügyi Főigazgatóság, Hereinafter:OVF) operates as Hungary's central budgetary body for water management. The OVF coordinates flood control, water body protection and mitigation of water damage. It oversees hydrographic monitoring, operates integrated data systems and supervises the twelve Territorial Water Management Directorates. It also contributes to the development of their strategic objectives.[370]

The OVF plays a central role in planning and implementing water-related projects and supports the development of national strategies such as the National Water Strategy.[371] It is responsible for coordinating the preparation and submission of River Basin Management Plans under the EU Water Framework Directive.

National Waterworks (Nemzeti Vízművek Zrt.),[372] also under the supervision of the Ministry of Energy, exercises the government's ownership rights over state-owned water supply and sanitation service providers and infrastructure. The 2011 Act on Water Utility Supply and related legislation provided the legal basis for consolidating the water utility sector, reducing the number of service providers from approximately 450 to 34 by 2024. Seventeen of these are majority state-owned, while the remainder are municipally owned.[373] The reforms were justified by the objectives of achieving economies of scale, addressing municipal financial constraints, and enabling central coordination.[374] In practice, governance is defined by the concentration of decision-making power at the central level.

[369] Országos Vízügyi Főigazgatóság, operating within the framework of Hungary (1995) *Act LVII of 1995 on water management*.
[370] OECD (2026) *Water Governance for Climate Resilience in Hungary*, p. 40.
[371] OECD (2026) *Water Governance for Climate Resilience in Hungary*, p. 40.
[372] Hungary (2011) *Act CCIX of 2011 on water utility services*.
[373] Szabó and Garcia Quesada (2017).
[374] Nemzeti Vízművek (2021) 'Tájékoztató a víziközmű-szolgáltatás állam általi átvételének lehetőségéről'.

5. Some Ideas About Water Governance in Romania

Hydrologically, Romania is also part of the Danube River Basin. For water management purposes, the country is organised into eleven river basin districts, corresponding to the main hydrographic basins. The water management sector in Romania is transforming into a regionalised system, a direct response to the fragmented past.[375] This led to the creation of 43 Regional Operators.[376]

Romania's financing structure is built on a governance system that is centralised when it comes to water resources, but in practice it is quite fragmented, across basin administrations, local authorities, and uneven service provision. Water efficiency also remains relatively low, with Eurostat data showing Romania below the EU average.[377]

The allocation of powers is set out in Law No. 107/1996, which treats water use as an exclusive competence of the Government, exercised through the central authority, namely the Ministry of Environment, Water and Forests. The Ministry sets the general policy and aligns it with EU and international requirements.

In practice, the main operational actor is Administrația Națională "Apele Române" (ANAR), a public institution with legal personality that manages the national water infrastructure. The system also includes consultative bodies at the central level and basin committees, which support decision-making and bring in a form of multi-level participation, at least formally.[378]

A key element of this governance system is the permitting and authorisation framework for water-related works. This is managed by ANAR and works as a dual control mechanism: the water management permit (aviz), which applies at the planning stage, and the water management authorisation, which applies at the operational stage. Through this system, the state controls how water is used, coordinates projects within river basins, limits pollution, and connects technical conditions with economic and management considerations.[379]

This governance framework is linked to access and service obligations, as national strategies focus on improving connection rates to drinking water and sewerage and reducing inequalities, especially for vulnerable groups. These developments are also driven by EU law,

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[375] Frone (2019).
[376] ANRSC (2023a).
[377] Government of Romania (no date) *Strategia Națională pentru Gospodărirea Apelor 2023–2035 (draft)*, pp. 14, 19–20; Eurostat (no date) *Population connected to public water supply (% of population)*.
[378] Government of Romania (n.d.) *Strategia Națională pentru Gospodărirea Apelor 2023–2035 (proiect)* [National Water Management Strategy 2023–2035 (Draft)], pp. 14, 19–20; Eurostat (n.d.) *Population Connected to Public Water Supply (% of Population)*.
[379] Government of Romania (n.d.), p. X; Eurostat (n.d.), pp. 20-23.

particularly Directive 2020/2184, which introduces risk-based management and includes access obligations.[380]

From the examination, it is underlined that, while water resources governance is centralised, service governance remains mixed. The Romanian water sector has undergone regionalisation, largely driven by EU funding requirements and this led to the creation of regional operators, but fragmentation persists, with many smaller providers and uneven service quality.

Access to water and sanitation remains uneven, especially between urban and rural areas, and legal obligations to connect have had a limited effect in practice.

The regulator focuses on tariffs, investment planning, and performance monitoring, but outcomes still depend heavily on local capacity and management. Moreover, infrastructure conditions remain weak, with high losses and low efficiency, which directly affect financing needs and long-term sustainability.[381]

Overall, the system shows a gap between formal strategies and practical implementation, where EU-driven objectives are present, but coordination and long-term consistency remain limited.[382]

VI. Financing Water Services

1. The Political Economy of Water Financing

Water service provision occupies a very specific place within the market economy. The sector has high fixed costs connected to the construction and maintenance of water infrastructure, including pipelines and treatment facilities. These can account for as much as 70–80% of the total costs of service provision. This creates high barriers to market entry and limits the possibility of competition, while at the same time making full cost recovery difficult in practice. The costs of water services are also highly specific to the area where the service is provided. Geography, available water sources, the condition of the infrastructure and the number of users can all influence the costs of provision. As a result, costs can be distributed very unevenly between different regions.[383] This also makes the application of uniform tariffs difficult, as the same tariff may have to cover very different costs of service provision.

[380] Romania (2023), Government Ordinance No. 7/2023.
[381] ANRSC (2023), *Raport de analiză a performanței operatorilor de apă și apă uzată din România și a efectelor reglementării economice.*
[382] OECD (2024) *Co-ordination of green policies at the centre of government in Romania*. Paris: OECD Publishing.
[383] Kis and Ungvári (2019).

1.1. Economic Approaches to Water Pricing and Financing

Water financing is often presented as a technical issue. Numbers, tariffs, cost recovery, investment gaps. But in reality, it is more like deciding how to share a well in a village.

- Who draws first?
- Who pays for maintaining the well?
- Who decides how deep it should be?
- And what happens when the water level drops?

The answers to these questions depend not only on hydrology or accounting, but on how we understand the economy itself.

Water is essential to life. It sustains ecosystems, enables agriculture, supports industry and makes everyday social life possible. Yet the way we treat water economically depends on the assumptions we start from. Different schools of economic thought see water in very different ways.[384] And these differences shape how we design pricing systems, financing models and regulatory frameworks.

Let us take water pricing as a simple example.

From a neoclassical perspective, water is treated like any other scarce resource. The main question becomes how to calculate the "right" price based on supply and demand. If water is scarce, the price should rise, but if there is overuse, the price signals should correct behaviour. Water scarcity is a given situation, and the market should allocate the resource accordingly.[385]

From an institutional perspective, the focus shifts. Prices do not simply emerge. They are set by public authorities, regulators and service providers. Institutions determine who has access, how costs are calculated and how revenues are redistributed. Here, the question is less about the "correct" price and more about who has the authority to decide it and under which rules.

More critical approaches move one step further.

Ecological economics asks whether pricing alone can capture the value of water at all. Water is part of a finite ecological system. It cannot always be substituted or reproduced. A purely monetary signal may not reflect long-term environmental limits.

Feminist economics[386] reminds us that water is not only an input in production, but also central to social reproduction, cooking, cleaning, and caregiving. Pricing systems often ignore

[384] Alessi, M. et al. (2013) 'The regulation of water services in the EU', *Intereconomics*, 48(3), pp. 136–158.
[385] Alessi et al. (2013)
[386] Ahmed (2007), pp. 583–598.

the unpaid labour, time and burdens associated with water access, which disproportionately affect women.

A Marxian political economy perspective looks at power.[387] Prices and financing models are not neutral tools. They are shaped by political choices, social struggles and historical transformations. Water becomes scarce for some while remaining accessible for others. Financing arrangements reflect broader patterns of state restructuring and inequality in this regard.

Political economy, more broadly, insists on connecting economics to history, law, institutions and social conflict. Water pricing is never just about efficiency, but about governance, distribution and power.[388]

1.2. Scarcity and finance

Scarcity is often presented as a natural fact, because it is true that climate change, drought and environmental degradation increasingly affect water availability. Even in Europe, where water scarcity has traditionally been perceived as less urgent than in other continents, pressure is growing, and one of the first countries affected will be Romania.[389] But scarcity is not only physical, but it is also institutional.

Water can be scarce because of over-abstraction, weak regulation, pollution, infrastructure failures or unequal access.[390] How we define scarcity influences how we respond to it. If scarcity is treated as a simple market imbalance, the solution becomes pricing. If it is understood as a governance problem, the solution lies in regulation, coordination and long-term planning, next to the pricing.

For the financing of water services, this distinction matters because if pricing is seen purely as a market instrument, tariffs become the primary tool, but if water governance is understood more broadly, financing must also account for environmental limits, social equity and public investment responsibilities.

In this sense, the political economy of water financing raises a fundamental question:

Is water a commodity where the price should adjust to scarcity? Or a public good for which access must be secured even in the face of scarcity?

[387] Alessi (2013), pp. 136–158.
[388] Alessi (2013), pp. 136–158.
[389] European Environment Agency (2021) *Water resources across Europe — confronting water stress*.
[390] Alessi (2013), pp. 136–158.

The way the European Union and its Member States answer this question shapes tariff policies, cost recovery rules, and the distribution of financial burdens across society.

1.3. From Privatisation to Financialization

The integration of water services into the logic of the internal market did not occur through a single legislative act, but through a gradual regulatory shift. As part of the service industries, water services fall within the scope of EU public procurement law, as it governs wide networks. The first public procurement directive was adopted in 1990 and subsequently revised in 2004 and 2014, with the stated aim of promoting competition for public contracts.[391] Although these instruments did not mandate privatisation, they altered the regulatory environment by increasing the likelihood that municipal operators would compete with private parties for the service provision, opening the field.[392] The effect was not direct liberalisation of ownership, but the exposure of public utilities to market-based allocation mechanisms. It was a move to liberalisation, not an open invitation for privatisation.

Similarly, in the Directive 2006/123/EC on services in the internal market (the "Bolkestein Directive"), water was initially within its scope but was ultimately excluded following strong political mobilisation, through civil society pressure and social movements.[393] This exclusion did not entirely remove water from the Internal Market Law. Rather, the regulatory focus shifted from competition within the market to competition for the market, primarily through procurement and concession procedures.[394] Concessions are contractual arrangements in which a private operator is granted the right to manage and exploit a service, where it has the possibility to recover costs directly from users rather than receiving fixed remuneration from the public authority. This model has been particularly relevant in the water sector, notably in the business strategies of large multinational operators.

Privatisation does not refer exclusively to full transfers of ownership, as occurred in England and Wales or Chile.[395] It also includes various forms of private sector participation, such as outsourcing, management contracts and PPPs.[396] But this shift did not come easily, as

[391] Gasseau (2023).
[392] Hall and Lobina (2007).
[393] Szabó (2019), p. 14.
[394] Szabó (2019), p. 14.
[395] Gasseau (2023).
[396] Bakker (2010).

historically speaking, public authorities in Europe were primarily responsible for financing and constructing water infrastructure up until the twentieth century.[397]

The shift to privatisation gained acceptance in the 1970s and 1980s, coinciding with the rise of neoliberal economic policies, which are important to the finance aspect of water services. This brought broader structural changes to the industry, including economic crises, globalisation and the growing influence of financial actors.[398] International financial institutions promoted private sector participation in water services as part of structural reform agendas, further highlighting the shift from the classical public apparatus, as private participation claimed to improve the sector in the long run.[399]

However, empirical evidence does not consistently support the claim that private participation improves efficiency or reduces costs.[400] Moreover, defining efficiency solely in financial terms cuts out the social and environmental functions of water governance.[401] Performance assessments cannot be limited to profitability or cost minimisation; they have to go hand in hand with other social, environmental and governance aspects.

Privatisation has also altered public water management, with the introduction of private-sector operating principles. This includes the adoption of managerial governance structures, performance-based pricing mechanisms and profit-oriented benchmarks. This way, the pricing becomes central, not merely as a tool of environmental governance, but as the primary mechanism for securing operator revenues. The introduction of entrepreneurial logic into public utilities reconfigures the public service delivery under market-oriented governance models. Introducing these aspects can help us understand how our current water service sector financing logic works, and why some aspects reflect more of a private sector operating principle.

More recently, the literature has identified a further development: the financialization of water.[402] Financialization refers to the increasing influence of financial actors, institutions and instruments in developing economic activity. In the water sector, this process affects infrastructure investment, utilities and water rights.[403] It includes the creation of water-focused

[397] Loftus, A., March, H., Purcell, T.F. (2019) 'The political economy of water infrastructure', *WIREs Water*, 6(1), e1326.
[398] Reis, N., Vargas Magaña, G., Vélez Villegas, S. (2024) 'Water, finance and financialisation: A review'.
[399] Reis, Vargas Magaña and Vélez Villegas (2024).
[400] Lobina, E. (2005) 'Problems with private water concessions: A review of experiences and analysis of dynamics', *International Journal of Water Resources Development*, 21(1), pp. 55–87.
[401] Hall and Lobina (2007).
[402] Bayliss, K. (2014) 'The financialization of water', *Review of Radical Political Economics*, 46(3), p. 197; Loftus, A., March, H. (2016) 'Financialising nature?', *Progress in Human Geography*, 40(1), pp. 99–118.
[403] Reis, Magaña and Villegas (2024).

investment funds, structured financial products and exchange-traded funds linked to water-related assets.[404]

The launch of tradable water price futures contracts in the United States in 2020 illustrates this development.[405] What that means is that these contracts allow investors, farmers or companies to buy and sell agreements based on the future price of water, in the same way as with commodities like oil or wheat.

Such instruments build upon existing water trading schemes, integrating them into financial markets. Various forms of financialization, like bonds, securitisation and derivatives, share a common feature: they transform local water revenues into globally tradable financial assets. A review of the literature indicates that these processes may intensify inequalities, particularly where water allocation and pricing mechanisms disproportionately affect vulnerable communities.[406]

EU primary law, however, does not mandate privatisation. Article 106(2) TFEU provides that undertakings entrusted with services of general economic interest (SGEIs) are subject to competition rules only inasmuch as those rules do not obstruct the performance of their assigned tasks.[407] Water services may be designated as SGEIs, allowing Member States to add or negotiate special or exclusive rights and to compensate operators for public service obligations.[408]

Whether this kind of compensation is allowed under State aid rules depends mainly on the criteria set out by the Court in the Altmark judgment,[409] and later clarified through the Commission's SGEI framework. If the four Altmark criteria are satisfied, compensation does not constitute State aid under Article 107(1) TFEU.[410] Where these conditions are not met, compensation may still be declared compatible with the internal market under Article 106(2) TFEU or Article 107(3) TFEU, subject to Commission assessment.[411] The 2005 "Monti–Kroes" package and the 2011 "Almunia" package clarified the conditions under which SGEI

[404] Bayliss (2014), p. 205.
[405] Moore, M. (2024) 'Water trading markets', *Geoforum*, 150, 103977.
[406] Alessi (2013), pp. 136–158.
[407] Court of Justice of the European Union, Case C-320/91 *Corbeau* [1993] ECLI:EU:C:1993:198; Case C-393/92 *Gemeente Almelo* [1994] ECLI:EU:C:1994:171; Case C-157/94 *Commission v Netherlands* [1997] ECLI:EU:C:1997:499.
[408] Alessi (2013), pp. 136–158.
[409] *Altmark Trans GmbH* (Case C-280/00) EU:C:2003:415, paras 87–95.
[410] Consolidated version of the Treaty on the Functioning of the European Union, Art. 107 [2016] OJ C202/47; *Altmark Trans GmbH* (Case C-280/00) EU:C:2003:415, paras 87–95.
[411] Arts. 106 and 107 TFEU [2016] OJ C202/47; European Commission (2012) 'Communication on the application of EU State aid rules to compensation granted for the provision of services of general economic interest' (2012/C 8/02).

compensation is compatible and, in certain cases, without prior notification.[412] So in the end, it is not about whether the State can support water services or not. It can. The question is more about how this support is structured and whether it stays within these limits.

To exemplify in the *Abbanoa case,*[413] the Sardinian integrated water service delves into the application of these principles. Abbanoa, an in-house provider entrusted with managing the integrated water supply service in Sardinia, faced persistent financial deficits due to infrastructure losses, non-payment by users and structural disadvantages linked to geography and demography.[414] Italy notified the Commission of rescue and restructuring aid. The Commission classified the measures as State aid but declared them compatible with the internal market pursuant to Article 107(3)(c) TFEU, because the essential character of the service and the absence of alternative providers were present.[415] In its reasoning, the Commission referred to high distribution losses, ageing infrastructure, substantial investment needs and specific regional disadvantages.[416] Safeguarding the continuity of essential water services is undisputed.

This legal framework confirms two key points.[417] First, EU law does not prohibit public financing of water services, even where such financing constitutes State aid. Second, the assessment does not stop at the economic side, but also considers social and territorial cohesion. Article 14 TFEU recognises the role of SGEIs in promoting social and territorial cohesion, and Article 36 of the Charter of Fundamental Rights requires respect for access to such services.

The move from privatisation to financialization cannot be understood as just deregulation, but as a different governance, a reconfiguration of governance mechanisms. We can observe that procurement rules and concession models increased exposure to market allocation procedures; financialization introduced capital market logics; yet the SGEI framework preserves Member State discretion to guarantee universal and affordable service provision. The core legal issue is not ownership per se, but the allocation of risk, revenue and public responsibility within the constraints of EU competition and State aid law.

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[412] European Commission (2005) 'Community framework for State aid in the form of public service compensation' (2005/C 297/04); European Commission (2012) 'European Union framework for State aid in the form of public service compensation' (2012/C 8/03); European Commission (2012) *Commission Decision 2012/21/EU on the application of Article 106(2) TFEU to State aid in the form of public service compensation*.

[413] European Commission (2014) *SA.38613 (Italy – Abbanoa)*, C(2014) 9559 final, para. 27, p. 5.

[414] Greco, R. (2020) 'The liberalization of water services under EU law and the human right to water', *Eurojus*, Fasc. 2.

[415] Greco (2020).

[416] European Commission (2014) *SA.38613 (Italy – Abbanoa)*, C(2014) 9559 final.

[417] Greco (2020).

2. EU Macroeconomic Governance and Financial Pressure

EU water policy has developed alongside the Union's macroeconomic governance framework. This means that environmental obligations and public budget limits evolved in parallel, and their interaction has had direct consequences for the financing and governance of water services.

Viewing the EU Directives from an economic point of view can also strengthen our understanding in this regard. The Drinking Water Directive,[418] it established minimum quality standards that required investment in infrastructure and treatment systems. It was one of the first EU measures to impose uniform standards with direct financial implications for local operators.[419] The financial impact became clearer with the Urban Waste Water Directive (91/271/EEC), which imposed binding requirements on wastewater collection and treatment. Compliance required substantial capital payment, described as "the largest common infrastructure project undertaken by the EU in its history".[420]

These obligations and their scale transformed financing models in the water sector. The investment burden associated with EU environmental standards changed the economic structure of water governance.[421]

Municipalities frequently lacked the capacity to finance the required infrastructure independently. Moreover, the Maastricht criteria[422] limited how much governments could borrow, reducing their ability to finance infrastructure directly and pushing them toward alternative financing models. Greater reliance on private capital and PPPs was needed, particularly in Central and Eastern European accession states.[423] This influenced water services indirectly by restructuring public finances.

The introduction of fiscal rules in 1992 encouraged the corporatisation of state-owned enterprises, and, parallel to this, increased private sector participation as a means of reducing public debt.[424] So in practice, financing infrastructure started to depend on whether macroeconomic criteria were met. The broader trajectory of EU governance was associated with the commodification of water services.[425]

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[418] Council Directive 80/778/EEC on the quality of water intended for human consumption [1980] OJ L229/11.
[419] Hall and Lobina (2007).
[420] Hall and Lobina (2007).
[421] Szabó (2019), p. 9.
[422] Treaty on European Union (Maastricht Treaty), Protocol on the excessive deficit procedure; Council Regulation (EC) No 1466/97; Council Regulation (EC) No 1467/97.
[423] Hall and Lobina (2007).
[424] Gasseau (2023).
[425] Alessi (2013), pp. 136–158.

This was prominent when the Eurozone crisis hit. In Greece and Portugal, the sale of state-owned enterprises, including water operators, formed part of the conditionalities attached to bailout agreements.[426] Ireland didn't introduce water charges just as a policy choice. To get that help, it had to agree to certain conditions set by the European Commission, European Central Bank, and International Monetary Fund (the "Troika").[427] In Italy, the domestic implementation of the Stability and Growth Pact at the local level constrained municipal budgets, and because of that, the direct management of water services became more difficult, thus turning to corporatisation and private sector participation.[428]

Following the crisis, the New Economic Governance framework was introduced for macroeconomic coordination.[429] Through the European Semester, fiscal and structural policies began to be monitored on a yearly basis.[430] Through Country-Specific Recommendations and country reports, the European Commission assesses national reforms.[431] A review of Semester documents in Germany, Ireland, Italy and Romania identifies a consistent trend toward promoting competition in network industries and pro-market views on environmental principles, including cost recovery.[432] Even where water services are not explicitly mentioned, recommendations concerning market access and competition affect their governance.

Political reactions frequently invoked the human right to water. The 2011 Italian referendum rejected elements of water service privatisation.[433] However, the human right to water does not prohibit privatisation or liberalisation as such; it requires States to ensure availability, quality and affordability, regardless of ownership or management models. Just opposing liberalisation does not automatically secure these objectives. Moreover, market-oriented reforms can still be compatible with human rights obligations, but only if strong universal service obligations are in place and affordability and access are actually protected in practice. This should apply regardless of whether ownership is public or private.

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[426] Bieler and Jordan (2018).
[427] Szabó (2019), p. 14.
[428] Gasseau (2023).
[429] EU economic governance reforms: Six-Pack (2011) and Two-Pack (2013).
[430] European Commission, 'The European Semester' (2011); Regulation (EU) No 1175/2011; Regulation (EU) No 1176/2011.
[431] Erne, R. (2015) 'A supranational regime that nationalizes social conflict: Explaining European trade unions' difficulties in politicizing European economic governance', *Labor History*, 56(3).
[432] Szabó (2019), p. 14.
[433] Referendum abrogativi (Italy), 12–13 June 2011; Arnaudo, L. (2011) 'Holes in the Water: The Reform of Water Services and Competition in Italy', *Competition and Regulation in Network Industries*, p. 173; 36. Bergamini, E. (2013) 'Italy', in Krajewski, M., Neergaard, U. and van de Gronden, J.W. (eds.) The Changing Legal Framework for Services of General Interest in Europe: Between Competition and Solidarity. The Hague: T.M.C. Asser Press, pp. 291–307.

More recently, the Recovery and Resilience Facility made funding conditional on investment and reform programmes, adding a new layer of macroeconomic control.[434] In Italy, debates surrounding the 2021 Competition Law (DDL Concorrenza) show a growing pressure to reorganise public services, move in the direction of competitive tendering and to harmonise regulatory frameworks across sectors.[435] These reforms were criticised as advancing marketisation and reducing local public control. Defenders, however, view this as measures enhancing efficiency and compliance with EU governance expectations.[436]

Analysing these, we can observe that the developments put indirect but measurable financial pressure on water services. Environmental directives tend to increase investment needs, while limits on public finances simultaneously constrain the ability to borrow. Moreover, reform programmes encourage market-based approaches, and EU coordination reinforces competition-driven interpretations of cost recovery. As a result, the financing of water services is shaped as much by the Union's broader economic framework as by sector-specific law.

However, interaction between environmental obligations and macroeconomic discipline creates a structural tension, as water infrastructure requires long-term, capital-intensive investment and stable public support, while fiscal consolidation frameworks prioritise deficit control and debt sustainability. The financing burden is pushed onto tariffs, private capital participation, or corporatised structures. Seen in this light, the debate moves away from ownership and towards governance. What matters is not who owns the system, but how financing is structured, controlled and made accountable.

3. Financing Structure in Hungary

Year	Drinking water pipe length (Km)	Number of apartments connected to drinking water service (Million)
1985	44000	2,9
1990	52419	3,3
2009	65000	4
2010	66000	4,1
2016	66300	4,2
2019	66900	4,246

[434] Regulation (EU) 2021/241 establishing the Recovery and Resilience Facility.
[435] Greco (2020).
[436] Greco (2020).

2023	67900	4,383

Table 4. Drinking Water Infrastructure and Population Coverage in Hungary[437]

Water financing starts with pipes and people. The length of the network determines the costs, while the number of users defines the revenue base, and the gap between the two explains the financial pressure on the system. Moreover, we need the water for the systems to work.

Hungary is often portrayed as a water-rich country, yet this perception does not reflect the whole picture. While total renewable water resources per capita appear relatively high, approximately 94% of surface water originates from abroad, making Hungary the most externally exposed Member State in the European Union.[438] This means that both the quantity and quality of available water depend largely on upstream countries. When only internal renewable freshwater resources are considered, availability falls to around 615 m³ per capita per year, which places Hungary below the commonly recognised threshold of water scarcity.[439]

Climate change adds to this, with rainfall becoming more unpredictable and droughts lasting longer.[440] These structural conditions form the environmental and economic background against which the financing and sustainability of Hungarian water services must be understood.

3.1. MEKH/HEA

The Hungarian Energy and Public Utility Regulatory Authority (HEA) acts as the independent regulator for electricity, gas, district heating, and water services. It licenses operators, monitors compliance with sectoral rules and service standards, collects and publishes data, and has a role in consumer protection.

It also prepares the framework for tariffs. Based on cost reviews, it develops tariff proposals, taking affordability into account, but the final decision is adopted at the government level.

HEA can issue decrees and, where it sees gaps in the system, propose changes to the law through the Ministry of Energy, which may then submit draft legislation to Parliament.

3.2. Revenue Model and Economic Instruments

Hungary's water financing structure is formally based on three principal economic instruments: the water abstraction charge, the agricultural water service charge, and water and wastewater

[437] Author's own table based on the Hungarian Central Statistical Office (2020; 2022; 2023; 2024).
[438] Eurostat (no date) 'SDG 6 – Clean water and sanitation'.
[439] Egyensúly Institute (2025) *Water security: Policy proposals*.
[440] Egyensúly Institute (2025) *Water security: Policy proposals*.

tariffs paid by residential and non-residential users. In practice, however, the system relies predominantly on regulated tariffs and EU funding, while direct public budget contributions and private capital participation do not add significantly to the pot. Water and wastewater tariffs account for approximately half of sector financing, and EU funds represent roughly 40%.[441] National budget participation exists, but private investment has almost no role. This results in a dual dependency, where operational sustainability is based on tariffs, while capital investment depends largely on EU funding.

Hungary faces an estimated annual investment gap in the water sector of around EUR 600 million, while total annual water-related investment needs reach approximately EUR 1.3 billion.[442] After accession, and particularly following the adoption of the 2011 Act on Water Utilities, the Hungarian water service sector went through a strong process of centralisation.[443] The number of operators was reduced from more than 400 to only 34 by 2025. Half of these operators are now majority state-owned, while the others remain under municipal ownership.[444] At the same time, 16 of the 34 operators have already become part of the National Waterworks group, showing the increasing role of the state not only as regulator, but also directly in service provision.[445] Although municipalities formally remain responsible for providing water services within their territories, their actual operational and financial role has become more limited as the system moved towards stronger central coordination.

Ownership of water utility assets remains restricted to municipalities and the state, while further private equity participation has effectively been excluded since 2007.[446] Different forms of operation are possible, through lease-operation contracts, asset management agreements and, in certain cases, concessions. However, private capital does not function as an important structural source of financing for the sector. The centralisation process was partly driven by the need for economies of scale, stronger coordination and the limited financial capacity of municipalities.[447] At the same time, bringing an increasing part of the sector under state control also means that financial responsibilities and risks are increasingly transferred towards the national level. The introduction of nationally standardised non-residential tariffs in 2024

[441] European Commission (2021), *Economic data related to the implementation of the WFD*.
[442] European Commission (2025), *Environmental Implementation Review – Hungary*.
[443] Hungary (2024) *Decree on non-residential tariffs*.
[444] OECD (2026), *Water Governance for Climate Resilience in Hungary*, OECD Publishing, Paris.
[445] National Waterworks (2021).
[446] Szabó and Garcia Quesada (2017).
[447] Szabó and Garcia Quesada (2017).

represents another step in the same direction, further limiting the role of locally determined pricing.[448]

The water abstraction charge is intended to finance water resource management and encourage sustainable use, and combines fixed and variable components, making a distinction by source and type of water. Although certain rates were increased in 2024,[449] The charge has historically remained low and has not functioned as an effective demand-management tool. Revenues remain low compared to investment needs.[450]

Agricultural exemptions substantially weaken its regulatory impact. Irrigation users are exempt below thresholds that are well above average usage, and since 2017, repeated declarations of "permanent water scarcity" have, in most years, suspended both abstraction and agricultural service charges.[451] These exemptions remove pricing signals exactly when water systems are under the greatest pressure, undermining both cost recovery and the efficient use of water. A 2025 amendment now allows for geographically targeted exemptions rather than nationwide suspension, but the fundamental structure remains weak.[452]

Residential and non-residential users mainly finance the system through tariffs made up of a fixed basic fee and a volumetric component. In the past, there was significant variation between utilities, especially for non-residential users, with large differences between minimum and maximum tariffs.[453] The 2024 reform introduced standardised consumption-based tariffs for industrial users, reducing differences between utilities but strengthening centralised price-setting. Despite these adjustments, Hungarian water tariffs remain among the lowest in Europe.[454] While this fixes the short-term affordability pressures, it constrains revenue generation and limits the sector's capacity to finance asset renewal internally, questioning the sustainability and resilience of the sector.

Environmental load charges apply to pollutant discharges into surface waters, yet rates have not been updated since 2009.[455] Like abstraction charges, their contribution to revenues and environmental cost recovery remains low.

The result is a fragile balance of affordability maintained through low tariffs and exemptions, while long-term sustainability relies on external funding and delayed financial

[448] OECD (2026), *Water Governance for Climate Resilience in Hungary*, OECD Publishing, Paris; Hungary (2024), *Decree on non-residential tariffs*.
[449] Green Support (2025), 'Change in the water resource contribution'.
[450] State Audit Office (2024) *Monitoring of measures taken to implement the National Water Strategy*.
[451] OVF (2023) *Mezőgazdasági vízszolgáltatás.*
[452] OECD (2026) *Water Governance for Climate Resilience in Hungary*, p. 9.
[453] State Audit Office (2024) *Monitoring of measures taken to implement the National Water Strategy*.
[454] OECD (2026) *Water Governance for Climate Resilience in Hungary*, p. 9.
[455] OVF (2022) *Magyarország 2021. évi vízgyűjtő-gazdálkodási terve.*

adjustments. This raises basic questions about cost recovery, resilience, and whether the current revenue model can withstand increasing climate pressures and limited public finances.

3.3. Affordability and Cost Recovery

Water affordability continues to be an important issue in Hungary. In 2021, Hungary had the second-highest affordability ratio among 23 EU Member States, with households spending on average more than 4.2% of their net income on water supply.[456] This is interesting because Hungary does not have particularly high water tariffs. In fact, average household expenditure on water remains below the average of the EU countries included in the study. The high affordability burden is therefore more closely connected to lower household incomes. There are also strong differences within the country. In some regions the burden is relatively small, while in others expenditure on water can reach around 9% of net household income. The issue also goes beyond only the poorest households. More than half of the households falling within the bottom six income thresholds spend at least 3% of their net income on water services, which is often considered an affordability threshold.[457]

Hungary has tried to address the affordability of utilities mainly through strong price regulation. The "rezsicsökkentés" policy, introduced in 2013, froze water tariffs at their January 2013 level, and residential tariffs have remained unchanged since then.[458] The policy was introduced to keep utility costs affordable for households. However, freezing prices for such a long period also affected the financial situation of water utilities. While the average cost recovery of operation and maintenance was around 99% in 2009, by 2018 it had fallen to approximately 79–82%.[459] This already showed a growing difference between the costs of providing the service and the revenues available to cover them.

This problem became more visible when energy and labour costs increased considerably, especially during 2022 and 2023.[460] Utilities had to face higher operational costs, while their possibilities to increase revenues remained limited. At the same time, their 15-year investment plans already indicated considerable maintenance, reconstruction and investment needs. Even with these growing financial pressures, the proposed increases in tariffs were not implemented.[461] The State Audit Office also connected the worsening financial situation of

[456] Martins, R. et al. (2023) 'Water affordability across and within European countries: A microdata analysis', *Utilities Policy*, 83, 101609.
[457] OECD (2026) *Water Governance for Climate Resilience in Hungary*, p. 28.
[458] World Bank (2015) *Water and Wastewater Services in the Danube Region: Hungary Country Note*.
[459] OVF (2022) *Magyarország 2021. évi vízgyűjtő-gazdálkodási terve.*
[460] OECD (2026) *Water Governance for Climate Resilience in Hungary*, p. 28.
[461] State Audit Office (2024) *Monitoring of measures taken to implement the National Water Strategy.*

utilities with increasing technical losses. Around one quarter of the water abstracted for public supply becomes non-revenue water, creating an estimated annual loss of more than HUF 17 billion, approximately EUR 44 million.[462] This is particularly problematic in a sector where financial resources for infrastructure renewal are already limited.

Some changes were introduced for non-residential consumers. In 2023, the long period of frozen tariffs started to come to an end, followed by the introduction of nationally uniform non-residential water and wastewater tariffs from January 2024.[463] This increased the revenues available to utilities, although it is still difficult to determine whether these tariffs are enough to reflect the actual costs of service provision and the investment needs of the sector. The reform was also accompanied by limited communication and explanation, which affected its acceptance among non-residential consumers. Residential tariffs, on the other hand, have remained unchanged since 2013. This continues to protect households from increasing water prices, but it also means that the growing costs of providing the service cannot be fully reflected in residential tariffs.[464]

This creates a difficult balance between affordability and the financial sustainability of water services. Keeping tariffs low has an important social purpose, especially considering the affordability problems already present in Hungary. At the same time, tariffs that remain below the actual costs of service provision cannot provide sufficient revenues for operation, maintenance and future investments. They also provide only limited incentives for consumers to reduce water use. With combined water and wastewater tariffs below EUR 1 per cubic metre, Hungary has some of the lowest tariff levels in Europe. The State Audit Office also concluded that the tariff structure applied between 2017 and 2022 did not sufficiently encourage efficient and sustainable water consumption.[465]

Other economic instruments do not fully compensate for these weaknesses. The water abstraction charge should, in principle, contribute to the financing of water resource management while also influencing the amount of water abstracted. In practice, however, the rates have not been regularly adjusted to reflect water scarcity, and several exemptions further reduce their effect. As a consequence, neither tariffs nor abstraction charges currently work

[462] State Audit Office (2024) *Monitoring of measures taken to implement the National Water Strategy.*
[463] OVF (2022) *Magyarország 2021. évi vízgyűjtő-gazdálkodási terve*.;OECD (2026) Water Governance for Climate Resilience in Hungary, OECD Publishing, Paris.
[464] Hungary, 25/2023 (XII. 13.) EM Decree on the determination of water utility service fees for non-residential users (*25/2023. (XII. 13.) EM rendelet a nem lakossági felhasználók víziközmű-szolgáltatási díjának megállapításáról*), Section 1(1) and Section 3; OECD (2026) *Water Governance for Climate Resilience in Hungary*, p. 28.
[465] OECD (2026) *Water Governance for Climate Resilience in Hungary*, p. 28.

strongly as instruments for managing water demand. Hungary therefore faces a difficult financing situation. Water prices are kept low partly for social and affordability reasons, while at the same time the sector needs more financial resources for maintenance, reconstruction and future investments. In the longer term, keeping these two objectives together becomes increasingly difficult.

Hungary's affordability challenge, on the one hand, justifies greater social sensitivity in tariff design, given low income levels. Moreover, keeping tariffs low for so long has placed financial pressure on utilities, reduced cost recovery, and delayed infrastructure maintenance. The policy choice has favoured visible short-term affordability over long-term system sustainability.

The current model risks creating affordability pressures in a more indirect way, through declining service quality, rising losses, and the need for sudden tariff increases later on.

3.4. Financing Structure of Water Services in Hungary: Revenue Model

As we concluded in Hungary, we find a formally developed but internally inconsistent approach to cost recovery. While the legal and economic instruments required under the EU framework are in place, their combined operation does not result in a coherent or self-sustaining system.

The system can be understood through three main financing pillars: tariffs, state funding and external transfers, the 3Ts: tariffs, taxes (public financing), and transfers (EU funding). These instruments are designed to operate together to achieve cost recovery, investment and affordability. In practice, however, they function in parallel rather than as part of a unified financial logic.

Tariffs remain structurally constrained and do not function as a full cost-recovery instrument. Pricing policy has been shaped by strong affordability considerations, particularly for low-income households, which limits utilities' capacity to generate sufficient revenue for maintenance and long-term asset renewal.[466]

As a result of this, tariffs operate less as an economic tool and more as a mechanism of social protection. This weakens their role under Article 9 WFD, where pricing is intended not only to recover costs but also to promote efficiency and sustainability.[467]

[466] OECD (2026) *Water Governance for Climate Resilience in Hungary*, p. 28.
[467] OECD (2024) *Co-ordination of Green Policies at the Centre of Government in Romania.*

Public financing should pay a compensatory role within the system. Here, state involvement is high, where tariff revenues are insufficient, as it chooses to prioritise affordability over financial autonomy.[468]

However, this support does not address the structural underfunding. Public budgets contribute to stability but are not designed to ensure long-term investment coverage.

Over the years, EU transfers constituted a central pillar of the Hungarian water financing model. Investment in water infrastructure, including water quality improvements and environmental compliance, has been largely supported through EU funds and co-financed national programmes. With the introduction of the centralised model, these have slowed down.

3.5. Infrastructure Gap and Compliance Costs

Although Hungary is crossed by major rivers such as the Danube and the Tisza, around 96% of its freshwater originates outside its borders. This places it among the EU Member States with the lowest levels of internal renewable water resources per capita.[469] Moreover, droughts have occurred in 23 of the last 30 years, and climate-related economic losses between 2000 and 2023 reached EUR 6.5 billion.[470]

Infrastructure performance indicators reveal persistent weaknesses. Water losses from leakage declined from 25.5% in 2017 to 22.9% in 2022, yet nearly one-quarter of abstracted water is still lost within the network, with some regions experiencing losses of up to 30%.[471] Wastewater treatment performance has improved significantly over the past decade, particularly in tertiary treatment, but compliance gaps remain. In 2020, only 59% of urban wastewater met the requirements of the Urban Waste Water Treatment Directive, placing Hungary among the least compliant Member States. In December 2023, the Court of Justice of the European Union condemned Hungary for non-compliance with Directive 91/271/EEC.[472]

Underinvestment is a major stress point. Hungary invests approximately EUR 14 per capita annually in wastewater infrastructure renewal and development, well below the EU average of EUR 49 per capita.[473] The infrastructure gap is therefore both a financial and regulatory issue. Funding mechanisms exist but tend to be reactive. Recent policy responses have focused largely on technical supply-side measures. In 2025, the government allocated HUF 4.7 billion

[468] OECD (2024) *Co-ordination of Green Policies at the Centre of Government in Romania.*
[469] OECD (2026) *Water Governance for Climate Resilience in Hungary*, p. 9.
[470]OECD (2013).
[471] State Audit Office (2024) *Monitoring of measures taken to implement the National Water Strategy*.
[472] OECD (2026) *Water Governance for Climate Resilience in Hungary*, p. 9.
[473] Water Europe (2025) 'WISE freshwater information system for Europe: Hungary'.

for immediate retention-related interventions to increase storage capacity.[474] By contrast, demand-side management through economic instruments is still limited.

Hungary's infrastructure gap is therefore not merely technical. It reflects a structural financing imbalance.

The water governance and financing model is institutionally fragmented, economically weak in its incentive structure, and insufficiently prepared for climate stress.

First, there is a clear need to stabilise the institutional framework and strengthen coordination across ministries.[475] Without stable governance, long-term investment planning and compliance remain fragile.

Second, the system requires stronger economic and regulatory instruments to manage water demand.[476] This includes revisiting abstraction charges in light of cost recovery requirements under the Water Framework Directive. As it stands, charges remain too low, exemptions too broad, and price signals too weak to influence behaviour or ensure financial sustainability.

Third, a long-term water security strategy is needed, one that integrates climate adaptation with agriculture, energy and land-use policy.[477] Current planning is fragmented and closely tied to funding cycles rather than strategic priorities.

Finally, governance must operate more effectively across levels, as strengthening regional water authorities' capacity, providing targeted financial support to municipalities, and clarifying subnational responsibilities are necessary steps.[478] Centralisation alone is not sufficient to address regional disparities in water risk or infrastructure needs.

The current system puts too much emphasis on affordability, creating a structurally vulnerable system in the long term. This tension between social protection and financial sustainability will be central to the comparison of the Romanian model of water service financing.

4. Financing Structure in Romania

In Romania, one of the main difficulties comes from the uneven distribution of available water resources. A large part of the water supply depends on internal rivers. The Danube provides an important volume of water, but because it runs mainly along the southern border of the country,

[474] OECD (2026) *Water Governance for Climate Resilience in Hungary*, p. 9.
[475] OECD (2026) *Water Governance for Climate Resilience in Hungary*, p.10–11.
[476] OECD (2026) *Water Governance for Climate Resilience in Hungary*, p.10–11.
[477] OECD (2026) *Water Governance for Climate Resilience in Hungary*, p.10–11.
[478] OECD (2026) *Water Governance for Climate Resilience in Hungary*, p. 11.

its possibilities for supplying other parts of Romania are limited. This geographical situation, together with the variability of available resources, has historically pushed Romania towards infrastructure-based solutions rather than towards managing demand.

Another problem is the relatively low efficiency of water use. According to figures included in the National Water Management Strategy, Romania generates around EUR 26 of economic output for every cubic metre of raw water abstracted, placing it below many other EU Member States in terms of water-use efficiency.[479] This becomes increasingly relevant when considering the uneven territorial distribution of resources and the growing pressures connected to climate change.

The institutional system is based primarily on Water Law no. 107/1996, as the overall responsibility for water management belongs to the Government and is exercised through the Ministry of Environment, Water and Forests. The Ministry establishes the main policy directions and coordinates their implementation, while much of the actual water management is carried out through the National Administration "Romanian Waters" (ANAR) and the river basin administrations.[480] This creates a system where the main policy decisions remain centralised, while the practical management of water resources is organised mainly according to river basins.

The regulatory system is closely connected to its financing. ANAR and its territorial structures manage the permitting and authorisation system through which water use, works affecting water resources and discharges are regulated.[481] These instruments establish who can use water, under what conditions and within which technical limits. However, their role is not only regulatory. Water use is also connected to contributions, payments and penalties, which provide revenues for the management of the sector. In this way, the same system that regulates access to water resources also provides an important part of the financing needed for their management.

The Romanian "economic mechanism" is built around contributions for the use of water resources, together with specific payments and penalties.[482] These revenues contribute to the financing of ANAR and to the functioning of the national water management system. The mechanism is based on cost recovery for water management services and follows principles

[479] Government of Romania (2023) *Strategia Națională pentru Gospodărirea Apelor – România 2023–2035 (Draft No. 6)*, p. 14.
[480] ANRSC (2023), *Raport de analiză a performanței operatorilor de apă și apă uzată din România și a efectelor reglementării economice*.
[481] Government of Romania (2023) *Strategia Națională pentru Gospodărirea Apelor*, pp. 20–22.
[482] ANRSC (2023), *Raport de analiză a performanței operatorilor de apă și apă uzată din România și a efectelor reglementării economice.*

such as the user pays, the polluter pays and equal access to water resources.[483] The revenues are expected to support important public functions, including the operation of the National Water Management System, monitoring activities and hydrological management. Therefore, financing is not separate from water governance. Without sufficient and stable revenues, both the infrastructure and the institutions responsible for managing water resources become more difficult to maintain.[484]

At the same time, what this mechanism is expected to finance is quite broad. Responsibilities arising from international agreements and EU legislation also have to be covered through ANAR's budget, while additional resources can be provided from the state budget through specific programmes when necessary.[485] The system therefore relies considerably on revenues generated within the water sector for its everyday functioning and part of its investment needs. However, these revenues are not always sufficient for larger investments or for fulfilling all EU and international obligations. In such cases, additional support from the national budget remains necessary.[486] Romania therefore operates with a mixed financing structure, where the sector is expected to generate an important part of its own resources, but the state continues to have an important financial role when these resources are not enough.

However, the current economic mechanism still needs reform. The existing revenue structure does not fully correspond to the actual costs of maintaining and developing the system. A similar problem could already be seen in the Hungarian example, although the institutional and financing structures of the two countries are different. In both cases, the costs of maintaining and renewing infrastructure continue to increase, while the revenues available within the sector do not necessarily follow the same direction.

Because of this, the Romanian system also relies considerably on external sources of financing. European funding has an important role, including the European Structural and Investment Funds and, more recently, the Recovery and Resilience Facility established under Regulation (EU) 2021/241. However, the existence of available funding does not automatically mean that it can be fully or efficiently used. Administrative capacity, project preparation and implementation can still limit the absorption of these resources.[487] Domestic public funding

[483] OECD (2024) *Co-ordination of green policies at the centre of government in Romania*. Paris: OECD Publishing.
[484] Government of Romania (2023) *Strategia Națională pentru Gospodărirea Apelor*, pp. 22–23.
[485] ANRSC (2023), *Raport de analiză a performanței operatorilor de apă și apă uzată din România și a efectelor reglementării economice.*
[486] Government of Romania (2023) *Strategia Națională pentru Gospodărirea Apelor*, pp. 22–23.
[487] Government of Romania (2023) *Strategia Națională pentru Gospodărirea Apelor*, p. 70–71.

therefore remains necessary, although in many cases it functions more as a complement to European and other external funds rather than as the main source of investment financing.

Looking at how water services are financed under the current legislation, several elements can be identified. There is a combination of public and private financing possibilities, but the everyday operational costs of water services are mainly covered by users through tariffs. Therefore, despite the more complex financing structure around investments, the basic functioning of the service still depends strongly on revenues collected from users.

Where public financial resources are involved, tariff strategies become particularly important. Under Law No. 241/2006, access to resources from the state budget or to non-reimbursable funds is connected to the preparation of a tariff strategy based on a cost-benefit analysis.[488] This strategy is generally prepared by the administrative-territorial unit or the inter-community development association for a period of at least five years and can be updated when necessary. On paper, this provides a relatively stable framework for longer-term financial planning. In practice, however, its implementation can still depend on changing financial conditions, available funding and political priorities.

If resilience is taken seriously, such planning should also go beyond the calculation of costs and expected revenues. The legislation already provides some space for considering the longer-term development and sustainability of the service.[489] Still, environmental and climate resilience should become a more visible part of investment decisions. Infrastructure should not only be financially efficient at the moment when it is constructed, but should also be capable of responding to extreme weather events, changing water availability and other future pressures. Otherwise, investment planning risks responding mainly to present needs, rather than preparing the system for future ones.

The tariff structure itself also has to fulfil more than one objective. On the one hand, prices should discourage excessive consumption and contribute to a more efficient use of water resources. On the other hand, tariffs need to generate sufficient revenues for the operation and further development of the infrastructure.[490] These two objectives do not always work easily together. Increasing tariffs can strengthen cost recovery and encourage lower consumption, but it can also create affordability problems. Keeping them too low, however, can weaken investment capacity. The tariff system therefore has to find a balance between resource conservation, affordability and the financial needs of the service.

[488] Romania (2006) *Law No. 241/2006*, §35(2).
[489] Romania (2006) *Law No. 241/2006*, §35(6), point d–e.
[490] Romania (2006) *Law No. 241/2006*, point c.

The regulatory authority has an important role within this system. It approves tariffs, verifies compliance with the applicable rules and applies the methodologies used for calculating prices.[491] This creates another level of control over the financial decisions of operators. At times, this can also make the system more rigid, but regulatory oversight remains important for ensuring that tariff decisions are not based only on the interests of individual operators. In the longer term, this control is also connected to maintaining financial stability and continuity of the service.

Romania's financing model can therefore be understood as a combination of European funding, national and local public resources, user tariffs, and the broader economic mechanism based on contributions, payments and penalties.[492] None of these sources alone is sufficient to cover all the needs of the sector. This makes coordination between them particularly important, especially as infrastructure ages and climate-related pressures increase.

At the same time, financial sustainability cannot be separated from affordability and access. Vulnerable and marginalised groups can still face difficulties in accessing water and sanitation services.[493] These issues should not be treated separately from infrastructure financing. Investments create not only construction costs, but also continuous costs for operation, maintenance and eventual renewal. Building infrastructure is therefore only one part of the problem. The longer-term question is whether the system can finance its operation while keeping the service accessible and affordable for those who depend on it.

4.1. Efficiency

On paper, Romania has a wide range of funding sources and strategies, from tariff regulation and sectoral rules to EU cohesion funds, recovery financing and climate policies. In practice, however, the data show ongoing inefficiencies, fragmentation, and financial vulnerability throughout different levels of governance and types of operators. This is crucial to prove our hypothesis.

On Table 4. We can observe that non-revenue water remains high, especially among regional operators. A large share of water is abstracted and treated but does not generate revenue, even though the costs remain. These costs must then be absorbed through tariffs or covered by public support. This creates a cycle: losses increase unit costs, higher costs push tariffs up, and higher tariffs worsen affordability problems, particularly in rural and low-income

[491] Romania (2006) *Law No. 241/2006*, §35(7).
[492] Government of Romania (2023) *Strategia Națională pentru Gospodărirea Apelor,* pp. 70–71.
[493] Government of Romania (2023) *Strategia Națională pentru Gospodărirea Apelor,* p. 50–51.

areas. The fact that these losses persist suggests that regulatory goals have not translated into operational changes. From a financial perspective, this weakens operators' position and limits their ability to co-finance EU projects.

Overall, the picture is a bit paradoxical. Romania is formally aligned with EU cost recovery principles and has access to significant EU funding, but the system still depends heavily on external financing and struggles with fragmented governance. A reform is needed to bring the system closer to something that is financially sustainable, socially acceptable, and able to deal with long-term pressures, including climate change.

Indicator	Total	Regional Operators	Apa Nova Bucharest	Other Municipal Operators	Town Operators	Commune Operators
Total volume of water purchased (raw water, imported water, etc.)	1.318	0.963	0.175	0.043	0.026	0.111
Billed water	0.810	0.479	0.135	0.022	0.023	0.150
Technological consumption	0.076	0.067	0.002	0.004	0.001	0.003
Losses in transport and distribution	0.432	0.417	0.037	0.018	0.002	(0.042)
Technological consumption (%)	5.8%	6.9%	1.0%	8.2%	4.1%	2.3%
Transport and distribution losses (%)	32.8%	43.3%	21.4%	41.4%	9.2%	n/a

Table 5. Efficiency of Water Resource Use (billion m³)[494]

4.2. EU–EBRD Blended Financing Model

There is an EU–European Bank for Reconstruction and Development (Hereinafter: EBRD)[495] Blended financing model in Romania for water sector financing. This, however, has implications beyond finance, as it has the power to shape how the sector is organised and governed. A recent example is the €14 million EBRD loan to SC Apa Prod SA in Hunedoara County, co-financing a €230 million investment programme alongside EU grants under the Sustainable Development Operational Programme.[496] The project will rehabilitate and expand water and wastewater infrastructure in line with EU standards, benefiting approximately 170,000 residents in 33 localities. This intervention is part of a broader pattern: the EBRD has

[494] Autoritatea Națională de Reglementare pentru Serviciile Comunitare de Utilități Publice (ANRSC), *Raport de analiză a performanței operatorilor de apă și apă uzată din România și a efectelor reglementării economice* (July 2023) https://www.anrsc.ro/wp-content/uploads/2023/08/Raport_ANRSC_Final.pdf accessed (24 February 2026).
[495] European Bank for Reconstruction and Development (EBRD) (2025) 'EBRD finances modern water and wastewater infrastructure in Romania'.
[496] EBRD (2025), 'EBRD finances modern water and wastewater infrastructure in Romania'.

financed 25 Romanian water operators with over €600 million in loans, and pumped more than €5 billion in EU funding to the sector.[497]

The need for external financing comes from the long-term decline of the sector. In the early 1990s, Romania's water services were highly fragmented, with more than 800 local operators, mostly organised at the municipal level.[498]

At that time, less than half of the population had access to piped water, metering was limited, services were often irregular, infrastructure was already deteriorating, and wastewater treatment was minimal. Investment during the transition period was very limited and mainly focused on larger cities, while smaller systems continued to decline.

Pre-accession EU programmes such as MUDP, ISPA and SAMTID started to improve the situation, but between 1990 and 2007, only 32 major municipalities received significant funding. Most systems, therefore, remained underfinanced, poorly maintained, and not financially sustainable.[499]

Accession to the EU funds under the Sectoral Operational Programme Environment meant that the Romanian water service system needed to be reorganised.

The fragmentation needed to be fixed, and a new funding mechanism needed to be implemented to manage the EU funds, creating a more sustainable water sector.[500]
This way, more than 2,600 localities needed to consolidate into around 40 strong regional public operators.[501] Tariffs were regulated by ANRSC, performance targets were contractualized, and utilities were commercialised while remaining publicly owned.

To access EU grants and co-finance projects with EBRD loans, Romania's financial governance needed to change. Operators, therefore, became recipients of public grants and borrowers subject to bank discipline simultaneously. The scheme was simple: EU grants reduce capital burden, EBRD loans introduce financial discipline, and regulated tariffs provide revenue stability.

However, regionalisation is still incomplete, as effective delegation rates in rural areas have remained much lower. Some municipalities withdrew because of dissatisfaction with

[497] EBRD (2025), 'EBRD finances modern water and wastewater infrastructure in Romania'.
[498] World Bank (2018) *Romania water diagnostic report: Moving toward EU compliance, inclusion, and water security*. Washington, DC: World Bank.
[499] World Bank (2018) *Romania water diagnostic report: Moving toward EU compliance, inclusion, and water security*. Washington, DC: World Bank.
[500] World Bank (2018) *Romania water diagnostic report: Moving toward EU compliance, inclusion, and water security*. Washington, DC: World Bank.
[501] World Bank (2018) *Romania water diagnostic report: Moving toward EU compliance, inclusion, and water security*. Washington, DC: World Bank.

perceived tariff increases or the lack of visible investment. Others preferred to keep local control, or were simply not pushed enough to comply with national and EU standards. In some cases, services continue to operate without an ANRSC license, which weakens regulatory coherence.

This incomplete regionalisation creates asymmetries within the blended financing model. Operators inside the regional framework gain access to large-scale EU funds and international loans, while those outside remain structurally underinvested.

Also, EU grants reduce upfront capital costs, while EBRD loans introduce long-term repayment obligations.[502]

Furthermore, blending can subtly shift policy priorities. Projects must meet bankability requirements, comply with procurement rules, and meet EU standards. As a result, the order of investments is partly driven by financial considerations rather than solely by environmental or social priorities.

At the macro level, the EU–EBRD model allows Romania to accelerate infrastructure modernisation.[503] Yet water services remain essential public services, and in cases of operator distress, the state would likely still step in.

4.3. Tariff Increases and Financial Sustainability

In the case of SC Apa Prod SA, we can observe that tariff policy has become the backbone of financial sustainability in the water sector.[504] Alongside a €230 million investment programme co-financed by EU funds and EBRD loans, the company introduced significant real-term tariff increases, combined with inflation adjustments and operational reforms.[505] Since becoming an EBRD client in 2014, it has invested more than €140 million in water and wastewater infrastructure. The idea is simple: if they invest in infrastructure, reduce losses, and expand networks, they need revenues that can pay back the debt and cover the full costs over time.[506]
We can see a clear shift after the regionalisation. By the mid-2010s, water and wastewater services were delivered by 43 large regional public operators, 2 large private operators in mixed-ownership companies, and around 900 smaller local operators.[507] More than two-thirds of the population connected to piped water, approximately 9 million people, are now served by

[502] EBRD (2025), 'EBRD finances modern water and wastewater infrastructure in Romania'.
[503] EBRD (2025), 'EBRD finances modern water and wastewater infrastructure in Romania'.
[504] EBRD (2025), 'EBRD finances modern water and wastewater infrastructure in Romania'.
[505] EBRD (2025), 'EBRD finances modern water and wastewater infrastructure in Romania'.
[506] EBRD (2025), 'EBRD finances modern water and wastewater infrastructure in Romania'.
[507] World Bank (2018) *Romania water diagnostic report: Moving toward EU compliance, inclusion, and water security*.

regional operating companies.[508] However, the revenue base for operators is smaller than the total population would suggest, which makes tariff design even more important.

Regional operators vary significantly in size and financial strength. Most serve between 100,000 and 300,000 users, while larger entities such as Raja Constanța and the Cluj operator reach 600,000 to 750,000 people.[509] Expansion helped achieve economies of scale, but it also brought new financial pressures. Taking over staff from municipal departments made regionalisation easier to accept at first, but it later led to overstaffing and the need for restructuring, including workforce cuts of around 25 per cent. This shows a key point of the model: tariff increases and performance improvements need to go together with cost control.

The tariff question becomes more complicated when we have a diversity of service models, as in Romania. Bucharest, serving around 1.9 million people, operates under a public-private partnership with Apa Nova București, controlled predominantly by Veolia.[510] Investments financed directly by the private operator are reflected in tariffs, while those financed by the municipality with EU grants and European Investment Bank(Hereinafter:EIB) and EBRD loans are recovered through a separate volumetric wastewater charge. This financing setup splits how investments are paid back within the tariff. In practice, part of the cost is built directly into household bills over time. A similar concession model is used in Ploiești.

At the other end of the spectrum, hundreds of small municipal operators and legacy private concessions(Bucharest and Ploiești) continue to operate, many with limited capacity and weak cost recovery mechanisms. Most of these operators started in the 1990s when no substantial public investment programmes were available.[511] Over time, as EU funding became conditional on joining a regional operator and delegating services, many of these smaller entities lost access to capital and gradually declined. Some concession contracts were terminated as the regional model emerged. Yet fragmented providers lead to national tariff coherence.

Tariff increases are therefore not just a financial adjustment, but a structural tool, as they are needed to fund the blended financing, cover day-to-day costs, and fund the renewal of infrastructure. But they operate in a politically sensitive context. Around one-third of the

[508] World Bank (2018) *Romania water diagnostic report: Moving toward EU compliance, inclusion, and water security*.
[509] World Bank (2018) *Romania water diagnostic report: Moving toward EU compliance, inclusion, and water security*.
[510] World Bank (2018) *Romania water diagnostic report: Moving toward EU compliance, inclusion, and water security*.
[511] World Bank (2018) *Romania water diagnostic report: Moving toward EU compliance, inclusion, and water security*.

population still relies on private wells, and sewerage coverage remains limited.[512] In rural areas, resistance to joining regional operators is often linked to fears of higher tariffs. If prices rise without visible improvements in service quality, public acceptance weakens, slowing consolidation and affecting financial stability.

Financial sustainability, therefore, needs to be balanced so that operators have sufficient revenue to cover costs and repay debt, while regulators must keep tariffs affordable and protect vulnerable users. Without clear operational improvements, tariff increases risk being seen as simply extracting more money, rather than improving the system, which can lead to user unacceptance.

4.4. Transfers-External funding

The financing of the Romanian water sector has been closely connected to the country's transition towards EU membership and, later, to meeting EU requirements. In this sense, financing was never only about extending pipelines or constructing new treatment and sewerage infrastructure. It was also part of a much broader process of catching up with European standards, and because of that, large amounts of external funding have been directed towards the sector throughout this period. Still, the expected convergence has been slow, as Romania continues to have some of the lowest connection rates in the EU for piped drinking water and sewerage, despite the financial resources invested over the years. This shows that access to funding alone has not been enough to close the infrastructure and service gap.[513]

EU convergence funding is usually justified by compliance targets and measurable results, but the remaining access gap lies precisely where implementation is hardest. In low-density areas, with high connection costs, weak local capacity, and households that often hesitate to connect because they cannot afford both the upfront fee and the monthly bill.

The expansion of networks from 2008 confirms that EU-driven investments have moved the needle, but not fast enough for convergence claims to feel convincing. The potable water connection rate increased from an estimated 53.1 per cent in 2008 to 63.7 per cent in 2015, which means around 1.2 million people gained access over eight years.[514] The connection rate increased further after 2015, reaching roughly 77 per cent by the early 2020s, rural areas are

[512] OECD (2020) *Financing Water Supply, Sanitation and Flood Protection: Challenges in EU Member States and Policy Options*, p. 26.
[513] ANRSC (2023), *Raport de analiză a performanței operatorilor de apă și apă uzată din România și a efectelor reglementării economice.*
[514] World Bank (2018) *Romania water diagnostic report: Moving toward EU compliance, inclusion, and water security*.

still underrepresented.[515] Rural localities equipped with piped water systems rose from 1,806 to 2,157, and rural localities equipped with sewerage collection systems rose from 451 to 809.[516]

Regionalisation was meant to create a structure that could absorb EU funds and make service delivery more professional. In the areas actually covered by delegation contracts, access is on average around 80 per cent, but the differences are significant. Some operators, such as in Brașov, Constanța or Cluj, exceed 95 per cent, while others remain below 70 per cent.[517], EU convergence funding assumes coherent service areas, but in practice, the boundaries of responsibility remain incomplete and often depend on local decisions.

As a result, a high percentage of people remain unconnected, even though they are formally within the service area of regional operators. So being "inside" the system does not necessarily mean being connected or benefiting from investment.[518]

This is where transition financing clearly links to tariff reform and its social limits. By April 2017, average tariffs for large utilities were around 3.37 lei per m³ for water and 2.60 lei per m³ for sanitation, excluding VAT.[519]

These tariffs have increased significantly over the years. Romania's water tariffs are described as roughly three times higher than in non-EU countries in the region and are already approaching EU-13 levels, where tariffs can be relatively high compared to incomes. By the mid-2010s, they were almost twice as high as in Bulgaria and two to three times higher than in neighbouring non-EU countries such as Serbia, Ukraine, Moldova, Albania and North Macedonia, as shown in comparative Danube basin data.[520]

Convergence within the sector is therefore uneven, as prices converge faster than access. Households that are connected face tariffs increasingly similar to EU levels, while other people, citizens, remain unserved.

The threshold has gradually tightened over time, from 4 per cent of household income in early programmes to 3 per cent under ISPA.[521], and then to 2.5 per cent during the SOP[522]

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[515] Eurostat (no date) *Population connected to public water supply (% of population).*
[516] World Bank (2018) *Romania water diagnostic report: Moving toward EU compliance, inclusion, and water security*.
[517] ARA (2010) *Restructuring of the Romanian Water Sector*. Romanian Water Association, IWA Barcelona.
[518] World Bank (2018) *Romania water diagnostic report: Moving toward EU compliance, inclusion, and water security*.
[519] ANRSC (2023), *Raport de analiză a performanței operatorilor de apă și apă uzată din România și a efectelor reglementării economice.*
[520] BDO (2017a) *Impact of Regionalization on the Financial Performances of the Operators*. Washington, DC: World Bank.
[521] Pre accession.
[522] Post accession to the EU. Sectoral Operational Programme Environment.

period.[523] Yet by 2015, the average WSS bill was already around 2.9 per cent of household disposable income, exceeding this benchmark.[524]

Some regional operators reportedly reach or exceed 3.5 per cent for the average household, and since the benchmark is based on averages, poorer households may end up spending close to or even above 5 per cent of their income on water services.

The problem is quite simple, as averages do not protect the most vulnerable. If cost recovery and debt service are required, but affordability is measured against average income, then low-income households can be priced out. The result is a pattern: networks are built, but households do not connect, and reduce consumption.

Recent EU funding programmes have not necessarily solved this problem. Romania received considerable funding through the National Recovery and Resilience Plan (PNRR), where water and wastewater infrastructure is one of the important areas of investment. Still, having the money available does not automatically mean that the problems will be solved. Projects can be delayed, local authorities may not have enough administrative or technical capacity, and investments can be more difficult to implement in small rural communities. In these areas, extending a water or sewerage network can also be expensive compared to the relatively small number of users it will serve.[525]

This is especially important because many of the remaining gaps are found exactly in rural and more vulnerable communities. Therefore, convergence cannot only mean obtaining more EU funding. Romania also needs to be able to prepare projects, use the available money, build the infrastructure and, importantly, maintain it after the EU-funded project is finished. Otherwise, new infrastructure can be built without solving the longer-term financial and access problems of the sector.

Finally, the social profile of exclusion shows the limits of tariff-based expansion. Survey data indicate that access for the poorest groups is far below national averages: among the lowest income quintiles, only about 54 per cent have access to piped water and 42 per cent to flush toilets, while for those below the poverty line, the figures drop to 32 per cent and 20 per cent.

[523] World Bank (2018) *Romania water diagnostic report: Moving toward EU compliance, inclusion, and water security*.
[524] World Bank (2018) *Romania water diagnostic report: Moving toward EU compliance, inclusion, and water security*.
[525] World Bank (2018) *Romania water diagnostic report: Moving toward EU compliance, inclusion, and water security*.

More recent data still place the poorest quintile at around 37 per cent for in-house piped water and 25 per cent for in-house toilets.[526]

This reflects the problem of inclusion. When the remaining unserved population is largely poor and rural, a model that relies mainly on tariffs for sustainability will likely stall unless it is combined with targeted social measures.

On one hand, the EU convergence financing model has delivered measurable progress, especially through regional operators and EU-funded infrastructure. On the other hand, convergence has not yet been achieved. This means tariffs have moved closer to EU levels faster than access has expanded, as water service prices are catching up faster than people are gaining access to them.

5. From Price Control to Convergence: Two Models of Financing Water Services

The financing of water services in Hungary and Romania developed in two rather different directions, especially regarding cost recovery, investment and affordability. Hungary follows a strongly centralised model, where tariff policy and state intervention have an important role. Romania developed differently, with a system strongly influenced by EU accession, convergence and the need to finance the infrastructure necessary for compliance. Both models have their advantages, but also their own financial problems.

At the same time, both countries operate under the same EU legal framework. Article 9 of the WFD requires Member States to take into account the principle of cost recovery for water services. How this principle is applied in practice, however, is quite different. Hungary and Romania therefore show two different ways of balancing the financial needs of water services with the need to keep water affordable.

In Hungary, tariff policy has been strongly influenced by political decisions.[527] Water tariffs were first frozen in 2012[528] and were then reduced in 2013 as part of the utility cost reduction policy.[529] Since then, residential tariffs have remained practically unchanged. This created continuous pressure on the revenues of water service providers, while the costs of operation, energy, labour and infrastructure maintenance continued to increase. EU and national funds could support larger infrastructure investments, but they could not replace the revenues needed for the everyday maintenance and gradual renewal of the system. With tariffs

[526] Revolve Media (2026) 'Despite Financial Backing, Romania Lags Behind EU Water Standards'.
[527] OECD (2026) *Water Governance for Climate Resilience in Hungary*. Paris: OECD Publishing; European Commission (2023) *Country Report Hungary 2023*. Brussels.
[528] Act CLXXXIX of 2012 on the amendment of certain laws related to public utility services (Hungary).
[529] Act LIV of 2013 on the reduction of utility costs (Hungary).

not following the actual development of costs, operators have much less possibility to create the financial reserves needed for replacing ageing infrastructure. The Hungarian system therefore keeps household prices stable in the short term, but this stability also has a cost, which becomes more visible in the longer term.

In Romania the tariff development has been influenced much more by the requirements connected to EU compliance and infrastructure investment. Tariffs increased considerably over the past decade, partly because operators have to provide revenues for the operation and co-financing of an expanding and modernising system. Operational costs can generally be covered from tariff revenues, but major infrastructure investments could not have been financed from tariffs alone. More than 70% of capital expenditure has been supported through EU funds and loans from international financial institutions, together with national co-financing.[530] Romania therefore has another type of cost-recovery problem. Tariffs can be adjusted more easily than in Hungary, but the investment side of the system remains strongly dependent on money coming from outside the sector.

The two countries therefore face different financial problems. In Hungary, the main limitation comes from keeping revenues artificially low through tariff regulation. In Romania, the problem is more connected to the high level of investment still needed and the dependence on EU and other external financial resources. Neither situation provides an easy solution for the long-term sustainability and resilience of water services.

Affordability is also a problem in both countries, although again in a different form. In Hungary, the reduction and later freezing of tariffs has helped to keep the direct water expenditure of households relatively low.[531] But low tariffs do not automatically mean that water is affordable for everyone. Regional income differences remain important, and poorer households can still spend a considerable part of their income on water and other utility services. The Hungarian approach tries to solve affordability mainly by keeping the general tariff level low for everyone, rather than through more targeted support for households that actually need it.

In Romania, the situation is almost the opposite as the tariffs have increased together with investment and compliance needs, and therefore households are exposed more directly to the increasing costs of the sector. Even where average affordability indicators remain within generally used thresholds, these averages can hide much larger burdens for lower-income

[530] World Bank (2018) *Romania Water Diagnostic Report: Moving Toward EU Compliance, Inclusion, and Water Security (Revised)*.
[531] OECD (2026) *Water Governance for Climate Resilience in Hungary*.

households.[532]This is particularly important in rural areas and among poorer or marginalised communities, where incomes are lower and where some of the largest infrastructure gaps still exist. The Romanian model therefore allows more room for cost recovery through tariffs, but at the same time creates stronger questions around affordability.

The institutional structure also reflects these differences, because the Hungarian water sector has become increasingly centralised, with the state taking a larger role in service provision, particularly through Nemzeti Vízművek Zrt. At the same time, the limited flexibility of residential tariffs restricts the possibility of operators to react to increasing costs or move closer towards full cost recovery. Centralisation therefore gives the state more control over the system, but it also places more responsibility on the state when the revenues of operators are not sufficient.

Romania continues to operate through its regionalised model, combined with national economic regulation and a financing system strongly connected to EU programmes and international financial institutions. Tariffs can be adjusted more regularly, and investments can be coordinated with EU-funded programmes. However, this also creates dependence on external funding periods and on the administrative capacity to actually prepare and implement the projects. The Romanian model continues to focus strongly on infrastructure development and reaching EU requirements. Higher tariffs are part of this process, but so are the affordability problems and the continuing dependence on external financing.

Hungary takes another direction. Price stability and short-term household affordability remain important elements of the model. However, as infrastructure becomes older and maintenance costs continue to grow, the financial consequences of keeping tariffs unchanged become more difficult to ignore. The question is increasingly not only whether consumers can afford the service today, but also whether the sector can afford to provide the same service in the future.

Both systems therefore arrive at the same basic tension, but from different directions. Water services have to be financially sustainable, they have to fulfil EU requirements, and at the same time they have to remain accessible and affordable. Hungary and Romania try to balance these objectives differently, and neither model completely solves the conflict between them.

[532] OECD (2020) *Financing Water Supply, Sanitation and Flood Protection: Challenges in EU Member States and Policy Options.*

Aspect	Hungary	Romania
Tariff Policy	Tariffs frozen since 2012–2013, with strong central control	Gradual tariff increases linked to investment and EU compliance
Cost Recovery	Limited cost recovery; tariffs do not cover full lifecycle costs	O&M generally covered; capital costs largely financed externally
Capital Investment	EU and state funding; limited ability to build reserves	The majority is financed through EU funds and IFI loans, with national co-financing
Financial Sustainability Risk	Risk of underfunded maintenance and long-term asset deterioration	Dependence on external funding cycles and limited internal financing capacity
Affordability Approach	Low tariff strategy; affordability ensured through price suppression rather than targeted measures	Rising tariffs; higher burden on low-income households despite formal benchmarks
Governance Model	Increasing centralisation through state ownership (Nemzeti Vízművek) with strong tariff control	Regionalised model with national regulator (ANRSC) and coordinated investment planning

Table 6. Comparative Overview of Water Services Financing in Hungary and Romania

5.1. Observation Regarding the Comparison

The comparison between Hungary and Romania reveals not two successful or unsuccessful models, but two distinct governance responses to the same structural tension between financial sustainability, affordability, and compliance with European Union obligations. The difference lies not in the ownership structure but in how governance frameworks shape financing choices and distribute financial burdens.

First, the analysis identifies two divergent cost-recovery regimes as exemplified above. In the Hungarian example, this operates under a politically constrained tariff model, where tariffs have been frozen and reduced since 2012–2013.[533] This limits the cost recovery beyond basic operation and maintenance. Romania, by contrast, follows a compliance-driven model, where tariffs have increased progressively to support infrastructure development, while relying heavily on external funding for capital investment, through PNRR and EBRD.[534] As the plan of PNRR itself states, the "Green transition" pillar includes measures aimed at strengthening the regulatory framework for sustainable management in the water and wastewater sector. Water governance is not treated here as an isolated regulatory field, but as part of a wider transformation.[535]

[533] Act CLXXXIX of 2012 on the amendment of certain laws related to public utility services (Hungary); Act LIV of 2013 on the reduction of utility costs (Hungary).
[534] European Bank for Reconstruction and Development (EBRD) (2025) *Romania Country Strategy 2025–2028*, London: EBRD; see also EBRD Project Database, e.g. water and wastewater infrastructure project (Hunedoara.
[535] European Parliamentary Research Service (EPRS) (2025) *Romania's National Recovery and Resilience Plan: Latest state of play*, Next Generation EU (NGEU) delivery – How are the Member States doing? Author: Marin Mileusnic. PE 733.641, September.

This reflects different political approaches to tariff governance, as one has a centralised price control and the other has regulatory and EU-driven adjustment.

Second, these models produce opposing financial sustainability risks, as shown. In Hungary, tariff suppression limits revenue and at the same time undermines long-term cost recovery, risking an infrastructure deterioration in the long run. In Romania, high levels of investment, which are largely financed through EU funds and international loans, are creating structural dependence on external funding cycles, as exemplified in the EBRD and PNRR. This creates a different approach as Hungary internalises financial pressure through underpricing, while Romania externalises it through reliance on external finance. Internal versus external financial methods can be observed here. Same problem with opposing solutions from the two examined countries.

Third, the affordability strategies differ across the examined countries. Hungary prioritises affordability through low tariffs, ensuring short-term social acceptability, but without targeted social instruments that can create long-term sustainability and affordability issues. While Romania accepts rising tariffs as a condition of investment and compliance, it increases the burden on lower-income households.[536] Affordability is thus managed through price suppression in Hungary and absorbed through household expenditure in Romania. Both examples hold underlying problems for the long-term affordability of the water service.

Fourth, different governance–finance configurations can be seen in the two countries. Hungary combines local utility structures with strong central control over tariffs, which limit financial autonomy and flexibility. While Romania regionalised and strengthened its regulatory frameworks so it can access EU funding, it has not resolved the preexisting financial vulnerabilities. Governance arrangements, therefore, directly shape financial capacity and system performance in both of the examples.

The financial risks are allocated differently across time and social groups in these examples. Hungary defers financial pressure into the future through underinvestment, while Romania absorbs it in the present through higher tariffs, external investment and borrowing from the EU. Political prioritisation rather than technical necessity is the drive in these examples.

Putting aside the differences, we can argue that both have the same structural challenges. EU law, particularly the cost-recovery principle under the WFD, requires the financing of these

[536] World Bank (2018), *Romania Water Diagnostic Report: Moving Toward EU Compliance, Inclusion, and Water Security (Revised).*

obligations, but does not determine how these costs are distributed. National governance frameworks, as in Hungary and Romania, therefore mediate the balance between tariffs, public funding, and social protection, but with slight differences. The core problems are the same for both countries, but how they tackle them is interesting to exemplify.

Hungary and Romania represent two incomplete responses to the same problem, without a clear winner. Hungary prioritises affordability at the expense of long-term sustainability, Romania prioritises investment at the expense of social equity. The comparison can confirm that the resilience of water services depends less on ownership structures and more on how governance systems allocate financial responsibility across time, institutions, and society. Both examples demonstrate that the same problem can be approached from different angles and addressed through different tools. However, neither produces a fully satisfactory outcome.

VII. Comparative Contrasts

1. Hungary and Romania

Before turning to the comparison structure with other countries, it is useful to briefly situate the two systems in structural terms, to further understand the country's motives in choosing the model and the outcomes of the changes allocated in these throughout the years.

Category	Key Insight
Regulatory structure	National regulator (HEA/MEKH) oversees the sector, alongside the consumer protection authority.
Legal framework	Governed by Act CCIX of 2011 on water utility services
Tariff authority	Tariffs are centrally regulated by the national authority.
Governance model	Predominantly public system; no private direct or delegated management in practice
Service responsibility	Public ownership and responsibility at the municipal or state level
Performance & accountability	Regulator monitors service quality; consumer protection authority oversees billing and user-related issues.
Financing logic	Price-cap regulation with no regular tariff updates (highly controlled system)
Public vs private role	Exclusively public ownership of infrastructure and service provision
Social protection (affordability)	Limited formal affordability mechanisms; public subsidies exist
Access & infrastructure	Near-universal access to water services (approx. 100%) and high wastewater coverage
System efficiency	Moderate non-revenue water levels (approx. 21%)

Table 7. Detailed governance in Hungary[537]

[537]Author's own table based on: Act CCIX of 2011 on water utility services (Hungary); MEKH (n.d.) *Sector Reports*; OECD (2015b) *The Governance of Water Regulators*; EurEau (2017) *Europe's Water in Figures*; OECD (2026) *Water Governance for Climate Resilience in Hungary*.

Category	Key Insight
Regulatory structure	National regulator **ANRSC** oversees the sector[1]
Legal framework	Governed by Law No. 241/2006 (water services) and Law No. 51/2006 (public utilities)
Tariff authority	Tariffs approved jointly by the regulator and local authorities
Governance model	Mixed system: public direct, public delegated (regional operators), and limited private delegated management
Service responsibility	Multi-level governance: local authorities, inter-municipal associations (ADI), and the regulator share responsibilities
Performance & accountability	Quality indicators defined by the regulator but mainly monitored at the local/ADI level (fragmented accountability)
Financing logic	Cost-plus tariff model with annual inflation adjustments and investment consideration
Market structure	Regionalisation model with ~43 regional operators alongside hundreds of small local systems
Public vs private role	Predominantly public system; limited private participation (e.g. Bucharest, Ploiești concessions)
Access & infrastructure	Lower access levels (approx. 69% water, 53% wastewater) and significant infrastructure gaps
System efficiency	High non-revenue water (approx. 46%), indicating inefficiencies

Table 8. Detailed governance in Romania[538]

The tables above are necessary to enable the comparison with the selected countries, as they follow the same logic and overall structure. What can be observed, from the get-go, is that the comparison makes the divergence more visible in how the systems actually function. In Hungary, decision-making is pulled towards the centre, and Romania operates within a fragmented structure, where responsibilities are shared and not always clearly held by anyone in particular.

So the difference is not really about ownership, both systems are, in the end, public. It is more about how they deal with the same constraint.

Furthermore, the comparison of Hungary and Romania with the selected Western European countries, below, is methodologically relevant because it combines the most similar and the most different case designs. While Hungary and Romania provide a controlled basis for identifying the differences within comparable structural conditions, the inclusion of Western European models introduces a more functional variation in ownership, regulation, and financing. In this case, we move beyond regional specificities, and we can test whether

[538] Author's own table based on: Law No. 241/2006; Law No. 51/2006; ANRSC (n.d.); World Bank (2018), *Romania Water Diagnostic Report: Moving Toward EU Compliance, Inclusion, and Water Security (Revised)*; EurEau (2017) *Europe's Water in Figures: An Overview of the European Drinking Water and Wastewater Sectors*; 280. European Water Regulators (WAREG) (2022) 'Governance of the Romanian water and wastewater industry'.

governance structures, rather than ownership forms, can better explain the resilience and performance of water services across different European contexts.

2. France

Category	Key Insight
Regulatory structure	No dedicated water regulator; ministries set standards, municipalities ensure implementation
Tariff authority	Tariffs approved at the local (municipal) level
Governance model	Full flexibility: public management, delegated public management, and delegated private management coexist
Service responsibility	Municipalities are legally responsible for water supply, wastewater, and service quality.
Performance & accountability	National performance indicators; municipalities must report annually; private operators must publish service quality reports
Financing logic	Tariff-based system with local control and oversight
Social protection (affordability)	Progressive tariffs, solidarity funds, and public subsidies exist
Access & infrastructure	Near-universal access (100% wastewater connection; minimal deprivation)

Table 9. Governance, Ownership and Financing Model of Water Services in France[539]

In France, water supply and wastewater services developed through a model which is often connected to privatisation, but which is more precisely based on the *délégation de service public* (DSP). Under this system, municipalities can provide water services directly or delegate their operation to private companies, while the infrastructure itself remains publicly owned.[540] Therefore, this is not privatisation in the classical sense, where public assets are sold to private companies. Even where a private company operates the service, the water infrastructure remains in public ownership.[541]

Municipalities have the main responsibility for organising water supply and wastewater services. They can provide the service themselves or transfer its operation to a private operator through a contractual arrangement. However, the ownership of the infrastructure remains with municipalities, inter-municipal entities or other public bodies. This separation between ownership and operation is one of the most important characteristics of the French model.

The level of responsibility transferred to the private operator depends on the type of contract. In some arrangements, private companies can have a broader role in the construction,

[539] Author's own table based on: OECD (2015b) *The Governance of Water Regulators*; République Française, *Code général des collectivités territoriales*; International Economic Forum (ifo Institute) (2007) *Private sector participation in water infrastructure*, CESifo DICE Report 2/2007.
[540] Wackerbauer (2007), p. 102.
[541] Lime, C. (2015) 'Turning the page on water privatisation in France', in Kishimoto, S., Lobina, E. and Petitjean, O. (eds.) *Our Public Water Future*. Amsterdam: TNI, p. 59.

financing and operation of infrastructure over a longer contractual period. In others, only the operation of the existing infrastructure is delegated. In practice, the *affermage*, or lease-type model, became particularly important. Under this arrangement, the private operator manages the service and collects revenues, while the main responsibility for infrastructure investment remains with the public authority. Contract periods also became shorter over time, with an average duration of around 11 years since 1998.[542]

The French model is therefore different from the Anglo-Saxon form of privatisation, where ownership of water infrastructure can be transferred to private companies. In France, public ownership remains, while private companies can take responsibility for the everyday operation of the service. Since 1993, these contracts have also been subject to competitive tendering requirements.[543] Contractual delegation has nevertheless remained an important element of French water service provision.[544]

Another important part of the French system exists above the level of individual water utilities. Since the first Water Law of 1964, water management has been organised around river basins.[545] Each major basin has a *Comité de Bassin* and an *Agence de l'Eau*. These institutions bring together the state, local authorities, water users and other actors and participate in the planning, financing and broader management of water resources.

The two institutions have different roles. The *Comité de Bassin* mainly functions as the deliberative body at basin level, while the *Agence de l'Eau* has a more practical and financial role. Water agencies collect charges connected to water abstraction and pollution and redistribute these revenues towards infrastructure, environmental protection and other water-related measures. This creates another financial layer next to the tariffs collected for the provision of water services and follows, in particular, the user-pays and polluter-pays principles.

From a governance perspective, France therefore represents an interesting middle position between public and private provision. Water services are not fully privatised because the infrastructure remains publicly owned. At the same time, important operational responsibilities can be placed in private hands for several years. The formal ownership of the infrastructure therefore does not necessarily tell us who has the most influence over the everyday operation

[542] Lime (2015), p. 61.
[543] Lime (2015), p. 60.
[544] See also, OECD (2016) *Agriculture and water policies: France country note*.
[545] Belenyesi, P. (2014) 'Regulation of Water Services in the EU: Recent Modifications in the Hungarian Regulatory Framework for Water Service Provision', European Networks Law and Regulation Quarterly, 2014, pp. 17–27.

of the service. This becomes particularly important in longer contractual relationships, where private operators can develop considerable technical knowledge and informational advantages. Competition has also been a long-standing problem. Before the adoption of the *Loi Sapin* in 1993, delegation contracts could be renewed without effective competitive procedures, creating important transparency concerns.[546] The introduction of mandatory competitive tendering was intended to change this situation. However, formal competition did not automatically create a strongly competitive market. In many tendering procedures only one or two companies submitted offers, while incumbent operators were frequently able to retain their contracts.[547]

At the same time, a relatively small number of large companies, particularly Veolia, Suez and Saur, continued to have a strong position in the French market.[548]

This shows another limitation of looking only at the formal rules. A competitive tendering procedure can exist in law, but this does not necessarily mean that strong competition exists in practice. Market concentration, experience and the information already held by existing operators can influence the outcome. The French model is therefore better understood as a delegated system, where public ownership exists together with a relatively concentrated private operating market.

The financing structure is similarly mixed. Water services are financed mainly through user tariffs, and the water bill remains the main source for covering operational costs and an important part of infrastructure expenditure.[549] However, the revenues collected through water services do not remain with one actor. They are distributed between operators, local public authorities and the water agencies, depending on the institutional and contractual arrangement. Part of the revenues collected by operators is also transferred back to local authorities and can be used for investment purposes.[550]

The *Agences de l'Eau* add another element to this financing model. Through abstraction and pollution charges, they collect resources at basin level and redistribute them towards infrastructure investments and environmental measures.[551] Local and regional public subsidies, taxation and, to a smaller extent, EU funding provide additional sources of financing.[552] The French system therefore does not depend on only one financial source. Tariffs remain at its

[546] France (1993) *Loi No. 93-122 du 29 janvier 1993*, Journal Officiel, Art. 38.
[547] Observatoire des DSP (no date) *Synthèses de l'enquête annuelle*.
[548] Public Services International Research Unit (PSIRU) (2012) *Amiért a vízszolgáltatás közszolgáltatás: A privatizáció mítoszainak leleplezése*.
[549] OECD (2015c) *Water Resources Allocation: Sharing Risks and Opportunities*; Unnerstall, (2007).
[550] FP2E (2017) *Public Water and Wastewater Services in France*. Paris: BIPE/FP2E.
[551] France (1964) *Law No. 64-1245 of 16 December 1964*.; Szilágyi (2019).
[552] OECD (2015c) *Water Resources Allocation: Sharing Risks and Opportunities.*

centre, but they are combined with basin-level redistribution and different forms of public support.

However, the sustainability of this model is also becoming more difficult. A financing system based strongly on the volume of water consumed creates a contradiction when water policy itself asks consumers to use less water. Lower consumption is environmentally desirable, but it can also reduce the revenues of utilities while many of their costs, especially infrastructure maintenance, remain fixed.[553] This can already be seen in the discussion around Eau de Paris, where reducing consumption is an important policy objective. The problem is therefore quite simple: if the system successfully encourages people to consume less water, financing the service mainly through the amount of cubic metres sold becomes increasingly difficult. In the longer term, the French model also has to find a way to finance infrastructure and service provision without depending so strongly on increasing or stable water consumption.

Cost recovery is therefore present, but it is not stable or neutral. As Barraqué shows, "cost recovery based on volumes sold turns any reduction of water consumption into a loss of revenues for the water utility," while operators are "frequently bound to increase water tariffs to balance [their] expenditures with revenues."[554]

> "In any case, the reality is … like most water services in France and Europe, with the so-called problem of 'price scissors': on the one hand, revenue from billing tends to decrease because of lower water consumption; on the other hand, costs keep going up, mainly because of new water treatment standards."[555]

This creates a circular dynamic: lower consumption, while environmentally desirable, weakens the financial balance of the service and may lead to higher tariffs, which in turn raises affordability concerns, as "growing water rates generate problems of water affordability for the poor."[556]

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[553] Petitjean, O. (2015) 'Taking stock of remunicipalisation in Paris: A conversation with Anne Le Strat' in Kishimoto, S., Lobina, E., Petitjean, O. (eds.) *Our public water future: The global experience with remunicipalisation*. Amsterdam–London–Paris–Cape Town–Brussels: Transnational Institute, pp. 66–76, p. 68.
[554] Barraqué, B., Isnard, L., Souriau, J. (2017) 'European urban water crisis: The management dimension', *La Houille Blanche*, (2), p. 28.
[555] Petitjean (2015), p. 68.
[556] Barraqué, Isnard and Souriau (2017), p. 28; Also this idea was developed in: Fitch, M., Price, H. (2002) *Water poverty in England and Wales*. Report for the Chartered Institute of Environmental Health, published by the Public Utility Access Forum, p. 45.

Moreover, the prohibition of water disconnections for non-payment, introduced by the Brottes Act (2013), strengthens the protection of access.[557] However, this has been accompanied by rising levels of unpaid bills, which may create additional financial pressure on operators and potentially influence tariff dynamics.[558]

The French model, therefore, does not simply show public ownership with private operation. It also shows the limits of a tariff-based financing model. "It is only since the mid-2000s that there has been a significant trend towards a return of water and sanitation services to public management. Public water management has been "gaining" about 1 per cent on average every year since 2008 (in terms of population covered). Water remunicipalisation in Paris, initiated in 2003 but not completed until 2010, was a flagship case in this regard and has inspired other policy-makers."[559]

The evolution of French water governance since the 1960s is broadly consistent with the OECD Principles, it still reveals important shortcomings and areas for improvement, particularly regarding the impact of governance changes and the need for better indicators to assess them.[560] In this sense, the example of France is useful for our comparison, because it shows that cost recovery can be formally respected while still producing social and financial tensions.

[557] France (2013) *Law No. 2013-312 of 15 April 2013 (Brottes Act)*.
[558] FP2E (2017).
[559] Lime (2015), p. 62.
[560] Barraqué, B., Barbier, R. and Laigneau, P. (2022) 'Water Governance', *Water International*, 47(2), pp. 160–180.

3. Germany

Category	Key Insight
Regulatory structure	No single national water regulator; responsibilities are shared across federal, regional, and local authorities
Tariff authority	Tariffs approved at the local level with oversight from competition authorities
Governance model	Mixed system: public direct, public delegated, and private delegated management coexist
Service responsibility	Strong local/municipal responsibility for service provision
Performance & accountability	Service conditions are defined locally; mandatory connection and use obligations exist under local statutes.
Financing logic	Cost-based, locally determined tariffs with competition law oversight
Market structure	Highly fragmented sector with thousands of municipal utilities
Public vs private role	Predominantly public system, with limited but significant private participation

Table 10. Governance, Ownership and Financing Model of Water Services in Germany[561]

In Germany, water services are mostly publicly owned, but the system is not centralised. The responsibility is mainly at municipal level, although mixed and hybrid forms also exist. Water and wastewater services are considered part of local public service obligations, or *Daseinsvorsorge*. This means that cities and municipalities are responsible for providing these services, but they also have the possibility to decide how they want to organise them.[562]

The system is therefore highly decentralised, with many local operators and different forms of cooperation between municipalities. Municipalities can also work together through different associations. Private actors can be involved as well, but this does not really change the basic structure of the sector. Water infrastructure has very high fixed costs and it would make little sense to build several parallel networks just to create competition. Because of this, real competition remains limited and water supply operates mostly as a natural monopoly.[563]

Public support for keeping water under public control is also quite strong. This could be seen during the Right2Water initiative, which received considerable support in Germany.[564] Water is still strongly seen as a public good and as something that should not be too easily exposed to normal market dynamics. This also explains why the role of municipalities remains important.

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[561] Author's own table based on: OECD (2015b) *The Governance of Water Regulators*; Bundeskartellamt (Germany); EurEau (2017) *Europe's Water in Figures: An Overview of the European Drinking Water and Wastewater Sectors*.

[562] Hecht, C. (2015) 'German municipalities take back control of water' in Kishimoto, S., Lobina, E., Petitjean, O. (eds.) *Our public water future: The global experience with remunicipalisation*. Amsterdam–London–Paris–Cape Town–Brussels: Transnational Institute, pp. 50–58.

[563] Wackerbauer, J. (2006) 'The regulation and privatisation of the public water supply and the resulting competitive effects', *CESifo DICE Report*, 4/2006, p. 42.

[564] Tosun, J., Triebskorn, R. (2020) 'Civil society and the governance of water services: German political parties' reactions to Right2Water', *Water*, 12, 743.

Water governance itself is based on regulation, monitoring and longer-term planning. Water quality and the ecological condition of water resources are regularly monitored, and the purpose is not only to provide the service, but also to maintain the system and prevent its deterioration over time.[565] This also follows the broader requirements of EU water law and especially the Water Framework Directive.[566]

At the same time, water infrastructure is very path dependent. Networks and treatment facilities have long life cycles and high sunk costs. Once the infrastructure is built, it cannot simply be changed when circumstances change. This makes adaptation more difficult, especially in regions where the population is declining or where water demand is changing.[567] Even if fewer people use the system, the same infrastructure still has to be maintained and financed.

The National Water Strategy tries to respond to these problems by connecting environmental protection, infrastructure and long-term planning. As it was noted from Astrid Damerow (CDU/CSU), rapporteur, "financing is also unclear, and the progress of implementation is difficult to measure".[568] Having a strategy is one thing, but implementing and financing the measures included in it is another.

Water services are financed mainly through tariffs, and these tariffs are expected to reflect the costs of providing the service. This means that a large part of infrastructure and operational costs is financed by the users through their water bills. From an EU law perspective, this is connected to the cost-recovery principle of Article 9 of the Water Framework Directive. However, the principle does not mean that every Member State has to organise cost recovery in exactly the same way. In *Commission v Germany*, the Court of Justice also confirmed that Member States have room to decide how this principle is applied within their own systems.[569]

But relying strongly on tariffs also creates problems. If infrastructure becomes more expensive, or fewer users have to finance the same network, these costs eventually have to be paid by someone. When the system is mainly tariff financed, a considerable part of this burden

[565] Arle, J. et al. (2017) Waters in Germany: Status and Assessment. Dessau-Roßlau: Umweltbundesamt (German Environment Agency).
[566] European Parliament and Council (2000) *Directive 2000/60/EC establishing a framework for Community action in the field of water policy*, OJ L 327, 22 December 2000, Art. 9.
[567] Hüesker, F., Moss, T., Naumann, M. (2011) 'Managing water infrastructures in the Berlin-Brandenburg region between climate change, economic restructuring and commercialisation', *Die Erde*, 142(1–2), pp. 187–208.
[568] Dods Political Intelligence Ltd. (2023) Guide to Germany's First National Water Strategy, p. 5.
[569] Case C-525/12, *European Commission v Germany*, EU:C:2014:2202, Judgment of 11 September 2014; In this case The Commission wanted a broad interpretation, covering many types of water use, but Germany argued for a narrower one, focused on supply and wastewater. The Court agreed with Germany and said that Article 9 does not apply to everything automatically, and that Member States still have room to define how their system works.

can fall on consumers through their water bills. This opens another question about affordability and about how these increasing costs should be distributed. Furthermore, stakeholders emphasise that the implementation of new measures "will require significant costs that must be distributed fairly across society", and that municipalities need sufficient financial resources to carry these responsibilities.[570]

But what happens when this balance is disturbed in a disproportionate way?

Berlin is probably the most visible example. In 1999, the city partially privatised its water utility. The idea was to introduce private capital into the system and also to improve efficiency, which is usually one of the main arguments behind privatisation. However, the contracts included guaranteed returns for the private investors. This meant that private actors entered the system, but an important part of the financial risk remained with the public side.[571]

In the following years, water tariffs increased considerably. These increases were partly connected to cost recovery and investment needs, but consumers were also paying for the guaranteed returns of private investors.[572] Water bills were therefore no longer only about covering the costs of the infrastructure and the service. They also included the costs created by the privatisation arrangement itself.

This eventually created strong public opposition. A referendum in 2011 demanded more transparency, and later Berlin bought back the private shares. The water utility returned to full public ownership. But this was also not free. The shares had to be repurchased and the costs of this process again had to be financed.[573] The Berlin example therefore shows that privatisation did not remove public responsibility. It changed where the responsibility was placed for a period, but in the end the public side still had to deal with the financial consequences.

Germany is now also facing another type of problem. Climate change, droughts, floods, pollution and changing water availability are becoming more important for the water sector. Moreover, Helmut Kleebank, rapporteur, underlined that: "The National Water Strategy is an important start and a huge success in securing water as the basis of life for everyone. Last year's summer drought, the Oder disaster, the accumulation of microplastics and multi-resistant germs, as well as the flooding of the Ahr valley, made us aware of the importance of water for central areas of our lives. These events show that the effects of climate change are already

[570] Dods Political Intelligence (2023), p. 6.
[571] Hecht (2015), pp. 50–58.
[572] Hecht (2015), pp. 50–58.
[573] Hecht (2015), pp. 50–58.

being felt. This increases the pressure to act to find solutions to ensure the availability of water as a resource."[574]

This is interesting because Germany is in a somewhat different position compared to countries where basic infrastructure and access problems still dominate water policy. Many of the basic elements of the system are already functioning, so more attention can be given to what comes next. But this does not mean that climate adaptation will be easy. New infrastructure, adaptation measures and environmental protection also need money. This again brings the discussion back to financing, tariffs and the distribution of costs.

So the question is not only whether the German model works. The system has a relatively strong basis, but this balance still has to be maintained. Infrastructure needs to be renewed, municipalities need enough money, water bills still have to remain affordable, and at the same time Germany has to prepare for climate change and possible changes in water availability. In this sense, Germany faces many of the same questions as the other countries, but it starts from a different position.

4. Portugal

Category	Key Insight
Regulatory structure	National regulator ERSAR oversees water and wastewater services.
Legal framework	Sector governed by Decree-Law No. 194/2009 on municipal water services.
Tariff authority	Tariffs approved jointly by the regulator and local authorities
Governance model	Mixed system: public direct, public delegated, and private delegated management coexist
Service responsibility	Multi-level system combining national regulatory oversight with local service provision
Performance & accountability	ERSAR monitors service quality and publishes annual benchmarking reports (RASARP)
Financing logic	Tariff-based system with regulatory oversight and performance monitoring
Social protection (affordability)	Progressive tariffs, reduced VAT, income-based measures, and pre-disconnection procedures exist.
Access & infrastructure	High but not universal access (approx. 92% water supply; 85% wastewater connection)
System efficiency	Low non-revenue water levels (approx. 5%) indicate relatively efficient system performance.

Table 11. Governance, Ownership and Financing Model of Water Services in Portugal[575]

[574] Dods Political Intelligence (2023), pp. 4–5.

[575] Author's own table based on: Entidade Reguladora dos Serviços de Águas e Resíduos (ERSAR) (Portugal), regulatory framework and RASARP annual reports; Organisation for Economic Co-operation and Development (OECD) (2015b) The Governance of Water Regulators; EurEau (2017) Europe's Water in Figures.

In Portugal, water services are, at their core, a municipal responsibility. This is not just a formal allocation of competence, it actually shapes the whole system. Municipalities decide on investment, pricing, and even access. This raises the question of how far decentralisation can go before it starts affecting consistency and financial sustainability across the system.

Moreover, ownership and operation are not the same thing in Portugal. Municipalities keep responsibility, but they can organise service provision in different ways. Direct management exists, either through municipal departments or municipalised services without separate legal personality, which remain closely tied to the municipality itself.[576]

Moreover, management can also be delegated, either to public entities or through partnerships between the central state and municipalities, often involving Águas de Portugal.[577] This already creates a more complex structure, where responsibility is public, but operation becomes shared.

There is also the concession model, where services are transferred to private operators. Legally, this is framed as a classic concession, but in reality, the distinction is less clear. Water services are a natural monopoly, so the "risk" transferred to private actors is questionable. In practice, these concessions often resemble delegation models rather than true market-based arrangements.[578]

Portugal does not move from public to private, but rather layers different operational models on top of a fundamentally public system.

From a governance perspective, this is reinforced by the presence of an independent regulator, ERSAR, which exercises structural, behavioural and economic regulation.[579] The system is therefore decentralised in ownership, but centralised in oversight.

The legal framework formally recognises three models: direct management, delegated management and concession.[580] However, the real issue is not the existence of these models, but how they perform. In Portugal, corporatised models tend to be more efficient, mainly

[576] Portugal (2012) *Law No. 50/2012 of 31 August on the legal regime of local business entities and municipalised services*; Portugal (2009) *Decree-Law No. 194/2009 of 20 August establishing the legal framework for municipal water supply and wastewater services*.
[577] Portugal (2009) *Decree-Law No. 90/2009 of 9 April regulating partnerships between the State and local authorities*; Portugal (2009) *Decree-Law No. 194/2009 of 20 August establishing the legal framework for municipal water supply and wastewater services*.
[578] Portugal (2009) *Decree-Law No. 194/2009 of 20 August establishing the legal framework for municipal water supply and wastewater services*; Arnold, C. A. (2005) 'Privatisation of public water services: The state's role in ensuring public accountability', *Pepperdine Law Review*, 32(3), p. 597.
[579] Portugal (2014) *Law No. 10/2014 of 6 March approving the Statutes of the Entidade Reguladora dos Serviços de Água e Resíduos (ERSAR)*, Arts. 1 and 5.
[580] Portugal (2009) *Decree-Law No. 194/2009 of 20 August establishing the legal framework for municipal water supply and wastewater services*, Arts. 7 and 14.

because they introduce managerial autonomy and reduce political interference.[581] Because, where private actors are involved, the State remains responsible. Outsourcing does not remove public obligations.[582] This is essential for our study, because it confirms that governance, not ownership, carries the legal burden of ensuring access and sustainability.

In Portugal, the financial structure follows the logic of EU water law quite closely. The system is built around cost recovery, which is explicitly recognised as a central principle of pricing policy.[583]

Tariffs are expected to cover:

- Infrastructure investment
- Maintenance and renewal
- Operational costs
- Broader financial equilibrium of the service.

This includes a clear expectation that investments in expansion and modernisation should be recovered within a reasonable period.[584]

Moreover, tariffs are not neutral. They are designed to vary according to consumption, which introduces both an efficiency logic and a behavioural one. Higher use leads to higher costs, reinforcing the idea that water is an economic good.

But this is exactly where an additional tension can be observed, as Portuguese law does not treat water purely as an economic resource. It also explicitly recognises its social value, requiring universal access at a socially acceptable cost.[585] Tension between water as an economic good (cost recovery, efficiency, polluter pays) and water as a social good (accessibility, universality). These two logics are not reconciled; they coexist in the Portuguese legal landscape.

The main corrective mechanism is the social tariff, introduced by Decree-Law 147/2017.[586] Its purpose is not to make water free, but to ensure that tariffs do not exclude users

[581] ERSAR (2024) *Relatório anual dos serviços de águas e resíduos em Portugal (RASARP)*; Gonçalves, P.C. (2013) 'Ensaio sobre a boa governação da administração pública a partir do mote da "New Public Governance"' in *O governo da administração pública*. Coimbra: Almedina, p. 20.
[582] Arnold. (2005), p. 597; Langford, M. (2005) 'The United Nations concept of water as a human right', *International Journal of Water Resources Development*, 21(2), pp. 274–275.
[583] Portugal (2008) *Decree-Law No. 97/2008 of 11 June establishing the economic and financial regime of water resources*, Art. 21.
[584] Portugal (2009) *Decree-Law No. 194/2009 of 20 August establishing the legal framework for municipal water supply and wastewater services*; Portugal (2005) *Water Law (Law No. 58/2005 of 29 December)*.
[585] Portugal (2005) *Water Law (Law No. 58/2005 of 29 December)*, Art. 3(1)(a).
[586] Portugal (2017) *Decree-Law No. 147/2017 of 5 December establishing the legal framework for the social tariff for water services*.

from access. In fact, the system is quite clear on this point, as the obligation of the State is affordability, not free provision.

This is where the model becomes fragile. Social tariffs depend on municipal implementation, which means that access conditions can vary. So again, decentralisation reappears as a structural issue, this time on the financial side.

Moreover, there is a clear limit to the social measures, as these cannot undermine cost recovery. Cross-subsidisation cannot go so far that it affects the sustainability of the system as a whole. Moreover, social tariffs are still not widely applied in Portugal. Because their introduction is left to municipalities, local autonomy ends up shaping access in practice.[587] What exists at the national level as a guarantee becomes uneven on the ground, depending on local choices rather than a uniform standard.

Portugal does not really resolve the core contradiction of EU water law, it just lives with it and manages it in practice. Cost recovery is there present, but it is constantly adjusted. Affordability is protected, yet always within limits, never to the point of risking the system's financial stability. Ownership remains public, at least formally, while governance slowly becomes more mixed, more layered, sometimes harder to read.

What emerges is not a fully coherent model, but rather an ongoing balancing act, one that relies heavily on how municipalities perform and how effectively the regulator can hold the system together.

[587] Constitution of the Portuguese Republic (1976), Art. 6(1).

5. Italy

Category	Key Insight
Regulatory structure	National regulation is led by ARERA, alongside local governing bodies (EGAs/EGATOs) in a multi-level system.
Tariff authority	Tariff methodology is set by ARERA, while local government bodies (EGAs) play a role in planning and implementation.
Regulatory period	The regulatory period is four years, with a planned two-year update.
Governance model	Italy combines public direct management, delegated public management, and PPP/private participation.
Service responsibility	Water service governance is shared between the national regulator and local authorities, with strong territorial involvement.
Performance & accountability	ARERA regulates technical quality and publishes aggregated annual performance information; service quality is also shaped locally.
Financing logic	Tariffs are linked to business plans, investments, and cost recovery through a regulated framework.
Social protection (affordability)	Italy has a social water bonus and broader affordability tools for vulnerable users.
Demand planning	Future billed volumes are primarily based on past consumption, with ex post balancing mechanisms in tariff regulation.

Table 12. Governance, Ownership and Financing Model of Water Services in Italy[588]

The Italian water sector is often presented as a debate about privatisation, but this framing is misleading. The Italian experience shows that the system is not defined by a simple public–private divide, but by an ongoing attempt to balance public ownership with regulatory governance and financial sustainability.

From a formal legal perspective, ownership of water in Italy is unequivocally public. The *Consiglio di Stato*, in 2003, recognised that: "[w]ater is to be considered as an essential component of the natural ecosystem that needs protection in a long-term perspective, with special attention to water resources fit to human consumption".[589] Moreover, the Environmental Code establishes that "all surface waters and groundwaters… are publicly-owned" and must be protected according to principles of solidarity.[590] This reflects a shift away from viewing water as a resource for exploitation towards understanding it as an environmental asset and a condition for life itself. [591]

[588] Author's own table based on: Autorità di Regolazione per Energia Reti e Ambiente (ARERA) (Italy) (2024) Annual Report Summary; ARERA tariff methodology 2020–2023; OECD (2015) *The Governance of Water Regulators*; EurEau (2017) *Europe's Water in Figures*.
[589] Armeni, C. (2008) *The Right to Water in Italy*. Geneva: International Environmental Law Research Centre (IELRC), p. 2.
[590] Italy (2006) *Legislative Decree No. 152/2006*, Art. 144.
[591] Boscolo E. (2021) 'Water Resources Management in Italy: Institutions, Laws and Approaches' in De Carli A., Massarutto A., Turrini P. and Pertile M. (eds.) *Water Law, Policy and Economics in Italy: Between National Autonomy and EU Law Constraints*. Cham: Springer, pp. 105–137, p. 106.

At the level of service provision, however, the picture is more nuanced. The Galli Law[592] reorganised the sector by introducing the integrated water service and moving away from fragmented municipal management. While ownership formally remained public, service provision was increasingly entrusted to corporatised entities operating under private law, even when fully publicly owned.[593]

To better understand this distinction, the Italian scholars emphasise that water as a natural resource, water as a human right, and the water service itself do not belong to the same category, but represent distinct legal and economic realities.[594] The relevant object of regulation is not water in the abstract, but the service: infrastructure, networks, treatment systems, and their management.[595] In this sense, the Italian case avoids the simplistic opposition between "public water" and "private water". Despite political debates on privatisation, the sector remains largely in public hands. Most operators are publicly owned or controlled, including in-house companies and mixed-capital utilities with public majority ownership. The real issue is therefore not privatisation as such, but whether publicly owned operators are organised with sufficient managerial and financial capacity to deliver the service.[596]

In the governance structure of the Italian water sector we can observe a change from political control to regulatory governance. The Galli reform introduced a separation between political responsibility and service provision, combined with territorial restructuring through optimal territorial areas (ATOs).[597] This aimed to overcome fragmentation and introduce economies of scale.[598]

However, the system evolved from a fragmented two-level structure to a more centralised regulatory model, although fragmentation and inconsistency remain persistent features.[599] Institutionalisation[600] has been described as incomplete and contradictory, with governance arrangements constantly shifting between consolidation and reorganisation.[601]

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[592] Italy (1994) *Law No. 36/1994*.
[593] Citroni G. and Lippi A. (2021) 'The Permanent (De-)Institutionalisation of Multi-level Governance of Water Services in Italy' in De Carli A., Massarutto A., Turrini P. and Pertile M. (eds.) *Water Law, Policy and Economics in Italy: Between National Autonomy and EU Law Constraints*. Cham: Springer, pp. 289–309, p. 293.
[594] De Carli, A., Massarutto, A., Turrini, P. and Pertile, M. (eds.) (2021) *Water Law, Policy and Economics in Italy*. Cham: Springer.
[595] Massarutto, A. Ermano, P. (2013) 'Drowned in an inch of water', *Utilities Policy*, 24, pp. 20–31.
[596] Boscolo (2021), p. 122.
[597] Citroni and Lippi (2021), pp. 297–298.
[598] Citroni and Lippi (2021), p. 298.
[599] Citroni and Lippi (2021), p. 304.
[600] Selznick, P. (1949) *TVA and the grass roots*. Berkeley: University of California Press; Powell, W. W., DiMaggio, P. J. (1991) *The new institutionalism in organizational analysis*. Chicago: University of Chicago Press.
[601] Massarutto, A., Antonioli, B. and Ermano, P. (2013) 'Assessing the impact of water service regulatory reform in Italy: A multidimensional approach', Water Policy, 15, pp. 1046–1063.

A key development was the creation of an independent regulatory authority, ARERA, in 2012, which sets the tariffs, monitors performance, and ensures both efficiency and user protection.[602] Its function is not to promote competition in a traditional sense, but to guide operators in a context of natural monopoly. In this sense, "regulation is not meant to protect competition… rather, it aims to drive operators towards greater efficiency".[603] Here, the governance is no longer based primarily on ownership or direct political control, but on regulatory mechanisms that define performance, investment obligations, and service standards. Moreover, the Italian experience shows that regulatory governance remains dependent on institutional capacity and political context. Weak regulatory bodies, fragmentation at the local level, and conflicts between state and regional competencies have limited the system's effectiveness.[604] The Italian case also shows that financing cannot be separated from affordability and access to water. Tariffs need to provide sufficient revenues for the operation and maintenance of the service, but at the same time, they cannot make access to water unaffordable for consumers. In this sense, the protection of a minimum level of water consumption shows how tariff regulation can go beyond the simple recovery of costs and can also serve a social function.[605]

Naples was the first city to move towards re-municipalisation of the water service. This change was not accidental. It came at a very specific political moment: Luigi de Magistris was elected mayor in May 2011, just weeks before the "public water" referendum, at the peak of the public water movement, in which he was himself actively involved.[606] But it did not fundamentally change ownership; it weakened organisational and financial structures. The governance tools intended to increase participation mostly stayed on paper. In practice, they did not really change how decisions were made, and more importantly, they failed to address the real issues of investment and service quality.[607] This suggests that public ownership alone does not ensure effective governance; without institutional capacity, it may lead to fragmentation and instability.

More broadly, the Italian case reflects a hybrid model of governance. Water services operate within a "world of hybrids", combining elements of public control, corporatisation, and

[602] Boscolo (2021), p. 109.
[603] Boscolo (2021), pp. 108–109.
[604] Massarutto and Ermano (2013), pp. 20–31.
[605] Novaro, P. (2019) 'La reforma de la tarifación de los servicios urbanos del agua para los usuarios domésticos en Italia: mínimo vital y derecho de acceso universal al agua potable', in Navarro Caballero, T. M. (ed.), *Los servicios urbanos del agua: derecho humano al agua, asequibilidad y recuperación de costes*, Pamplona: Aranzadi, pp. 235–248.
[606] Citroni and Lippi (2021), p. 301.
[607] Citroni and Lippi (2021), p. 301.

regulatory oversight.[608] This hybridity is not a transitional phase, but a structural feature of modern water governance.

The financing structure of the Italian water sector is based on the principle of cost recovery, aligned with the requirements of the Water Framework Directive. Tariffs are designed to cover operational costs, investment needs, and increasingly also environmental and resource costs.[609] This represents a clear departure from traditional tax-based financing, as the system relies primarily on user payments. This can reflect the idea that water services, while serving a public function, must be financially sustainable. As noted in the literature, water pricing acts as a "prism through which the values involved can take on a tangible form".[610]

The financing of the Italian water sector is one of the most important parts of the reform process started by the Galli Law, Law No. 36/1994, which was later continued through the Environmental Code, Legislative Decree No. 152/2006, and then strengthened by ARERA's regulatory powers from 2012. The aim was to move the integrated water service away from dependence on the public budget and to create a more autonomous and financially self-sufficient water industry. This was linked not only to national fiscal pressure, but also to EU requirements, especially the Water Framework Directive and the principle of full cost recovery. The financial equilibrium and access to market-based finance became dominant objectives of water pricing.[611] This meant that tariffs had to increase because investment needs were growing, especially for ageing infrastructure and environmental compliance. Still, Italian water prices remained relatively low compared to other European countries, and average expenditure was generally below affordability thresholds.[612] Full cost recovery can help finance investments, but if all these costs are simply transferred to users, water can become harder to afford over time. This is why the role of ARERA is so important. Tariffs are no longer just about covering costs; they are also used to guide investments, improve service quality, protect users, and introduce social measures, such as progressive pricing and the water bonus.[613] Moreover, the Italian case shows that financing water services is not only a technical tariff question, but a political and social balancing exercise. Decades of insufficient investment have led to deteriorating infrastructure, high network losses, and uneven service quality. The system still struggles to generate the level of investment required for modernisation. Public operators

[608] Barraqué, Isnard and Souriau (2015).
[609] Boscolo (2021), p. 121.
[610] Travi, A. (2014) 'La disciplina tariffaria nel servizio idrico integrato', *Rivista della regolazione dei mercati*, 2014(1), pp. 314–326.
[611] Massarutto (2021), p. 396.
[612] Massarutto (2021), p. 396.
[613] Massarutto (2021), p. 396.

are often constrained by tight budgets and political pressure to keep tariffs low, while private investors remain cautious due to regulatory uncertainty and relatively low returns.[614]

Ultimately, the Italian experience suggests that the main issue lies not in ownership, but in the practical effectiveness of governance, regulatory frameworks, and financing mechanisms.

6. England and Wales

Category	Key Insight
Regulatory structure	Independent regulators: Ofwat (England & Wales)
Legal framework	Governed by Water Industry legislation
Tariff authority	Charges set by water companies within Ofwat's price-control and charging framework
Governance model	Mixed system: private model (England & Wales) and public delegated model (Scotland, Northern Ireland)
Service responsibility	Services provided by regulated operators; public ownership retained just in Scotland
Performance & accountability	Strong monitoring framework; minimum service standards enforced through compensation mechanisms and performance reporting
Financing logic	Revenue-cap (England & Wales)
Public vs private role	Predominantly private provision in England & Wales; public operator (Scottish Water) in Scotland

Table 13. Governance, Ownership and Financing Model of Water Services in England and Wales[615]

The water industry in England and Wales is often cited as the most developed example of full privatisation in Europe. Over more than three decades, this model has generated significant debate regarding its economic, social and environmental outcomes.

Historically, the importance of water and sanitation was recognised early on. In the 1850s, John Snow traced a cholera outbreak to a contaminated water pump in London, as the role of water quality in public health became more prominent.[616] However, the privatisation of water services since the late 1980s represents a fundamental shift from public provision to a market-based model.[617]

In this context, privatisation involved the transfer of publicly operated monopolies to private companies. This model is characterised by full privatisation, as ownership of infrastructure, including pipelines, wastewater treatment facilities and water resources, was

[614] De Carli, A., Pertile, M., Massarutto, A. and Turrini, P. (2021) 'A View from Within: Concluding Remarks', in De Carli, A. *et al.* (eds.) *Water Law, Policy and Economics in Italy*. Cham: Springer, pp. 493–502, p. 499.

[615] Author's own table based on: OECD (2015) *The Governance of Water Regulators*; EurEau (2017) *Europe's Water in Figures*; Ofwat and Water Industry Commission for Scotland – roles in tariff-setting, monitoring and performance reporting; Water Industry Act 1999; Water Industry (Scotland) Acts 2002 and 2005; Water Resources (Scotland) Act 2013.

[616] Buse, K. and Bayliss, K. (2022) 'England's Privatised Water: Profits Over People and Planet', *BMJ*, 378, o2076.

[617] Wackerbauer (2007), p. 102.

transferred to private, vertically integrated regional monopolies.[618] Ten main water and sewerage companies were established in this way, and their shares were sold on the open market, alongside a number of smaller water-only companies operating under the same regulatory framework.

However, the system is subject to a regulatory structure, as independent regulatory authorities oversee different aspects of the sector. The Environment Agency is responsible for environmental regulation, including water abstraction and pollution control. The Drinking Water Inspectorate ensures water quality standards, while the Office of Water Services (Ofwat) acts as the economic regulator, setting price limits and monitoring company performance. Prices are determined through a regulatory formula (RPI + K),[619] allowing companies to adjust tariffs while ensuring a regulated rate of return.[620]

From a financing perspective, the system relies primarily on user tariffs, ensuring cost recovery. However, this operates within a highly structured regulatory environment, where investment decisions and service levels are not determined by market competition, but by economic appraisal and regulatory oversight. As noted in the literature, "domestic customers cannot choose their supplier, and hence there is no market mechanism to drive service levels," and instead, "the levels of service provided are subject to economic appraisal and adjudicated upon by economic regulators".[621]

Moreover, the system has developed into a highly financialised model. Water companies have accumulated significant levels of debt, and a substantial share of revenues is directed towards financing costs and shareholder returns. Estimates suggest that debt levels in the sector have risen considerably, while dividend payments have remained high.[622]. In parallel, water bills have increased since privatisation, placing pressure on household affordability, particularly in the context of broader cost-of-living challenges.[623]

As Hall denotes:

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[618] Wackerbauer (2007), p. 102.
[619] The RPI + K formula allows water companies to adjust prices in line with inflation, where RPI (Retail Price Index) reflects general price increases in the economy, and K is a regulator-set factor that accounts for investment needs and efficiency targets, thereby limiting tariffs within a controlled framework.
[620] Wackerbauer (2007), p. 102.
[621] Metcalfe, P. (2022) 'Valuing water and wastewater services in the UK', *Journal of Environmental Economics and Policy*, 11(1), p. 1.
[622]Bayliss, K., Mattioli, G. and Steinberger, J. (2021) 'Inequality, Poverty and the Privatisation of Essential Services', *Competition & Change*, 25, p. 478.
[623] Ofwat (2022) *Cost of Living: Water Customers' Experiences*.

> "The financial costs are far lower in the public sector company.... In 2023-24 the financial costs of the privatised water companies in England and Wales averaged 35% of total revenue from consumer bills, whereas the financial costs of the public sector Scottish Water amounted to just 8% of revenue from consumer bills".[624]

Also, "these financial costs mean that over one-third of customer bills pass straight through the companies without being used for water and sewerage services".[625]

This raises important questions about the distribution of financial burdens within the system. While consumers finance the service through tariffs, part of these revenues is directed towards debt servicing and investor returns.[626] In this sense, cost recovery is achieved, but its outcomes are shaped by the financial structure of the sector rather than by purely operational needs.

Leakage is still a persistent issue, with significant volumes of water lost daily. Recent government assessments of water resource performance also indicate ongoing challenges in meeting efficiency and sustainability targets, reinforcing concerns about long-term resilience and investment priorities.[627]

Compared with publicly owned systems, such as Scottish Water, they are often presented as achieving similar or higher levels of investment while maintaining lower average charges.[628] This does not necessarily imply that one model is inherently superior, or better.

The comparison between England, Wales, and Scotland shows something quite simple, but it changes how we should think about the whole sector. Dividends are usually presented as necessary to attract investment, yet in practice, they did not bring new equity into the system.[629] Instead, private companies reduced their equity and increased their debt, while still distributing large amounts to shareholders. This points to something else: the system is not really built around long-term infrastructure needs, but around maintaining financial returns. What is interesting is that the public model, through Scottish Water, does not follow this logic, and still manages to invest more, at lower cost, and with lower prices for users.[630] So the issue is not simply whether a system is public or private, but what kind of financial logic it operates under.

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[624] Hall, D., Gray, C. (2025) *Leaking Money*, University of Greenwich (PSIRU), pp. 2–4.
[625] Hall and Gray (2025), pp. 2–4.
[626] National Audit Office (2020) *Water Supply and Demand Management*.
[627] National Audit Office (2020) *Water Supply and Demand Management*.
[628] United Nations General Assembly (2010) *The Human Right to Water and Sanitation*, A/RES/64/292.
[629] Hall and Gray (2025), p. 4.
[630] Hall and Gray (2025), p. 4.

Overall, it can be said that full privatisation does not remove the need for strong regulation. Even if ownership is in private hands, the system is still tightly controlled, and in many ways it has to be. The same tensions remain there, between financial sustainability, efficiency and social accessibility, just like in any other model, only the pressure between them feels stronger, or maybe more visible.

7. Cross-Country Comparison

7.1. Comparative Overview of Water Service Systems in Selected European Countries

Country	Ownership	Governance Model	Financing Model	Key Structural Feature
Hungary	Exclusively public (state/municipal)	Highly centralised regulatory control	Price-cap regulation + limited tariff flexibility	Centralised, state-controlled system
Romania	Public ownership (local/regional), limited private concessions	Regionalized system (ADI + operators) + fragmented oversight	Cost-plus tariffs + EU funding dependence	Transitional system with infrastructure gaps
France	Public ownership (municipal)	Highly flexible: public direct + delegated (public/private)	Locally set tariffs + strong social instruments	Hybrid system with strong municipal control and social tariffs
Germany	Predominantly public (municipal utilities)	Highly decentralised, fragmented across thousands of local entities	Cost-based local tariffs + competition law oversight	Extreme fragmentation + strong local autonomy
Italy	Mixed (public ownership dominant, PPP present)	Multi-level governance (ARERA + local authorities)	Regulated tariffs linked to investment plans	Complex multi-level regulatory system
Portugal	Mostly public (municipal/state systems)	Strong national regulator (ERSAR) + mixed management models	Regulated tariffs + benchmarking + performance monitoring	Regulatory-driven system with benchmarking
England (& Wales)	Mixed: private (England & Wales), public (Scotland)	Market-based regulation with an independent regulator (Ofwat) + public model in Scotland	Revenue-cap / price-cap regulation linked to investment cycles	Market-regulated system with a dual governance model

Table 14. Comparative Overview of Water Service Systems in Selected European Countries

Population	66.9m	83.0m	9.77m	19.53m	60.6m	10.3m	66.8m
Management Model	Municipal (direct/delegated)	Mixed; highly fragmented	Centralised ownership + municipal operation	Regionalised (43 ROCs) + private/local	Mixed; public dominant (~50%), PPP (36%), concessions (5%)	Public-dominant; multi-municipal + delegated	Privatised (England/Wales); public (Scotland/NI)
Tariff Model	Local setting, capped; social tools	Cost recovery + statutory review	Centrally set; frozen since 2013	Cost recovery; regulator approval	Multilevel; ARERA approval; full cost recovery	ERSAR oversight; mixed approval; cost recovery goal	Price caps set by regulators (Ofwat, etc.)
Regulatory Structure	Decentralised oversight	Local + federal framework	Central regulator (MEKH)	National regulator (ANRSC) + local role	Strong national regulator (ARERA) + local bodies	National regulator (ERSAR) + municipal role	Independent regulators (Ofwat, etc.)

Table 15. Comparative Governance and Tariff Structures in European Water Services[631]

The tables above do not simply describe different national systems; they show that there is no single way to organise water services within the EU. While all countries formally rely on public authorities for responsibility, we still observe different outcomes.

What we can observe is that ownership tells us very little on its own. Most of the systems are, in one way or another, publicly owned, yet they function in entirely different ways. The real differences emerge in governance and financing: who sets tariffs, who controls the system, and how investments are secured. Moreover, although cost recovery is formally recognised across all cases, its application is uneven. Accountability and transparency are not simply there in the system, they depend on how the system is actually put together.[632]

Hungary represents the most restrictive model, where tariff-setting is centralised and politically controlled, limiting both flexibility and financial sustainability. France moves in the opposite direction, with strong municipal responsibility and a high degree of organisational flexibility, allowing public and private operators to coexist within the same framework. Romania sits somewhere in between, combining regionalisation with continued fragmentation and a strong dependence on EU funding, which exposes the system's structural vulnerabilities.

[631] Author's own table based on: OECD (2015) *The Governance of Water Regulators*; EurEau (2017) *Europe's Water in Figures*; EurEau (2020) *The Governance of Water Services in Europe*.

[632] See more on sustainable financing and accountability: Pánovics, A. (2023) 'A fenntartható finanszírozás felelőssége – újabb lépések az Európai Beruházási Bank elszámoltathatósága érdekében', *Európai Jog*, 23(4), pp. 30–36.

Germany, despite its extreme fragmentation, operates within a stable legal framework because regulation is embedded in broader legal and economic controls rather than concentrated in a single authority. In Italy, the system is not defined by ownership, which remains largely public, but by its multi-level governance structure. This creates a more structured approach to cost recovery, but also a system that depends heavily on regulatory coordination.

Portugal is more clearly regulatory-driven than the other countries, with less emphasis on ownership and more on regulatory discipline. This system relies on benchmarking and performance monitoring. ERSAR also publishes information on municipal tariffs, including which municipalities provide social and large-family tariffs, while also monitoring the economic accessibility of water services. Governance mechanisms can operate across different ownership and management models.

The inclusion of the United Kingdom (Focusing on England and Wales) as a country to examine, despite its withdrawal from the EU, is essential. Moreover, as the UK system was originally shaped under the same EU framework, including the application of the WFD before Brexit, it does not come from a completely different starting point. Simultaneously, it allows us to see how the model develops once it is no longer constrained by EU rules, especially in how cost recovery and economic regulation are applied. In this sense, it shows the other side of the coin, where a system is built around private operators and strong economic regulation.

What these differences ultimately show is that the key issue is not whether water is public or private, but how the system is governed and financed. EU law may set common principles, but it does not produce convergence in practice. Instead, national systems translate these principles in very different ways. When it comes to balancing financial sustainability, environmental obligations and social considerations, they differ in many ways.

7.1.1. What We Can Observe?

Water services in Europe remain predominantly under public ownership, but from our standpoint, this alone explains very little. Across Hungary, Romania, France, Germany, Italy, Portugal and the United Kingdom, the real differences do not lie in ownership itself, but in how governance, financing, and regulatory control are organised in practice.

Hungary has a strong centralised model, as the 2011 Water Utility Services Act reorganised the sector by introducing a central regulator and concentrating tariff-setting powers at the governmental level.[633] While private participation had previously existed in cities such as Pécs

[633] Belenyesi (2014), p. 17.

and Kaposvár, the contracts were terminated with Suez, returning water management to public hands.[634] However, this return to public control did not resolve the underlying tension between affordability and financial sustainability. Tariffs have been politically constrained, effectively weakening the logic of cost recovery and shifting the burden onto the state. This creates a system that prioritises short-term affordability, but raises clear concerns regarding long-term investment capacity.

The Romanian system, however, is regionalised, with tariffs based on cost recovery principles and subject to regulatory approval. Yet this model remains dependent on EU funding, showing its clear vulnerability. While formally aligned with EU requirements, the Romanian system leaves limited room for flexible social correction, meaning that affordability concerns are addressed less through tariff design and more through external financial support. In this example, the EU orientation is both a strength and a weakness.

In France, public ownership at the municipal level coexists with a wide range of governance models, including delegated management to private operators such as Veolia and Suez.[635] Moreover, France has experienced a clear trend of remunicipalisation, most notably in Paris in 2010, after 35 years of private management.[636] This did not represent a simple rejection of private actors, but rather a reconfiguration of control. The French model shows that cost recovery is not applied in isolation, but embedded within a broader system that includes redistribution mechanisms and social instruments. This creates flexibility, but at the same time, other problems, such as reduced transparency.

Germany, on the other hand, presents a decentralised but stable system, where water services are predominantly municipal. Although highly fragmented, it is supported by strong legal frameworks, technical capacity, and long-term planning.[637] Efficiency remains high, with some of the lowest leakage rates in Europe, largely due to continuous reinvestment and effective public oversight. Cost recovery works in a more disciplined way, but only because

[634] Boda, Z., Scheiring, G., Lobina, E., Hall, D. (2008) 'Hungary: Social policies and private sector participation in water supply' in Chávez, D. (ed.) *Beyond the market: The future of public services*. London: Routledge, pp. 178–202, p. 193; Public Services International Research Unit (PSIRU) (2012) *Amiért a vízszolgáltatás közszolgáltatás: A privatizáció mítoszainak leleplezése*, p. 3.
[635] Hall, D., Lobina, E., Terhorst, P. (2013) 'Re-municipalisation in the early twenty-first century: Water in France and energy in Germany', *International Review of Applied Economics*, 27(2), pp. 193–214; Public Services International Research Unit (PSIRU) (2012) *Amiért a vízszolgáltatás közszolgáltatás: A privatizáció mítoszainak leleplezése*, p. 4.
[636] Hall, Lobina and Terhorst (2013), p. X; PSIRU (2012), p. 4.
[637] Public Services International Research Unit (PSIRU) (2012) *Amiért a vízszolgáltatás közszolgáltatás: A privatizáció mítoszainak leleplezése*.

the whole system is tightly structured around it. However, even here, we can observe that when costs are pushed too far onto users, issues of legitimacy and affordability can emerge.

In Italy, even though public ownership dominates, the system combines corporatised operators, independent regulation through ARERA, and tariff-based financing linked to investment planning. Both privatisation attempts and remunicipalisation have not led to a clear outcome, but rather to a system that is somewhat mixed, even inconsistent at times. What exists now is a hybrid model. Moreover, frequent legal and institutional changes make long-term investment difficult, and the fragmentation between national, regional and local levels often weakens implementation. Cost recovery, in this context, does not operate as a strict rule but more as a guiding idea, shaped and limited by political and social considerations.

In Portugal, the system formally relies on cost recovery, but it is continuously adjusted through regulatory oversight by ERSAR and through municipal implementation. Social tariffs exist, but their application varies. Portugal, therefore, does not resolve the tension between affordability and financial sustainability, but rather manages it, mostly through decentralisation, by shifting the problem to the local level.

The United Kingdom, particularly England and Wales, represents the most developed example of privatisation. However, even here, water services do not operate in a competitive market but as regulated monopolies under Ofwat supervision. Long-term evidence shows no clear efficiency advantage compared to public systems, despite access to advanced technologies. Instead, the system has become highly financialised, with significant portions of tariffs directed towards debt servicing and shareholder returns.[638] Cost recovery is achieved, but not always in a way that supports long-term investment or affordability. In this sense, the UK model does not simplify the system, but rather makes its limits more visible.

Comparative studies, including those conducted by the World Bank, consistently show no significant efficiency difference between public and private providers. What determines outcomes is not ownership, but the strength and design of the regulatory framework. Where regulation is weak or fragmented, private participation tends to lead to underinvestment, rising costs, and loss of transparency.[639]

The comparison of countries shows that EU water law establishes a shared framework, particularly through the WFD's cost-recovery principle. Hungary[640] limits cost recovery;

[638] Bayliss, Mattioli and Steinberger (2021); Buse and Bayliss (2022); Wackerbauer (2007), p. 102.
[639] Belenyesi (2014).
[640] See also: Szilágyi, J.E. (2014) 'A magyar víziközmű-szolgáltatók integrációja jogi nézőpontból', *Pro Futuro*, 4(1), pp. 144–162; Szilágyi, J.E. (2016) 'Current challenges concerning the law of water services in Hungary', *Lex et Scientia*, 23(1), pp. 70–82; Szilágyi (2018).

Romania applies it more rigidly; France redistributes it; Germany stabilises it through governance; Italy hybridises it; Portugal adjusts it; and England financialises it.

The tension between economic efficiency, environmental sustainability, and the right to water is not really solved by any single model. It is handled through the system's design. In the end, the key issue is not whether water services are public or private, but how control, responsibility, and financial risk are actually shared within the system.

The question is therefore not how to completely eliminate this tension, because in many ways this is not possible. Rather, the challenge is to recognise it and manage it in a way that does not sacrifice either access and affordability on one side, or the financial and environmental sustainability of the water system on the other.

7.2. Lessons Learned from the Selected Countries

What emerges from the comparison is not a single model to follow, but a set of tensions that never really disappear. What we learn is that (1) changing ownership does little, (2) governance is where systems hold or fail, (3) cost recovery never works in a pure form, (4) more money does not mean better infrastructure, (5) instability slows everything down, (6) affordability cannot be added later, and (7) the core tension remains no matter the model.

(1) The ownership of water services explains far less than it promises. Across all cases, water services remain largely public, at least formally. Even in the United Kingdom, often presented as the pure example of privatisation, the system does not function as a real market. It is a tightly regulated monopoly under Ofwat. France shows something similar in a different form, with public ownership coexisting alongside private operators like Veolia and Suez, without fundamentally altering the public nature of the service. The other countries make the same point from the opposite direction, because there, the ownership is predominantly public, yet it does not automatically confirm the efficiency or stability of the system. What this suggests is that changing ownership is often like changing the label on the bottle without touching what is inside. Not a fix of the problem, but just a shift in how it appears, while the underlying issues remain the same. Rather than a linear development, this follows waves of change, where each new model builds on, but does not eliminate, the problems of the previous one.

(2) The governance model of the water services is where the system either holds or starts to slip. Germany shows what happens when governance is structured, technical, and relatively insulated from short-term pressure. The system is fragmented, but it holds together because rules, monitoring, and planning are consistent. France distributes governance across levels,

creating flexibility, but also complication. Italy shows what happens when coordination weakens, as the system does not collapse, but it struggles to move forward. Decisions are taken, then reconsidered, then reversed, then modified. This creates a system that hesitates, and in doing so, delays investment and reform.

(3) Cost recovery is never applied as cleanly as it appears on paper, as it is hard to grasp and hard to incorporate without creating additional tensions. All systems formally rely on it, especially under the logic of the WFD, yet in practice, it is constantly adjusted. France spreads the costs more broadly, which softens their impact on users. Germany applies cost recovery in a more disciplined way, but this works mainly because the system is stable enough to carry it. Portugal keeps the principle, but adapts it through regulation and local implementation. Italy makes it even clearer that cost recovery is not a strict rule but is adjusted over time. The United Kingdom pushes this logic the furthest. Recovering costs does not necessarily improve the service itself. A growing share of tariffs does not go into infrastructure, but into financial structures. The principle is still there, but it is harder to see what it actually does. For example, people pay more, but this does not always mean better pipes, better service, or real improvements.

(4) The financialisation does not remove pressure on the water services, it redistributes it elsewhere. In England, the system does bring in investment, but it also makes things more complicated and creates long-term financial burdens. Italy reflects a softer version of this, where instability discourages investment rather than over-financialising it. In both cases, more money and financial arrangements are added on top, but the basic infrastructure problem is still there. It is just dealt with in a different way.

(5) Stability should not be a luxury, but a condition for the system to function at all. Water infrastructure operates over decades, and its resilience should be the basis. Italy shows what happens when the legal and regulatory framework shift is too often apparent, because here the investment can slow down, and even well-designed reforms struggle to take effect. On the other hand, as a good example, in Germany, where stability is achieved, problems are not fixed by it, but it gives the system time and space to deal with them. In this sense, water governance is less about constant reforms and more about keeping things in balance. Once that balance is lost, it is difficult, slow, and expensive to restore.

(6) Affordability is a main issue that needs to be addressed in water service provision. In the French example, social considerations are built directly into the system, with tariffs and redistribution working together. Portugal tries something similar but leaves more to municipalities, leading to uneven outcomes. The England example shows the limits of a system

in which affordability is not built into its structure from the start. What becomes clear is that affordability cannot be added later. If it is not built into the system from the beginning, it reappears as a problem somewhere else, through political pressure, non-payment, or delayed investment.

(7) All five systems are trying to reconcile the same contradiction of the water treated as a public good, and water services treated as capital-intensive infrastructure. One pulls towards accessibility, the other towards financial discipline. None of the models resolves the tension. France redistributes the tension, Germany stabilises it, Italy struggles to manage it, Portugal shifts it to the local level, and the United Kingdom exposes it more evidently than the others. In the end, the comparison does not really point to a solution, but to a limit. The system can be pushed in one direction or another, but it cannot be pushed in all directions at the same time. What comes out of this comparison is not a model we can copy, but a limit we cannot escape. No system really resolves the basic contradiction of water. It is at the same time a public good and a service that needs constant, expensive investment. If we push one side too far by keeping prices low or ensuring full cost recovery, we will inevitably weaken the other. This means that reform should not try to "solve" this tension, because it cannot be solved. It has to be managed, and managed openly. Relying on one tool, like tariffs, is simply not enough. If costs are shifted entirely to users, affordability becomes a problem. If they are not, the investment suffers. The system needs correction mechanisms, such as social protection, public support, and other sources of financing, to keep it in balance.

What we can say is that systems that are too centralised tend to lose flexibility. Systems that are too fragmented struggle with coordination and accountability. What seems to matter is the balance between central control and local space to respond to real conditions. In this sense, the system does not evolve towards a solution, but moves through waves of adjustment, where the problem is continuously reshaped, but never fully resolved.

The tension cannot be resolved because it is structural. Water is both a basic need and a costly service, and the system cannot fully satisfy both logics at once.

7.3. The Case of Non-Payment in the Selected Countries

Article 9 of the WFD and the problem of non-payment are closely connected, as the provision requires Member States to introduce pricing policies and move towards cost recovery, yet remains silent on what to do when users cannot pay. It sets the direction, but it does not determine the outcome. Costs should be recovered through tariffs, in practice, this cannot be fully applied. If cost recovery is enforced strictly, it risks cutting people off from an essential

service, as we will see below in some cases. Because of this, other Member States adjust the system, and they introduce disconnection bans, social measures, or simply absorb the losses through public funding. Whether the state, the operator, or other users react and cover the payment is the real debate, and puts a division between how States truly view water service provision as a right or as a service for users. And this is where the differences between systems appear, not in ownership, but in how they deal with the limits of payment.

In countries like France[641] and England,[642] households cannot be disconnected from water services in their main residence. This means that access is protected even in situations of non-payment.[643] Moreover, these systems rely more on social tools, such as social tariffs or support schemes, to deal with affordability problems. The approach is simple: the service continues, and the system tries to adjust around the user.

In contrast, countries such as Germany[644], Portugal[645] and Romania[646] allow disconnection if bills are not paid, although certain procedures must be followed.[647] In these systems, access depends more directly on payment, and social protection is either limited or applied only in specific cases. Romania is a clearer example here, where disconnection is legally allowed, and social tariffs are not in place, reconnections can take time, even if the law allows some forms of support. Here, operators are allowed to disconnect users if they fail to pay within 30 days. Through court action, the debt recovery mechanism allows operators to deal with financial difficulties more quickly.[648] This is followed by prior notification. In Romania, reconnection to the system can also hinder the right to water. In Bucharest, only 27% of disconnected users request reconnection, with an average reconnection time of around 66 days. In Constanța, the average period between disconnection and reconnection is even longer, at about 89 days.[649]

Hungary[650] takes a slightly different path,[651] as disconnection is allowed, but the operator must still ensure a minimum amount (20 litres per person per day) of water for basic needs. This creates a kind of compromise: the service can be restricted, but not entirely removed. Still,

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[641] France (2013) *Law No. 2013-312 (Brottes Law)*.
[642] United Kingdom (1999) *Water Industry Act 1999*.
[643] EurEau (2016) *Access to water and measures in case of non-payment*, pp. 15, 42–44.
[644] The legal framework is primarily contractual, based on general civil law and water supply contracts, supported by public law under the Federal Water Act (Wasserhaushaltsgesetz, WHG). Disconnection for non-payment is legally permitted, but social welfare authorities may intervene to cover costs for vulnerable households.
[645] Portugal (1996) *Law No. 23/96*, as amended.
[646] Romania (2006) *Law No. 241/2006*; Romania (2006) *Law No. 51/2006*.
[647] EurEau (2016) *Access to water and measures in case of non-payment*, pp. 16, 31–34.
[648] Romania (2006) *Law No. 241/2006*, §32(1).
[649] EurEau (2016) *Access to water and measures in case of non-payment*, p. 33.
[650] Hungary (2011) *Act CCIX of 2011 on water utility services*; Hungary (2013) *Government Decree No. 58/2013*, minimum supply guarantees.
[651] EurEau (2016) *Access to water and measures in case of non-payment*, pp. 18–19.

without social tariffs, the system mainly relies on delayed payments or instalments, which do not really solve affordability issues in the long run. Italy[652] stands somewhere in between. Disconnection is possible, but there are safeguards, a minimum supply in some cases, and a developing system of social tariffs.[653] It shows a move toward a more balanced approach, even if it is not fully consistent yet.

What becomes clear is that the main difference between countries is not ownership or structure, but how they deal with governance and issues like people who cannot pay. Some systems try to prevent exclusion from the start, while others allow it and then try to fix the situation afterwards. It is at this point that legal guarantees are either upheld or exposed, depending on whether water actually continues to flow.

[652] Water services are regulated under national framework legislation and regulatory oversight by ARERA (Autorità di Regolazione per Energia, Reti e Ambiente). Disconnection is permitted under regulated procedures, but essential supply and vulnerable users are protected, and social tariffs for economically disadvantaged users have been introduced since 2015.
[653] EurEau (2016) *Access to water and measures in case of non-payment*, pp. 22–23.

7.4. Explanation of Indicators

Country	Regulatory Independence and Institutional Capacity	Enforceability of Standards	Participation & Transparency	Affordability & Social Protection	Environmental Safeguards	Resilience Duties	Total (/12)
Hungary	1 – Central regulator; limited autonomy	1 – Standards exist; uneven enforcement	0 – Limited participation and transparency	0–1 – No structured social tariff; administrative support	1–2 – Stable performance; formal compliance	0–1 – No explicit framework	**4–6/12**
Romania	1 – Formal regulator; limited capacity	1 – Standards exist; inconsistent enforcement	1 – Limited participation mechanisms	1 – Partial affordability measures	1 – EU-based safeguards; implementation gaps remain	1 – Emerging framework	**6/12**
France	1–2 – No central regulator; strong municipal role	2 – Strong and consistent enforcement	2 – High local transparency and accountability	1–2 – Local affordability tools	2 – Strong safeguards and consistent implementation	1 – Locally variable	**9–10/12**
Germany	1–2 – No central regulator; decentralised system	2 – Strong local enforcement	1 – Limited formal participation	1 – General tariff-based approach	2 – Strong safeguards and consistent implementation	1 – Implicit, not explicit	**8–9/12**
Portugal	2 – Independent national regulator	2 – Strong monitoring and enforcement	1–2 – High transparency; limited participation	2 – Structured national tools	2 – Strong safeguards and monitoring framework	1–2 – Planning-based	**10–11/12**
Italy	1–2 – Strong regulator; fragmented system	1–2 – Uneven regional enforcement	1 – Limited and uneven participation	1 – Fragmented measures	1–2 – Strong legal framework; uneven implementation	1 – Limited implementation	**7–8/12**
England (& Wales)	2 – Independent regulator	1–2 – Strong framework; uneven outcomes	1–2 – Formal consumer involvement; effectiveness still developing	1–2 – Established but fragmented support mechanisms	1–2 – Strong legal safeguards; mixed performance in practice	1 – Formal duties; gaps in practice	**7–11/12**

Table 16. Indicators.[654]

Where the available evidence does not justify assigning a single value, a range is used to reflect variation across regions, operators, or the distinction between formal legal requirements and their implementation in practice. The aggregate scores should not be understood as a ranking of national water service systems or as a quantitative measurement of resilience. They

[654] Author's own compilation based on OECD (2015a) Principles on water governance; OECD (2016) Water governance in cities; OECD (2026) Water governance for climate resilience in Hungary; EurEau (2020) The governance of water services in Europe; Farnault, A., Leflaive, X. (2024) Cost recovery for water services under the Water Framework Directive, OECD Environment Working Papers; World Bank (2018) Romania water diagnostic report: Moving toward EU compliance, inclusion, and water security; national regulatory reports, including ANRSC (Romania), ERSAR (Portugal), Ofwat (United Kingdom), ARERA (Italy), and the National Audit Office (United Kingdom, 2019), as well as reports of the Cour des comptes (France); and EU legal frameworks, in particular Directive 2000/60/EC and Directive (EU) 2020/2184.

are used as a comparative analytical tool to make visible the relative presence and implementation of the governance characteristics identified in this dissertation. The scores therefore indicate patterns within the selected legal and institutional dimensions, rather than the overall quality or performance of a national water system.

What can be observed from the comparison is that higher scores do not consistently correspond to a particular ownership model. Instead, the higher-scoring systems tend to combine several governance characteristics, regardless of whether service provision is predominantly public, private, mixed, centralised, or decentralised.

A higher score is indicated in some cases, like France, because the governance architecture is consistently strong, with municipal oversight and detail-oriented concession frameworks. Here we can observe effective monitoring systems, both public and private models and governance that is structurally stable. Slight variation occurs at the local level, but all in all, it's structurally sound. Another high score is attributed to Portugal. This is granted not because the system is "perfect", but because all indicators reflect a system-wide coherence. A unified framework can be observed here. Italy, with its mid-scoring, reflects a fragmentation of governance, not a lack of it. With ARERA, these frameworks have strengthened, but the implementation remains fragmented across regions. The perspective of England and Wales introduces a different type of imbalance. Regulatory independence is strong, while outcomes across the other indicators are more mixed. Affordability mechanisms are well established, including social tariffs and other forms of targeted support, but they remain fragmented between providers.[655] Consumer involvement has also been strengthened, particularly through the new Ofwat requirements introduced in 2026, although their practical effects are still developing.[656] This provides an important contrast, showing that a highly developed regulatory system does not necessarily result in equally strong performance across all dimensions of governance.

Regarding environmental safeguards and compliance, a relatively strong legal framework can be observed, particularly through the transposition and implementation of EU water legislation. However, the existence of formal safeguards does not necessarily correspond to

[655] Participation and transparency mechanisms have recently been strengthened in England and Wales. From 1 April 2026, Ofwat's Consumer Involvement in Decision-Making Rule requires water companies to establish arrangements for understanding consumer views and taking them into account in relevant decision-making. However, as these requirements are relatively recent, their practical impact cannot yet be fully assessed. For this reason, the existence of formal participation mechanisms is recognised, while a higher score would require more evidence of their implementation in practice.

[656] Ofwat (2025) *Decision on Ofwat's Consumer Involvement Rule*, November 2025, p. 12; Ofwat (2026) 'New rules on water company executives' integrity and consumer involvement come into force', 1 April 2026; Ofwat (2024) *Summary of Water Companies' Published Plans for Affordability for 2025–30*, December 2024, pp. 3–9.

equally consistent implementation and enforcement in practice. This distinction between the legal framework and its practical application justifies a score of 1–2.

7.4.1. Explanation of Indicators in Hungary

Hungary presents a model of water service regulation that is centralised and state-led.[657] Since 2011, tariff-setting powers and strategic decisions have been consolidated under the authority of the central government. On the one hand, this provides stability in pricing by ensuring uniformity across the sector; on the other hand, it limits the scope for a fully autonomous regulatory authority to serve broader objectives and to foster discourse between consumers and operators. Within the scorecard framework, Hungary is therefore rated at an intermediate level for regulatory independence (score 1).

Enforceability of service standards is also positioned at a mid-level (score 1). This mid-level score is given as a result of detailed technical and service-quality requirements, and administrative complaint mechanisms, although remedies for consumers remain limited in practice. Participation and transparency mechanisms are modest, with local governments and associations occasionally contributing to consultations, this is the causatum of score of 0–1. Affordability measures are not standardised nationally, but operators may allow payment in instalments or delayed payment for households if needed. This works as a case-by-case assessment. Based on these, we allocate the 0–1 score. Regarding environmental safeguards, we observe a more robust approach through EU directives transposed into domestic law, though enforcement can vary. Resilience duties are not codified in a single legal framework, yet we can find state infrastructure programmes, often co-financed by the European Union, to support continuity of service. This ambiguity results in a score of 0–1.

7.4.2. Explanation of Indicators in Romania

Romania illustrates a different side of the same problem. Here we can find a hybrid governance structure. Romania relies heavily on EU funding and is distinctly shaped by post-accession reforms. The ANRSC functions as the central regulator. While formally autonomous, its effectiveness has been constrained by limited resources and capacity, residuum of the score 1 for regulatory independence.

[657] More on that problem, see: Pump, J. (2016) 'Jogági gubancok', *Közjogi Szemle*, 9(3), pp. 3–15.

The enforceability of service standards is anchored in Law No. 241/2006 on water supply and sewerage services, which establishes obligations regarding the quality, continuity, and safety of water provision, but we still observe an uneven implementation. The regional operators are subject to oversight, but sanctions and remedies remain moderate. This mixed picture places Romania at a mid-level score of 1 for enforceability.

Participation and transparency are somewhat stronger than in Hungary. The creation of Regional Operators, typically owned by inter-municipal associations, establishes that local authorities are represented in decision-making processes. However, the extent of citizen engagement still remains limited, justifying a score of 1 rather than a higher ranking.

Affordability mechanisms exist only in a partial and indirect form, as there is no national social tariff, this gap is partially addressed through targeted support schemes, and the EU cohesion funding reduces the proportion of infrastructure investment that must be financed exclusively through tariffs and other domestic sources, although this does not necessarily translate into lower tariffs for consumers. While these measures do not amount to a comprehensive affordability framework, they provide some relief, justifying a score of (1). Environmental safeguards are more consistently applied, largely because EU directives and funding require the country to meet stringent conditions set by the EU. For this reason, Romania is scored 1.

Finally, resilience-related obligations are beginning to take shape in Romanian law and practice, a significant change in the Romanian framework. Law No. 241/2006, particularly in its amended form, introduces elements of planning, service continuity, and risk management. While these do not yet amount to a fully articulated resilience framework, they reflect a gradual shift in that direction, also initiated by the EU conditionality and compliance requirements, justifying a score of 1.

8. The Limits of Privatisation

If ownership were decisive in shaping water services, then privatisation would be expected to resolve their core problems of affordability, long-term investment in infrastructure, and financial sustainability. However, in practice, these issues remain.

In practice, privatisation is frequently associated with higher tariffs. A study from France found that, after controlling for factors such as population, water prices under private operators

were around 16% higher than under public provision.[658] In the United Kingdom, water prices increased significantly following privatisation, by around 40% more than other prices over a period of 17 years, even though operating costs remained relatively stable.[659] This suggests that higher revenues do not necessarily lead to better infrastructure or improved service quality.

Privatisation does not create a competitive market, as it would suggest. Water services remain natural monopolies, and competition is largely absent. In the United Kingdom, private providers operate under licences and are not exposed to continuous competitive pressure. In France, large operators such as Veolia and Suez have historically structured their activities in ways that limited competition rather than encouraged it. This reinforces the idea that privatisation replaces public monopolies with regulated private ones, rather than creating functioning markets, competition for the market, not in the market.[660]

The financial structure of privatisation has also come under scrutiny, especially after many negative examples around the world. In the United Kingdom, privatisation involved significant public financial intervention, including the assumption of debts and additional incentives, resulting in a net loss for the state.[661] Financial burden is not removed, but redistributed in other forms.

From a legal perspective, this connects directly to the logic of cost recovery. While international frameworks recognise a human right to water, they also allow for cost recovery and, under certain conditions, disconnection for non-payment.[662]

At the global level, institutions such as the International Monetary Fund and the World Bank have supported water sector reforms through conditional lending and structural adjustment programmes. Between 1995 and 2015, the International Finance Corporation provided over $75 billion in financial support for water and sanitation projects.[663] These reforms were conditioned by the requirement of full cost recovery, placing the burden of operational and investment costs on users.[664]

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[658] Hall, Lobina and Terhorst (2013); Public Services International Research Unit (PSIRU) (2012) *Amiért a vízszolgáltatás közszolgáltatás: A privatizáció mítoszainak leleplezése*, p. 5.
[659] Public Services International Research Unit (PSIRU) (2012) *Amiért a vízszolgáltatás közszolgáltatás: A privatizáció mítoszainak leleplezése*, p. 5.
[660] Lobina, E., Weghmann, V., Nicke, K. (2021) *Water remunicipalisation in Paris, France and Berlin, Germany*. London: Public Services International Research Unit (PSIRU), University of Greenwich.
[661] Public Services International Research Unit (PSIRU) (2012) *Amiért a vízszolgáltatás közszolgáltatás: A privatizáció mítoszainak leleplezése*, p. 7.
[662] Sternik (2022), pp. 521–522.
[663] Sternik (2022), p. 522.
[664] Sternik (2022), p. 522.

Cases external to the EU, like Flint, Michigan, also underline these tensions. Following a change in water source and the involvement of private actors in monitoring and treatment, residents were exposed to contaminated water, while accountability remained limited.[665] But we can revisit the Cochabamba Water War, where water became a symbol rather than merely a commodity.[666] While not representative of all cases, such examples highlight the risks associated with weak regulatory frameworks.

As an alternative, PPPs are often presented as a compromise between public control and private investment. Promoted in particular by international financial institutions, they have become a common model in water services.[667] However, their effectiveness remains questionable, as they may introduce elements of accountability and efficiency, but they also raise concerns about long-term financial commitments, reduced democratic control, and concentration of market power.[668]

In practice, most water privatisations take the form of PPPs, where infrastructure remains public while service provision is transferred to private operators.[669] In Europe, large multinational companies dominate the sector, raising concerns about competition, pricing, and governance.[670] Empirical evidence suggests that while some PPP projects have been successful, their overall contribution remains limited.[671]

Moreover, privatisation also affects the relationship between citizens and public services. It can distance citizens from decision-making processes and reduce their role in shaping public services, thus becoming mere users of the service.[672] A broader assessment of privatisation should therefore not focus only on efficiency and costs, but also on how it affects people's ability to participate and their relationship with the system.[673] Critics such as Martha Minow have argued that privatisation may undermine public commitments to equality and non-discrimination.[674]

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[665] Ramos (2017), p. 189.
[666] Razavi, N.S. (2019) 'Social Control and the Politics of Public Participation in Water Remunicipalization, Cochabamba, Bolivia', *Water*, 11, 1455.
[667] World Bank (2021) 'About Public-Private Partnerships'; Marin, P. (2009) *Public-Private Partnerships for Urban Water Utilities: A Review of Experiences in Developing Countries*. Washington DC: World Bank.
[668] Leigland, J. (2018) 'Public-Private Partnerships in Developing Countries', *World Bank Research Observer*, 33, p. 108; van den Berge, Boelens, and Vos (2020), pp. 56.
[669] van den Berge, Boelens, and Vos (2020),
[670] Hall and Lobina (2004).
[671] Marin (2009), p. 8.
[672] Dorfman and Harel (2016), p. 402.
[673] Dorfman and Harel (2016), p. 402.
[674] Minow (2003), p. 1230.

This does not mean that private participation must be entirely excluded. In situations of financial constraint, hybrid or partial models can be beneficial. However, these require strong legal frameworks, transparent procedures, and clear allocation of responsibilities.[675] Without such safeguards, the risks associated with privatisation tend to reappear.

By looking at privatisation, it becomes clear that ownership alone does not determine the outcomes of water service provision. Even where services are private, they remain monopolistic, heavily regulated, and dependent on public frameworks. Moreover, the expected benefits, such as efficiency or competition, are not consistently realised across examples.
If privatisation does not resolve the problem, and it openly does not, then the focus has to shift to governance, financing, and legal design.

9. Concluding Remarks on the Implications for Human Rights in Access to Water

The terms “consumer” or “user” are commonly used instead of " citizen " in the cases of essential services like water.[676]

Water is viewed as a commodity under international human rights law; accessible and affordable water is the goal, but not the necessity of being free of charge. [677] This perspective ties into the importance of sustainable water management. [678]
Throughout the research, the terms “consumer” or “user” were widely used. The latter term appears almost naturally, especially in legal and economic contexts. But it is not neutral. It shifts the focus away from people as rights-holders and places them in a more functional, almost transactional role within the system. A “user” pays, consumes, and participates in a service. A citizen, or simply a person, has rights that go beyond that relationship. The relation between the two is clear, but how and where we use them can give or take rights away, not directly, but as we conceptualise them.

It is difficult to avoid this terminology because it is deeply embedded in legislation and regulatory frameworks. There is no easy alternative that fits within the existing legal language. Still, this does not mean that the term should be accepted without reflection. Behind every “user” there is a person whose access to water is not only a matter of service provision, but also of dignity and rights. This sets apart how we view the “user” or “consumer” and citizen.

[675] Sternik (2022), p. 535.
[676] Donnelly, C. (2010) ‘Positive Obligations and Privatisation’, *Northern Ireland Legal Quarterly*, 61, p. 212.
[677] Sternik (2022), p. 532.
[678] de Albuquerque, C. (2014a) Realising the Human Rights to Water and Sanitation, p. 35.

The point is not to replace the term or use it cautiously, but to remain aware of what it hides. The risk is that, by speaking only in terms of users, the discussion becomes too technical and too financial, and loses sight of the human dimension. In the end, water services are not just systems to be managed, but services that exist for people by people, even if we address them as users.

Moreover, the parallel between income levels and the quality of water access exists, which can further hinder access to water for the "users". In rural areas, still eight out of ten people are in deficit of their basic water needs. This, coupled with water scarcity, puts them at the highest risk. [679]

But who should bear the costs of water in these areas?[680] Where access to water services is low.

The financial burden of managing water services is often greater than public utilities can handle on their own, without proper governance; here, they opt for private operator help as well. [681] However, in most cases, the private operator is not putting on their agenda the protection of human rights and society. This can create discrepancies between the initial financial burden elevation and the greater good of society, the sustainability of water services and their long-term resilience.

The public operator has the greater responsibility to address access to water for their citizens under domestic law. They may come under international and societal pressure to adopt legislation that ensures this right. This does not mean that private operators shouldn't be used; they should be under the watchful eye of the government. Collaboration can resolve most of the issues resulting from the privatisation of water services, if the country has introduced clear mechanisms to supervise these. The idea is that privatisation or public control can both work for and against the public good; the governance of the water services is the key to succeeding in both ways.

There are robust safeguards implemented in some countries to protect the right to water. In Slovenia[682] The right to water, access to water, has been codified and legally protected. Still, recognising this right at the state level does not by itself ensure equal access to water services for everyone.

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[679] World Health Organization (WHO), UNICEF (2019) '1 in 3 people globally do not have access to safe drinking water'.
[680] Sternik (2022), p. 533.
[681] Sternik (2022), p. 533.
[682] Constitution of Slovenia, Article 70A, states that "every citizen of Slovenia has the right to drinkable water, which is deemed as a public good managed exclusively by the state".

The provision of water is financially burdensome for public or private operators. In the case of private operators, however, this can fall back on the users, as the operator tries to support itself, while in public operation, there can be national safeguards, sparing the citizen. [683]

From a human rights aspect, access, affordability, and water quality are the most important aspects to look at. From both ownership models, we can pinpoint problems, the private sector can hide more problems. Water privatisation can have mixed effects on access to services. In some cases, more investment improves infrastructure and access. But at the same time, private operators tend to focus on areas that are more profitable, so smaller or poorer communities can be left behind.

This argument relates to the affordability problem, as privatisation often entails tariffs and user fees to cover costs. That can help finance the system, but it also means higher prices. For low-income households, this can become a real problem, and in some situations, it leads to water poverty.

There is also the issue of quality. Private companies may invest in improving treatment and distribution, which can raise standards. But because they are profit-oriented, there is always a risk that cost-cutting affects quality or safety over time.

Marginalisation of vulnerable groups, especially low-income households and rural populations, can result from both affordability issues and limited access. Private operators may prioritise urban areas with higher returns, leaving these groups with weaker or no access to safe, affordable water.

Moreover, if privatisation leads to prices that people cannot afford, or to situations where certain groups are effectively excluded from access, it may amount to a violation of the right to water.

Across all three categories, accountability and public control are also important to mention. Private companies are generally less directly accountable to the public than state authorities. When services are privatised, it can be harder for communities to raise concerns, challenge service quality, or address affordability and access issues.

Moreover, the state may lose some control over a basic resource. This can limit its ability to effectively guarantee access to safe water as a right. Defining responsibility in such situations is not always straightforward, but it remains necessary.[684]

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[683] Sternik (2022), p. 539.
[684] Wassersug, S.R. (1994) 'Limiting Environmental Liabilities in Privatisation in Central and Eastern Europe', *Environmental Claims Journal*, 6, p. 397.

Lack of transparency in operations, private or public, is also a major factor in not fulfilling the right to water. Financial and proprietary information can be confidential in the cases of privatisation, and overseeing them is challenging for the regulatory authorities. Enforceability, thus, becomes a problem.

The big debate between public and private ownership of water services does not respond to the question of human rights and the right to water alone. Just picking one does not determine automatically whether the right is effectively realised or not. Often, scholars frame this debate as if public ownership is the answer, since public operators have more tools to achieve this. But the issue is not that simple. The UN Committee on Economic, Social and Cultural Rights in General Comment No. 15, places a clear obligation on the state to ensure access to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic use. This obligation remains, even if water services delegate the operation to private operators.

Ownership, however, still has an impact on how these obligations can be fulfilled. In systems based on public ownership, the state retains direct control over tariffs, investment decisions and service standards. This can make it easier to align service provision with social objectives. Moreover, public ownership does not in itself guarantee effective delivery. If the governance is weak, the realisation of the right to water is hindered.

In contrast, private participation introduces a different set of problems. While private operators may bring efficiency gains or additional investment, they are also driven by profit considerations. This creates a potential tension between the affordability of and access to water, and its cost recovery incentives. This affects particularly the low-income or geographically remote communities. In such cases, the state moves from being a direct provider to more of a regulator, and whether the right to water is actually ensured depends on how strong the regulation, contracts, and enforcement are.

The connection between ownership and human rights, therefore, lies not in ownership as such, but in governance. Where regulatory frameworks are weak, fragmented or politically constrained, both public and private systems may fail to secure access, affordability and quality. Opposing this, a well-designed and effectively enforced governance framework can ensure that the right to water is protected across different ownership models.

9.1. The need for intedisciplinarity in water law

"Public service is a complex notion, subject to evolution… an essential notion for administrative law,"[685] but not only. Water law, and in particular water services law, is often treated as a niche field, even though it encompasses multiple branches of law, from administrative law to broader concepts such as the right to water and other human rights. This classification is convenient, but it no longer reflects our reality, given the fast pace of changing demands and the growing social pressure for better protection. This is why water is not governed within a single legal framework, and grasping the topic is difficult to achieve and to narrow down without missing important parts of it. Treating water services law as a subfield risks missing how it actually functions.

Water services law today sits at the intersection of law, economics, engineering, ecology, and social policy. In this dissertation, we attempted to reflect on the many aspects that can be governed by law; however, it must be acknowledged that without this broader perspective, legal analysis risks becoming formally coherent but detached from practice. Interdisciplinarity in this field is therefore a structural necessity.[686]

The difficulty of tackling this topic lies in the nature of water itself. Water is at the same time a natural resource, a public service, a strategic infrastructure input, and a precondition for the enjoyment of fundamental rights.[687] Legal systems, however, are built on categories. Environmental law protects ecosystems. Public law regulates services. Economic law structures markets. Human rights law defines entitlements. However, water services seep through these categories. The limits of water governance in the EU do not arise only from external pressures, and by focusing only on these, the law again lags behind.

In moments of stress, such as drought, inconsistent governance, poor implementation of water restrictions, or cut-offs due to non-payment, the aid that law can provide for such an important factor for human survival becomes limited. A drought, at first categorised as an environmental issue, can quickly turn into an administrative one, once it affects access to drinking water. A tariff increase is not just an economic decision when it directly impacts affordability.[688] Failure to invest in infrastructure goes beyond a governance problem when it leads to unsafe water and public health risks.[689] In these situations, strictly doctrinal reasoning

[685] Andrei and Papuc (2018), p. 172.
[686] Edelenbos and Teisman(2011), pp. 5–30.
[687] United Nations General Assembly (2010) *The Human Right to Water and Sanitation*, A/RES/64/292.
[688] Bayliss, Mattioli and Steinberger (2021).
[689] European Commission (2020) *PESETA IV – Water Resources Report*.

reaches its limits. By forcing water into separate legal compartments, we can overlook its function as a continuous system.

This becomes more understandable when we consider the position water occupies across multiple policy areas. If we look at the logic of the SDGs, water appears not as one objective among others, but as a condition underlying many of them.[690] In illustrations of the SDGs, we often see water placed at the centre (SDG 6), with the others building around it. Even SDGs that are difficult to imagine as connected to water, such as gender equality, can bear clear relations to it.[691] It is linked explicitly or implicitly to all 17 SDGs, which means that action in this field has effects across different levels, from the individual to society and the environment.[692] For example, improving sanitation not only protects public health, but also supports education, as children are more likely to attend school, and contributes to environmental protection by reducing pollution of water sources. Moreover, failures can have cascading effects, from health risks to environmental degradation. This shows that water and sanitation systems function as interconnected structures, where an intervention in one area produces effects in others.

However, legal obligations are only meaningful if they can be implemented within existing infrastructure. Standards on water quality, service continuity, and leakage reduction are often set without sufficient regard for the physical condition of networks.[693] This can create a gap between what the law requires and what systems can deliver.

In our findings, we can conclude that EU water legislation, including the WFD, presupposes a certain level of system capacity across Member States.[694] However, in practice, compliance problems often do not reflect a lack of legal commitment, but structural limitations, as can be seen in the Romanian example. Moreover, political influence can also affect water services, especially when the balance between affordability and full cost recovery is out of balance.

What we want to underline is that approaching water services from an interdisciplinary angle does not require lawyers to become engineers, or any other professionals who may need to be involved. Simply put, it requires recognising that legal norms operate within physical

[690] United Nations General Assembly (2015) *Transforming our world: the 2030 Agenda for Sustainable Development*, A/RES/70/1.
[691] Kayser, G.L., Rao, N., Jose, R. and Raj, A. (2019) 'Water, sanitation and hygiene: measuring gender equality and empowerment', *Bulletin of the World Health Organization*, 97(6), pp. 438–440.
[692] Parikh, P. et al. (2021) 'Synergies and trade-offs between sanitation and the Sustainable Development Goals', *UCL Open Environment*, 3.
[693] OECD (2015a) *Principles on Water Governance*.
[694] Directive 2000/60/EC, Recitals 1, 18, 19 and Articles 4 and 9.

systems. We need to allow discussion and transparency in our water governance. This is also reflected in empirical research, as studies on resource governance show that systems with meaningful local participation tend to be more resilient and adaptive than purely top-down models.[695]

Moreover, tariffs are often presented as technical instruments intended to ensure cost recovery. EU water law incorporates economic concepts such as cost recovery and the polluter-pays principle,[696] But their implementation can be legal and political. When applied without adjustment, they can conflict with affordability, especially in Central and Eastern Europe.[697] Affordability, thus, goes beyond legal interpretation. This is particularly relevant in light of the growing recognition of the human right to water and its increasing political articulation within the EU.[698]

The strongest argument for interdisciplinarity, however, lies in the future-oriented nature of water law. Water regulation is not limited to present use, because we need to include the rights of future generations as well.[699] Water systems are exposed to multiple pressures from agricultural overuse, industrial pollution, ageing infrastructure, and climate change.[700] These challenges do not emerge within a single discipline, and they cannot be addressed through one alone.

Climate change, in particular, challenges legal frameworks built on predictability and stability. This is where interdisciplinarity becomes a matter of legal resilience. Law cannot model hydrological change, but it can translate scientific knowledge into obligations through planning requirements, investment duties, and adaptive governance mechanisms.

This perspective ties into the importance of governance of water services. Focusing solely on ownership, whether public or private, is insufficient to address these issues. While ownership matters, it does not determine outcomes on its own. Across Europe, water services have undergone cycles of privatisation, remunicipalisation, and centralisation, demonstrating that changes in ownership alone do not resolve underlying problems.[701]

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[695] Emer, C. et al. (2026) 'Local knowledge enhances the sustainability of interconnected fisheries', *Journal of Applied Ecology*.
[696] Directive 2000/60/EC, Art. 9.
[697] OECD (2026) *Water Governance for Climate Resilience in Hungary*.
[698] European Commission (2014) *Right2Water Communication*, COM(2014) 177 final.
[699] Weiss, E.B. (1989) *In Fairness to Future Generations: International Law, Common Patrimony, and Intergenerational Equity*. Tokyo: United Nations University.
[700] Swyngedouw, E. (2007) 'Dispossessing H2O', in *Neoliberal Environments*; European Commission (2020) *PESETA IV Report.*
[701] European Federation of Public Service Unions (EPSU) (2012) *PSIRU water report (Hungary)*.

Governance includes regulatory capacity, enforcement, transparency, participation, and mechanisms for affordability.[702] Understanding governance requires going beyond legal form and engaging with insights from political science and public administration. The key question is not only who owns the system, but how it functions under pressure.

Thus, interdisciplinarity is not an addition to legal analysis; it is a condition for it to stay relevant.

VIII. De lege ferenda

This dissertation began with a fairly simple question: What is it that actually makes water services resilient? Is it mainly about who owns the system, or does it depend more on how it is governed?

What emerges from the analysis is that ownership, on its own, does not really explain the outcomes. Across Europe, public, private, and mixed arrangements all exist, yet they lead to quite different results. This supports the first hypothesis: ownership does not move in neat cycles or simply return to earlier forms. Rather, it tends to shift in stages, where each phase brings certain changes, but many of the underlying problems continue to persist.

What really seems to make the difference between the examples is how governance works in practice. The comparison shows that resilience depends on how the system is actually organised: how decisions are taken, how financing is put together, and whether accountability mechanisms really function. It does not come from picking the "right" or "ideal" model, but from how the system is set up to deal with tensions over time. This supports the second hypothesis, that governance, not just ownership, shapes the capacity of water services to respond to social, economic, and environmental pressures.

The comparison between Hungary and Romania shows that both systems follow the broader European developments, but they still differ. Hungary has a strong centralised model, which reinforces control, but also brings financial limits to it. Romania relies more on regionalisation and external funding, which helps investment in the water services, but makes coordination more difficult and is conditioned by the external lenders. These suggest that similar pressures do not lead to the same results, and ownership structure is secondary to governance.

The wider European comparison through the experiences of France, Germany, Portugal, Italy, and the United Kingdom also leads us to the same conclusion. No all-encompassing ideal

[702] EurEau (2020) *The Governance of Water Services in Europe.*

model could be identified; thus, some countries exemplified good practices, and a closer relation to the governance model led to overall better, more resilient water services. We observed that systems that work relatively well tend to combine independent regulation, enforceable service standards, a certain level of transparency, some form of public involvement, and measures on affordability and environmental protection. These answer the third and fourth research questions: resilience seems to be linked to these governance mechanisms rather than to ownership, and comparison makes these patterns visible despite national differences.

Moreover, we can observe that EU law has influence over the systems, even if not always directly, through environmental obligations under the WFD, quality requirements under Directive 2020/2184, and broader human rights. These all set certain limits within which Member States can operate their water services. The problem is that similar obligations are implemented in quite different ways in the Member States. This answers the fifth research question: EU law structures national choices, but it does not fully determine how outcomes look in practice.

Against this background, a more structured legal approach would be justified. The European Union does not need to regulate ownership, and it should not. Instead, it should focus on governance. A Union-level instrument could define minimum conditions for how water services are organised in practice, without interfering with Member State choices on ownership.

Such a framework should and would not impose a single model of ownership, but would set limits regarding the governance. The framework would require a clear separation between policy-making, regulation, and service provision. Also, it would ensure independent oversight of the Member States by introducing transparent and accountable pricing, and establishing enforceable obligations, with targeted social measures to protect affordability. In doing so, this would translate the findings of this dissertation into legal form, not by resolving the tension between affordability and financial sustainability, but by structuring how it is managed. As we already mentioned, there is no model that can eliminate this tension, as it is inherent to water services, but the governance structure can help manage it.

The growing pressure on water resources, climate change, population dynamics, and competing uses are already straining water systems. Water scarcity is no longer just a theoretical concern, but something that is already becoming real in the EU as well. Without clear governance rules, these pressures enumerated can turn into social and economic instability, impacting water service resilience.

The proposed framework would not seek to extend Union competences or regulate ownership models. Rather, it would build on areas where Union law already influences the operation of water services, while leaving decisions on ownership and institutional organisation to the Member States.

Its purpose is more limited, as it seeks to give structure to an influence that already exists in practice. The Union already influences the organisation and functioning of water services through multiple areas of law, even if it does not regulate them directly. Environmental legislation, in particular the WFD, the Drinking Water Directive, and the Urban Waste Water Treatment Directive, all impose binding obligations that already influence investment and operational standards.

Moreover, the State aid rules, under Articles 107–109 TFEU, influence the financing of water services. Internal market rules say who can enter and participate in the sector, while environmental principles at the Treaty level, especially under Article 191 TFEU, also influence how pricing and cost recovery are handled. The EU financial instruments and economic governance mechanisms are already affecting investment decisions in some of the examples and could also influence sectoral reforms. Consequently, the fundamental rights frameworks, including the EU Charter and the ECHR, define limits on access, non-discrimination, and the protection of vulnerable users. These show that the Union already has a significant influence over water services, though fragmented, without having a governance framework.

A governance-based framework would not go beyond these existing points of intervention. It would aim to make them more coherent and transparent by setting minimum requirements related to transparency, accountability, and affordability, while leaving national choices on ownership and institutional design unaffected.

The proposal does not intend to fix the problem, which is structural, but rather responds to the limits of the system uncovered in this dissertation. Water services do not evolve towards a stable model but move through waves of reform, during which ownership changes, yet the underlying tension remains; hence the need for an EU governance model that creates boundaries for countries, as water service management affects us all.

1. Towards a Governance Framework for Water Services in the European Union

The proposed Union-level framework on water services should not regulate ownership, but focus on governance. Its purpose would be to define minimum conditions under which water services operate, while leaving Member States free to organise their systems.

To begin with, such a framework would need to set out some basic governance requirements. This would include a clearer separation between policy-making, regulatory oversight, and service provision, so that conflicts of interest are less likely to arise. It should also ensure that each State has a regulatory authority that can actually supervise the sector in a meaningful way, without being subject to political or operational pressure. Moreover, more attention should be given to transparency and public participation, especially when it comes to tariff-setting, investment decisions, and the monitoring of performance.

Second of all, water service providers, private or public, should be subject to clear, enforceable duties regarding service quality, continuity, and efficiency. These should be supported by obligations for reporting, measurable performance indicators, and a form of liability when minimum standards are not met in the quality, continuity, and efficiency of the water.

Third of all, cost recovery should remain a guiding principle, in line with Article 9 of the WFD but not on its own. Member States should ensure a balanced use of 3Ts, in order to distribute financial risk, maintain long-term investment capacity and resilience of the water sector.

Water services should remain accessible to all, including vulnerable groups, implying the use of affordability measures. Member States should be required to ensure effective affordability mechanisms, which may include social tariffs, direct financial support, flexible payment arrangements, and safeguards against disconnection for primary residences.

Fourth of all, the framework should strive for long-term stability and continuity of the system. Long-term infrastructure planning, maintenance obligations, and mechanisms for responding to crises are needed. But a minimum essential level of service should be guaranteed under all circumstances for the citizens.

Fifth of all, monitoring and enforcement should be tried through common performance indicators, and corrective measures should be required if non-compliance is flagged by Union-level monitoring.

Finally, such a framework should remain limited to minimum harmonisation. Member States should retain the ability to adopt more stringent measures, reflecting national conditions and policy choices.

Such an approach would not resolve the tension between affordability and financial sustainability, as this cannot be fully resolved given the inherent nature of water as both a basic need and a capital-intensive service, but would make it manageable.

IX. Conclusion

1. The Risk of Fragmentation Without a Common Framework

In the absence of a more structured approach, the organisation of water services will likely remain fragmented. While Member States share obligations, the way these obligations are implemented continues to differ significantly, as we observed in the examples.

As this dissertation shows, similar legal requirements can lead to very different outcomes in practice. This diversity is not, in itself, a problem, as it reflects the different historical developments of the States, institutional structure differences, and the priorities in policy. However, without a common framework, fragmentation can lead to big gaps in the level of protection.

Fragmentation can also undermine how Union policies work in practice, since environmental obligations, including those under the WFD, depend on how they are carried out at national level. Where governance structures are weak, implementation tends to be uneven, which in turn makes it more difficult to reach the broader objectives set by EU law.

Morover, fragmentation can also make financing and investment in water infrastructure more difficult. While States should aim to provide long-term stability, but differences in regulatory approaches can hinder this. Without a certain level of predictability, the financial risks can increase, which may discourage investment or lead to less efficient use of resources.

A governance-based framework at the Union level would not eliminate diversity, because that would be the wrong approach, but it would potentially define minimum conditions to which the States would need to adhere.

Without such coordination, existing differences are likely to deepen over time, especially under increasing pressure from climate change, infrastructure problems, and increasing financial burden. As water does not stay within the limits of national borders, water service governance should also not be confined to them. Addressing this problem does not require uniformity, but a clearer structure within which diversity can operate would be impactful for the EU.

2. Future Challenges for Water Governance in the European Union

Water governance in the European Union will likely to face even more pressure in the coming years. The challenges are not entirely new, but their intensity will be impactful. Climate change, ageing infrastructure, ageing citizens, and growing financial burdens are already affecting and influencing how water systems operate in practice.

Climate change, in particular, is already altering the conditions under which water services function.[703]

> "Climate change affects ecosystems, human societies and economies in a variety of ways, and water is the primary medium through which these impacts are felt…The water-related impacts of climate change also include negative effects on food security, human health, energy production, and biodiversity, not to mention the daily livelihoods of the world's most vulnerable women, men and children".[704]

Moreover, infrastructure across many Member States is ageing. Maintenance and renewal require costly investments, which cannot always be covered by tariffs alone, as seen in Romania's case. The need to ensure financial sustainability, while maintaining affordability, thus becomes central. With the expected costs increasing, this becomes harder to achieve.

Population decline in some regions reduces the financial base of water services, while urbanisation in others increases demand, adding pressure on existing systems.

Systems need to be able to respond to changing conditions, not only in legal terms, but also in practice. As ownership structures may change over time, the capacity to manage these pressures falls on the organisation of these systems.

A governance-based framework at the Union level would not solve all of these challenges, but it could support the resilience of the water services. Change is imminent, but increasing the resilience of the water sector is needed; cooperation is needed.

In this light, the future of water services will not be determined by a single reform or model, as no single one has emerged as an all-encompassing or correct approach from our comparisons. It will be determined by how we govern water services to be resilient.

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[703] Intergovernmental Panel on Climate Change (2022) *Climate Change 2022: Impacts, Adaptation and Vulnerability*. Cambridge: Cambridge University Press; UNESCO (2020) *World Water Development Report 2020: Water and Climate Change*. Paris: UNESCO; European Commission (2021) *Forging a climate-resilient Europe – the new EU Strategy on Adaptation to Climate Change*, COM(2021) 82 final.
[704] UNESCO (2020) *The United Nations World Water Development Report 2020: Water and Climate Change*. Paris: UNESCO, p. vi.

3. Answers to the Research Questions and Verification of the Hypotheses

The findings of this dissertation allow for a clear response to the research questions, as well as a verification of the hypotheses set out at the beginning.

Regarding the first research question, which asked whether resilience in water services is determined by ownership or governance, the answer is clear. Ownership alone does not explain outcomes, nor does it lay the foundations of a correct model. While it defines the legal structure of the system, it does not determine how it functions in practice, as exemplified by the country comparisons. The analysis shows that governance, understood as the combination of regulatory design, accountability mechanisms, and financial organisation, plays a more decisive role in water service resilience than the debate between the private and public models.

The second research question, focusing on Hungary and Romania, shows that these countries don't necessarily mirror the Western European trends, but show how similar pressures can lead to different institutional outcomes. There is no single path of development, even within a shared history and legal framework.

In relation to the third research question, the analysis identifies a number of governance mechanisms that are consistently linked to more resilient systems. These include independent regulation, enforceable service standards, transparency, public participation, affordability measures, and environmental safeguards. These elements do not remove the underlying tensions of the sector, as we established that it can't be achieved, but they structure how these tensions are managed in practice.

The fourth research question, which examined Western European experiences, through the cases of France, Germany, Portugal, Italy, and the United Kingdom, does not point to a single model, but they show a similar governance pattern. Despite differences in ownership and institutional design, systems that perform more effectively tend to share certain structural features, which we identified in the dissertation. This confirms that resilience is linked to governance, rather than to ownership models.

Finally, the fifth research question shows that EU law plays an important structuring, but not determining role. The WFD establishes cost recovery as a guiding principle, which is necessary, but gives flexibility to the countries. Other elements of EU law, like environmental obligations, internal market rules, and financial instruments, influence how water services are organised, but do not prescribe a specific model. As a result, Member States retain significant control, which leads to different outcomes and models in water services.

Based on these findings, the hypotheses of the dissertation can be assessed as well.

The first hypothesis, that ownership evolves in waves, is confirmed. While ownership transformations may appear cyclical in some cases, such as returning to public control after privatisation, this pattern is neither uniform nor universal and often reflects country-specific political and institutional dynamics. The analysis of the countries shows that water services have moved through different phases, including centralisation, privatisation, remunicipalisation, and recentralisation. However, these changes do not represent a simple return to earlier models, as each phase introduces new elements, while the underlying tensions remain unresolved. Ownership does not provide a stable solution; nevertheless, in some cases, it can be a driving force for a more stable and resilient water sector.

The second hypothesis is supported: the comparative analysis indicates that governance plays a more decisive role in shaping resilience than ownership alone.

The third hypothesis, that comparative analysis reveals the need for governance-based benchmarks at the EU level, is supported by the findings. While Member States follow different models, the comparison identifies common elements that contribute to resilience, described by the indicators used in the dissertation. These elements could serve as the basis for a more structured approach at the Union level, without interfering with national choices on ownership of water services.

These results of the dissertation, thus, confirm the central argument. Water services do not move towards a final or fixed model, but continue to evolve through successive phases of reform. Attempts to keep them within a single ownership model undermine their resilience. What ultimately determines their capacity to function over time is not ownership, but how governance structures are designed and applied in practice. In this sense, the role of law is not to resolve these tensions, but to structure how they are managed in practice.

4. Concluding Remarks

The analysis shows that the main challenge in water governance is not only external, such as climate change or water scarcity, but internal to the organisation of water services themselves. Unsustainability does not arise only from resource limitations, but from governance and financing structures that fail to align economic, social, and environmental objectives.[705] In this sense, the crisis is not simply one of availability, but of how water systems are organised and managed over time.

This points to a structural limitation of current European water models. While cost recovery, efficiency, and environmental protection are formally integrated, their interaction often produces unintended consequences. Climate change amplifies existing weaknesses, particularly where systems are already under pressure from rising costs, declining consumption, and increasing social demands.[706]

Moreover, water services cannot be understood as a purely technical or economic sector. As has been argued, privatisation is not simply a managerial reform but "a legally and institutionally condoned transfer of entitlements" within a broader framework that promotes market-based solutions.[707] However, these approaches often do not fully take into account the specific nature of water systems, which rely on long-term infrastructure and respond to a basic human need. In this setting, relying only on pricing mechanisms and cost recovery tends to be insufficient.

Water governance also operates within a fragmented, multi-level system, as responsibilities are dispersed across institutions and levels, where coordination becomes difficult and often incomplete. As noted, achieving integration in such systems is a core governance challenge, particularly where "nobody is in charge of the whole, and many are just a part".[708]

The future of water services cannot be reduced to a binary choice between public and private ownership. Returning services to public control requires legal preparation, technical expertise, and political commitment.[709] This underlines that ownership alone is insufficient and that governance remains decisive. However, across the many countries examined, we also highlight that ownership of water services can be significant for how they operate. The

[705] Barraqué, Isnard and Souriau (2017), p. 34.
[706] European Commission (2020) *PESETA IV Final Report – Water Resources*.
[707] Swyngedouw (2007), p. 52.
[708] Edelenbos and Teisman (2011), pp. 5, 21.
[709] Kishimoto, S., Petitjean, O. and Lobina, E. (2015) 'Reclaiming public water through remunicipalisation', pp. 112–130.

comparison does not suggest that ownership is irrelevant. In several of the cases examined, public ownership appears to provide certain advantages in terms of continuity and long-term orientation. However, these advantages are not inherent to public ownership itself, nor do they guarantee resilience. The analysis also shows that private operation can produce resilient outcomes where strong regulatory, financial, and accountability mechanisms are in place.

This is also reflected in the comparison between Hungary and Romania, where similar pressures lead to different outcomes depending on how governance and financing structures are designed.

At the EU level, this is reflected in the WFD, particularly Article 9, which requires cost recovery while allowing flexibility in its application. EU law, however, does not determine outcomes, but structures the limits within which the Member States balance competing objectives.

This structural limitation justifies the need for a governance-based approach at the Union level. These findings also show that water governance cannot be addressed from a purely legal perspective. It requires an interdisciplinary approach that integrates legal, economic, environmental, and social considerations. Water systems, and the tensions they embody, cannot be managed within a single framework.

Ultimately, the problem of water service resilience cannot be fully resolved because the tension is inherently structural. Water services must remain accessible, yet financially viable, and no system can fully achieve both at the same time. For this reason, the problem persists, even after repeated reforms. Water services must remain accessible while also remaining financially viable, and maintaining both objectives over time creates an inherent and continuing tension.

As a closing argument, it should be emphasised that water does not follow national borders, and its governance should not be limited by them either. The challenges faced by water services are increasingly shared, and so should be the solutions. Ultimately, resilient water governance requires cooperation, learning from different systems, and looking beyond national approaches.

Summary

The dissertation examines the transformation of water utility services across three main pillars: ownership, governance, and financing. A particular focus on Hungary and Romania within the wider framework of European Union law is given in the dissertation, as a central comparison of what it builds around. The topic, in its interdisciplinary nature, incorporates public service law, environmental protection, human rights, and climate adaptation, while also reflecting on the increasing pressure on water systems from scarcity, ageing infrastructure, population ageing, financial constraints, and changing governance models.

The central questions of the dissertation revolve around whether the resilience and performance of water utility services depend mainly on ownership structures, or rather on the governance systems that organise, regulate, coordinate, and finance the sector. The analysis examines the legal and institutional consequences of privatisation, remunicipalisation, decentralisation, and recentralisation, while also exploring the main tension between affordability, universal access, and the principle of cost recovery under EU water law, particularly Article 9 of the Water Framework Directive.

The dissertation argues that ownership alone cannot provide a universally successful model for water services. Instead, the resilience of water systems depends more on governance structures capable of ensuring accountability, coordination, long-term financing, and adaptability under environmental, economic, and social pressure, but without undermining the importance of the ownership models. Through this approach, the dissertation distinguishes between the changing waves of ownership and the resilience or fragility of the governance systems operating behind them.

The thesis is divided into nine chapters, from theoretical foundations towards comparative analysis and normative proposals. Chapter I introduces the topic, the research questions, and the hypotheses. Chapter II presents the dissertation's methodology, relying on a functional comparative approach and governance indicators used primarily later, throughout the comparative chapters. Chapter III develops the theoretical framework by addressing the ownership, governance, and resilience questions in water law and public service law.

Chapter IV introduces the central part of the dissertation, which focuses on the national case studies of Hungary and Romania. The Hungarian analysis follows the historical development of water services from integration to fragmentation, remunicipalisation, and increasing centralisation. The Romanian case study focuses on Law No. 241/2006, the process of regionalisation, and the development of regional operators. These chapters examine how

institutional organisation, regulation, financing structures, and affordability mechanisms shape water services in practice.

In Chapters V and VI, the dissertation examines governance and financing within the broader EU framework. Accountability, regulatory coordination, macroeconomic constraints, and the relationship between social protection and cost recovery are all developed in these chapters, as the financing water services is not simply a technical or economic issue, as it directly influences the sector's resilience, the condition of infrastructure, and the long-term sustainability of water services.

In Chapter VII, the examination of France, Germany, Portugal, Italy, and the United Kingdom is presented. By comparing different ownership and governance arrangements, the dissertation identifies recurring patterns across European water systems, and indicators are developed to further aid comparisons among these countries.

The dissertation develops normative proposals and a *de lege ferenda* framework for EU water governance, all highlighted in Chapter VIII. It argues that no universally correct ownership model can be identified, as the tension between affordability and cost recovery will always remain present. However, stronger coordination at the EU level could support the long-term sustainability through governance-oriented approaches.

The final chapter revisits the research questions and hypotheses, concluding that ownership structures tend to evolve in waves, while the resilience of water utility services depends primarily on governance. The dissertation ultimately demonstrates that the future of water services in Europe depends less on whether systems are publicly or privately owned, and more on whether legal and institutional frameworks are capable of coordinating, regulating, and financing water services under increasing environmental, economic, and social pressure. Ultimately, just as water is not bound by national borders, its governance cannot be understood within national borders alone.

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Annexes

Annex 1

AZ ORSZÁGHÁZ TANÁCSKOZÓTERMEIBŐL

Mérlegen a múlt esztendő

Lassult a termelés növekedésének üteme • Nem volt veszteséges vállalat • Vita a lakosság ellátásáról

Az országgyűlés terv- és költségvetési bizottságának ülésével lezárult a parlamenti bizottságok tanácskozásának sorozata, amely az országgyűlés nyári ülésszakát készíti elő.

A bizottságok ülésein a minisztériumok és főhatóságok vezető tisztviselői, miniszterhelyettesek adtak tájékoztatást *a múlt évi költségvetés végrehajtásáról és az ország vizgazdálkodásának helyzetéről*, hogy a képviselők a részletkérdéseket is jól ismerve készülhessenek fel a két fontos gazdasági téma parlamenti plenáris tárgyalására. A szaktárcák jelentéseiből és a bizottsági üléseken elhangzott vitákból megállapítható, hogy

a népgazdaság általános fejlődési tendenciája egyértelműen pozitív, az új gazdaságirányítási rendszer 1968-as nyitánya kiállta a próbákat.

A minisztériumok zárszámadását elemezve azt állapították meg a képviselők, hogy *a múlt évben javult az ország gazdálkodásának egyensúlya, kedvezőbben alakult a külkereskedelmi forgalom egyenlege.* Nem kerülte el figyelmüket viszont a jelei ellenére *még mindig tapasztalható bizonyos konzervativizmus és nehézkesség a tanácsi munkában.* Körülményesen halad a hatáskörök leadása, a felújítási, a bérgazdálkodási jogok decentralizálása.

Sok olyan kérdés is szóba került a múlt évi gazdálkodás elemzése közben, amely közvetlenül érinti *a lakosság ellátását.*

A mezőgazdasági bizottságban például szóba hozták az állattenyésztés, a hústermelés sok égető problémáját,

s a zöldség- és gyümölcstermesztés gondjait is. Sokan egyetértettek *Lakatos András* képviselő megállapításával: az ingadozó zöldség- és gyümölcsellátás nem kizárólag a csapadékhiánnyal magyarázható, hanem *a gazdálkodás gyengeivel, az anyagi ösztönzők nem megfelelő hatásával is.* Sok helyütt a rossz árueloszlás okoz ellátási problémákat. Ezért nagyobb gondot kell fordítani az átgondoltabb, arányosabb áruelosztásra.

A szociális és egészségügyi bizottság ülésén

az új kórházak építésével s a régiek bővítésével kapcsolatos gondok váltottak ki élénk vitát.

Az építőipari kapacitás hiánya miatt a múlt évre tervezett 1600 helyett csak 893-mal sikerült bővíteni a kórházi férőhelyek számát. A kórházépítési program lemaradása hátrányát a gyógyító munka tervezett fejlesztését.

Élénk figyelemmel hallgatták a képviselők *az ország vizgazdálkodási helyzetéről szóló tájékoztatást.* Mint megállapították, az ország természeti adottságaiból adódó vízhiány *jelentősen csökkenthető,* a központi beruházásokból épülő nagy tárolók mellett a helyi kis víztárolók is lényegesen elősegíthetik a vízkészlet szabályozását és kedvezőbb kihasználását. Sok hasznos javaslat hangzott el a lakosság ivóvízellátásának javítására is.

A hét országgyűlési bizottságban összesen több mint hatvan felszólalás hangzott el.

A képviselők élénk vitakedvéből ítélve hasznos, sokoldalú eszmecsere várható az országgyűlés ülésszakán.

Sz. G.

AZ ÁSVÁNYVÍZ VÁLLALAT KÉRÉSE

A VÁSÁRLÓK SÜRGŐSEN ADJÁK VISSZA AZ ÜRES ÜVEGEKET



Teljes üzem az Ásványvíz Vállalatnál

(Wormser felv.)

Percenként sok ezer liter ásvány-gyógyvíz tör fel a Margitszigetet mélyéből, az Ásványvíz- és Jégipari Vállalat töltőhelyén — és percenként ismét sok száz üveget töltenek meg ásványvízzel, amióta helyreállt a szénsavegyensúly.

Bágyi György igazgató arról tájékoztatott, hogy

sokat javítanak majd az ellátáson azzal a komplett ásványvíztöltő gépsorral, amelyet most vásárolnak.

Eddig évente 130 ezer hektoliter volt, az új géppel 170 ezer hektoliter lesz a vállalat ásványvíz-teljesítménye. Az új berendezést még az idén felszerelik.

Érdekes helyzet alakult ki néhány hét alatt az ásványvízfronton. A kritikus szénsavhiány enyhülésekor egyszerre *hat-tíz üveget is elvittek a vásárlók a boltból*

COMICO TRAGOEDIA

CSAK FIATALOKNAK

Mint ismeretes, a *Szentendrei Teátrum* júliusban hét alkalommal mutatja be a város főterén a XVII. századbeli ismeretlen magyar szerző *Comico Tragoedia* című művét, valamint az 1793-ban először bemutatott *Pikko herceg és Jutka Perzsi* szomorúvígoperáját. Az *Express Ifjúsági és Diák Utazási Iroda* a július 19-i előadást teljes egészében megvásárolta, s egésznapos program keretében 550 fiatal ismerkedhet meg a történelmi ihletésű város nevezetességeivel és a kuriózumnak számító produkcióval. A budapesti fiatalokat különhajó szállítja Szentendrére.

Közös felelősség, közös haszon

Konzervgyárak és konzervipari gépek exportálásában érdekelt vállalatok vezetői megállapodást írtak alá, melynek értelmében az értékesített berendezésekért *közösen viselik a technológiai felelősséget.* Ennek megfelelően *a szerződés valamennyi aláírója — köztük az Öntödei Vállalat és a Láng Gépgyár — részesül az üzletkötés eredményeiből.* Legközelebb a Szovjunióba konzervgyárat, Irakba datolyafeldolgozó üzemet, az NDK-ba pedig konzervgyári rekonstrukcióhoz

Annex 2



A munkák félidejéhez érkezett a Bakony Művek szociális épületének beruházása.

Határidőre teljesíti tervét a tapolcai TÖVÁLL



Csata — az éltető vízért

Hittünk — reménykedtünk — a majdnem csodában. Hogy talán elkerülhető lesz. Am minden erőfeszítés ellenére — szükségmegoldásként — a tilalomla állításához kell folyamodnunk. Ezt adja hírül a Napló vasárnapi 8. oldalának egyik közleménye. Ebben a Dunántúli Regionális Vízmű és Vízgazdálkodási Vállalat bejelenti, hogy a Balaton északi partján, Tapolca város és 14 község területén — az illetékes tanácsok vb-elnökeivel egyetértésben — locsolási tilalmat rendeltek el.

A „miért?"-re kézenfekvő a válasz. Azért, mert elsődlegesen az alapvető vízellátást kell megoldani. Az ivóvíztogyasztás az utóbbi időben megnőtt. S mivel nemcsak az üdülőterületeken növekedtek az igények, hanem az egész megyében, emiatt várható, hogy hasonló intézkedésre, a locsolási tilalom elrendelésére kényszerül a másik vízszolgáltató gazdasági egység, a Veszprém megyei Víz- és Csatornamű Vállalat is.

Új vízmű, hálózat, csomagolás

A gondok nem mai keletűek, és az intézkedések csupán a pillanatnyi veszélyt hárítják el. Ideig-óráig segítenek az ellátás zavartalanságának megoldásában, de a holnap igényeit tekintve korántsem orvosolják a baj gyökerét. Ezt már a tavalyi, szeptember 27-i ülésén is határozottan megállapította a megyei tanács, amely — a lehetőségek figyelembevételével, elemzésével — megfelelő határozatokat hozott és reális terveket dolgozott ki az ivóvízellátás javítására.

Abból indulva ki, hogy a szüntelenül növekvő igények kielégítése elengedhetetlenül megköveteli a víztermelés fokozását. Ez eddig rendben levő is lenne. Csakhogy a víz — mint természeti erőforrás — nem „buzog" kimeríthetetlenül. S ezért a jó ivóvíz kitermelése (különösen, ha még a természet is gyakori kánikulával és gyakori csapadékhiánnyal nehezíti) igen költséges. Csupán egy példa: a kormány víztakarékossági és vízminőség-védelmi programjának megvalósítása milliárdokat igényel. A jelenlegi vízellátási létesítmények (kutak, tisztítóművek, elosztóhálózatok, tározók, laboratóriumok stb.) értéke hazánkban meghaladja az 50 milliárd forintot. A vízművek naponta 4,4 millió köbméternyi vizet képesek termelni, s ez a mennyiség 40 ezer kilométernyi vezetékrendszeren jut el a fogyasztókhoz. Ahol nincs vezeték, oda „csomagoltan".

Veszprém megyében hasonló a helyzet. A lakosság ivóvízellátásának javítására, a regionális vízművek bővítésére, a tisztítókapacitás növelésére milliárdokat fordítottunk. Csupán a VI. ötéves tervben 1 milliárd 111 millió forintot kötünk a települések vízgazdálkodásának fejlesztésére.

nek van közműves vízellátása. A 389 ezer lakosból 288 ezer veheti igénybe a vízműszolgáltatást.

Takarékosabb vízgazdálkodással

A józan tépelődés alapján megformált kérdés így szól: „Mit és mennyit ihatunk holnap?" Mert a víz olyan természeti kincs, amely egyre fogy. Nem maga a készlet, hanem a minősége romlik, a szennyezettség aránya nő, s emiatt az ivóvízkészlet gyakorlatilag csökken. Unokáinknak lényegében a jelenlegi vízkészlet marad, de az emberi fogyasztásra alkalmas arány mind kisebb lesz.

Dr. Illés György, a Magyar Hidrológiai Társaság elnöke a MTESZ folyóiratának, a Fórumnak adott nyilatkozatában hangsúlyozta: „A víz azért fogy, mert egy elmaradott, ipar és öntözőművek nélküli ország az elmúlt 40 év óriási iparimezőgazdasági fejlődése következtében fejlett vízfogyasztóvá illetve -felhasználóvá vált."

Annex 3

II. évfolyam, 57. szám Új MAGYARORSZÁG 1992. március 7., szombat

HIRDETÉS

Vízgazdálkodási társulatok a víz ellen és a vízért...

Mit kell tudni a vízgazdálkodási társulatokról? A vízgazdálkodási társulatok a területi (helyi) vízgazdálkodási feladatok megvalósításában érdekeltek önkéntes akaratelhatározással létrejött és önkormányzati keretek között működő olyan szervezetek, amelyek a helyi vízgazdálkodási, környezetvédelmi közfeladatok ellátásáról gondoskodnak. Létrejöttük alapja a *társulati érdekeltségi viszony*, amely a vállalt feladat megoldására– a többségi elv alapján létrehozott – a társulathoz, a közcélú vízilétesítmény hatásterületéhez (érdekeltségi területhez) és az e területen ingatlant használók személyéhez *(érdekeltekhez)* kapcsolódik. Az érdekeltek– függetlenül attól, hogy tagjai-e az adott társulatnak vagy sem – a társulat közcélú feladataihoz érdekeltségük arányában, a jogszabályban meghatározott keretek között hozzájárulást tartoznak fizetni. A társulatok tevékenységük során egyesítik a különböző érdekeltek: helyi önkormányzatok, mezőgazdasági üzemek, szövetkezetek, állampolgárok stb. anyagi erőforrásait és a rendelkezésre álló, biztosítható állami erőforrásokat. Közreműködésükkel gyorsabban valósíthatók meg az érdekeltek igényeihez jól alkalmazkodó helyi vízgazdálkodási célok. A vízgazdálkodási társulatok tevékenysége nem újkeletű. Szervezetük és működésük jogi kereteit elsősorban már az *1807. évi XVII. törvénycikk* szabályozta. Itt érvényesült először az az elv, hogy a vízi munkák megvalósításában a többség döntése a kisebbségre is kötelező. A Sárköz és a környező dunavölgyi területek több tízezer hektáros elmocsarasodásának megszüntetésére az érintett földbirtokosok 1810. szeptember 11-én megalakították a *Sárvíz-csatorna Társulatot.* A társulati „mozgalom" a Sárvízi Nádor-csatorna építésével vette igazán kezdetét. Az ezt követően létrejött új társulatok munkája kiterjedt a Duna, majd a Tisza völgyére. Ezzel kialakult a *közérdekből fennmaradó vízitársulat* fogalma és gyakorlata.



Az 1844–45. évi tiszai árvizek után *Széchenyi István* – az érdekeltek összefogásával – társulati úton keresett lehetőséget a Tisza szabályozására. Azt vallotta ugyanis: „Egy magányos ember semmi, csak az egyesületnek van hosszú élete és igazi súlya." Széchenyi István jelenlétében 1845. október 19-én a mai Tiszadobon alakult meg az Alsószabolcsi Társulat, majd néhány hónap múlva 1846. január 19-én az Egyesült Tisza-völgyi Társulat, melynek műszaki vezetője *Vásárhelyi Pál* lett. Ezt követően kezdeményezte a társulatokba tömörült Tisza menti gazdák érdekvédelmi szervezetének – a Választmánynak – megalakítását.

A hagyományos – közel 200 éves múltra visszatekintő ún. vízitársulatok feladatait (ármentesítés, lecsapolás, öntözés) 1948-tól az állam vállalta magára. De egy évtized után – 1958-ban – a vízgazdálkodási feladatokat, kibővített – vízellátási, csatornázási (szennyvíztisztítási) feladatokkal újjászervezték és azóta több alkalommal (1977-ben és 1988-ban) jelentékeny mértékben továbbfejlesztették.

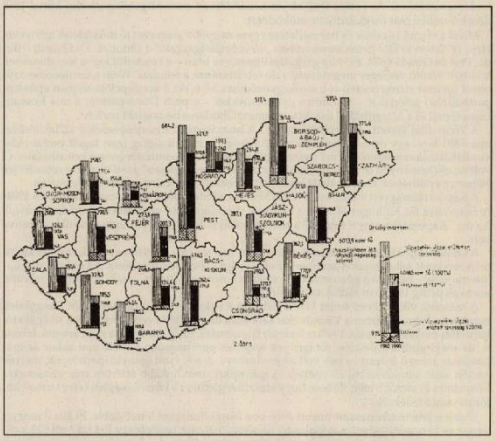
A társulatok feladatkörét, létrejöttét, megalakulását, szervezetét és működését, valamint az állami szervek ezzel kapcsolatos irányítási és felügyeleti jogosítványait napjainkban még különböző szintű és kisebb-nagyobb mértékben módosított korábbi jogszabályok határozzák meg. Ezek: a vízügyről szóló 1964. évi IV. törvény, az 1977. évi 28. tvr., a 41/1977. (XI. 3.) Mt. rendelet, valamint a 4/1978. (XII. 18.) OVH rendelkezés.

A vízitársulatok tevékenységét meghatározó és a jogi szabályozás alapját képező társadalmi, gazdasági és politikai viszonyok átalakulása az elmúlt két év során sürgetően felvetették a hatályos társulati joganyag átfogó felülvizsgálatának elvi kérdéseit, valamint a gyakorlati megoldás(ok) lehetőségeinek vizsgálatát, *új társulati törvény* mielőbbi elkészítését és kiadását. (A korábbi vízügyi törvény és a teljes társulati joganyag átfogó felülvizsgálata folyamatban van.)

A vízgazdálkodási társulatoknak – feladatuk jellegétől függően – jelenleg *két nagy csoportja van:* – a vízitársulatok (termelő-szolgáltató szervezetek), melyek helyi vízrendezési, talajvédelmi, öntözési, valamint ezzel összefüggő vízépítőipari és egyéb építőipari munkákat végeznek. Jelenleg 67 vízitársulat működik. Érdekeltségi területük kereken 8 millió ha. Éves termelési értékük 1990. évben meghaladta a 4 milliárd forintot. (A jelenleg működő vízitársulatok területi elhelyezkedését a társulatok székhelyeinek feltüntetésével az 1. ábra szemlélteti.) – A *víziközmű társulatok* (beruházó szervezetek) melyek feladataiktól függően települések ivóvízellátását szolgáló vízművek, a szennyvízelvezetést és -tisztítást szolgáló csatornaművek, a települések belterületét a káros vizektől mentesítő művek megvalósításáról illetve fejlesztéséről gondoskodnak. Évente általában 250-300 víziközmű társulat működik és végez beruházási tevékenységet, melynek összege országosan jelenleg meghaladja a 3 milliárd Ft-ot. A víziközmű társulat közcélú feladatának végrehajtása után a kész létesítmények szakszerű üzemeltetéséről a helyi önkormányzatok gondoskodnak. A közfeladatainak teljesítése után a víziközmű társulat által kivetett érdekeltségi hozzájárulás beszedése, valamint az általa felvett hitel törlesztésének kötelezettsége a helyi önkormányzatra hárul. Erre azért van szükség, mert a lakossági érdekeltségi hozzájárulást az *Országos Takarékpénztár* – kedvező (9,6+1,0 %-os) – kamatfeltételek mellett, maximálisan 10 év alatti történő visszafizetés engedélyezésével – megelőlegezi.

Amiről a számadatok tudósítanak

A *vízitársulatok* tag és nem tag érdekeltjei a munkaszervezettel közösen érdekközösséget alkotnak, amelyek elsőrendű célja a vízfolyások megfelelő szintű karbantartása. A vízitársulatok kezelésében lévő mintegy *26000* km kisebb vízfolyás, vízfolyás-szakasz, belvízcsatorna állagmegóvása és üzemeltetési feltételeinek biztosítása mindig kiemelt feladat volt a társulati tevékenységen belül.



A társulatok a közcélú fenntartási munkákra évente átlagosan 500 millió forintot tudtak fordítani, mely nagyságrend országosan a fenntartási szükségletnek mintegy felére nyújtott csak fedezetet. Ez oda vezetett, hogy a kiépült rendszerek működőképessége egyes területeken kritikussá vált.

A vízitársulatok fejlődését, kivitelező kapacitásuk jelentős növelését jól mutatja megalakulásuk óta az általuk végzett feladatok folyamatos növekedése. Míg az 1986. évi termelési érték 3,3 milliárd forint volt, az elmúlt évben a társulati termelés elérte a *4,5 milliárd forintot.*

A társulati tevékenységen belül az elmúlt időszakban is meghatározó volt a társulatok *építőipari tevékenysége,* az összes tevékenységhez viszonyítva átlagosan 80%. Ez kedvező lehetőséget nyújt, hogy jelenlegi alapfeladataikat ellátva (érdekeltjeik igényeit kielégítve) a jövőben fokozott segítséget (szellemi és műszaki kapacitást) biztosítsanak többek között a helyi önkormányzatok növekvő vízgazdálkodási és környezetvédelmi feladatai lehetséges megoldásához, esetenként jelentkező súlyos feszültségek mérsékléséhez. A vízitársulatok ma már nemcsak a vízügyi ágazatnak, hanem a mezőgazdaságnak, a környezetvédelemnek és a helyi önkormányzatnak is egyre meghatározóbb és nélkülözhetetlen szervezeti egységei, melyek működése a jövőben sem nélkülözhető.

A *víziközmű társulatok* (vízmű és csatornamű) eddigi eredményeit értékelve elmondható, hogy 1991. évben a víziközmű társulati tevékenységnek (szervezetnek) eredményekben igen gazdag, történelmi korszaka zárult le. Országosan és területenként egyaránt kiemelkedő eredménynek kell tekinteni, hogy az 1960-as évek elején a falvakban, az ivóvíztársulatok gyors ütemű szervezésével néhány év alatt több száz településen tértek át a „bólogató" gémeskutak használatáról a vezetékes vízellátásra. Elsősorban a vízműtársulatok eredménye, hogy a községekben élő és vízvezetéki vízzel ellátott lakosság aránya az *1960. évi 9%-ról 1990. év végére kereken 82%-ra növekedett.* A gyors ütemű fejlődés kedvező területi alakulását és mértékét a *2. ábra* jól szemlélteti.

A víziközmű társulatok közel három és fél évtizedes korszakából az elmúlt hat esztendő kiemelkedő időszaknak tekinthető, még akkor is, ha az elmúlt évben és várhatóan még 1992. évben is több alkalommal kerültek és kerülhetnek a társulatok nehéz, esetenként kritikus helyzetbe. Ezek a feszültségek azonban az állami támogatások jelenlegi rendszerének korszerűsítésével, kedvező hitelfeltételek biztosításával jelentős mértékben csökkenthetők!

Az elmúlt 6 év során (1986–1991) a társulatok 20,3 milliárd forintot fordítottak építésre és fejlesztésre. Ebből 14,0 milliárd forintot – a beruházások kereken 70%-át – vízellátási célokra fordították elsősorban a közegészségügyileg veszélyeztetett községekben. Csatornázásra (szennyvíztisztításra) 6,0 milliárd Ft került felhasználásra, mely az eddigi összes társulati beruházásnak mintegy 30%-a. Belterületi vízelvezetésre a társulatok mindössze 300 millió forintot tudtak fordítani.

Az elmúlt évek során is a beruházási költségeknek több mint 50%-át a helyi érdekeltek – elsősorban a lakosság – vállalták.

1986–1991. időszakban hat év alatt 700 községben épült új vízmű és 35 községben csatornamű. A társulati beruházásban megvalósult 5500 km vízhálózat útján 550 ezer fő jutott vezetékes vízellátáshoz. Jelentős eredménynek tekinthető, hogy ez idő alatt társulati beruházásban közel 600 km szennyvízcsatorna is épült.

Befejezésül elmondható, hogy a vízgazdálkodási társulatok tevékenységéről készült ismertető elsődleges célja, hogy rövid tájékoztatást adjon a társulatok működéséről és eddigi tevékenységükről. További célja, hogy felvillantsa – elsősorban a helyi önkormányzatok számára (a fokozódó nehézségek és fennálló feszültségek ellenére), mind a vízi, mind a víziközmű társulatok fokozódó szerepét és jelentőségét a helyi (területi) vízgazdálkodás, környezetvédelmi és egyéb feladatok előkészítésében és végrehajtásában.

A társulatok érdekvédelmi szervei a területi választmányok és az Országos Választmány (Szövetség) is készséggel nyújtanak tájékoztatást és segítséget valamennyi érdeklődő (olvasó) számára.

Érdeklődni lehet: Vízgazdálkodási Társulatok Országos Választmánya Budapest V., Arany János utca 25. (Postacím: 1394 Bp. Pf. 351.) Telefon, fax: 132-9917.

Annex 4

PROLETARI DIN TOATE ȚĂRILE, UNIȚI-VĂ!

Scînteia

ORGAN AL COMITETULUI CENTRAL AL PARTIDULUI COMUNIST ROMÂN

Anul XLVI Nr. 10 605 Prima ediție | Vineri 24 septembrie 1976 | 6 PAGINI — 30 BANI

MAI MULTĂ GRIJĂ PENTRU APA POTABILĂ

S-o folosim chibzuit, să n-o risipim!

● 3 500 de kilometri de rețele noi de distribuție a apei pînă în 1980 ● Măsuri hotărîte împotriva pierderilor de orice fel ● Consumuri exagerate în unele unități economice ● Datoria cetățenilor în privința întreținerii instalațiilor

Într-o convorbire avută cu tovarășul inginer **George BUDIȘTEANU**, director al direcției de gospodărie comunală, locativă și industrie locală din Comitetul pentru problemele consiliilor populare, ne-au fost înfățișate cîteva din problemele care au făcut obiectul unei consfătuiri pe țară privind alimentarea cu apă, canalizarea și salubrizarea localităților. La consfătuire au participat directorii și inginerii-șefi ai grupurilor și întreprinderilor județene de gospodărie comunală și locativă.

— Consfătuirea — ne-a spus interlocutorul — a prilejuit un fructuos schimb de experiență, o analiză temeinică a modului în care acționează consiliile populare, comitetele și birourile lor executive, pentru îmbunătățirea alimentării cu apă a localităților, pentru mai buna folosire și gospodărire a acestei avuții atît de necesară în viața fiecăruia dintre noi. Pentru a facilita desprinderea unor concluzii și stabilirea de măsuri cît mai eficiente, consfătuirea a dezbătut o informare generală pe țară și rapoarte din mai multe județe (Timiș, Brașov, Botoșani, Sălaj, Brăila, Bihor și municipiul București). Este cunoscut faptul că, în domeniul alimentării cu apă și canalizării, țara noastră a moștenit de la vechiul regim o situație dintre cele mai grele, ale cărei dificultăți — cu toate eforturile materiale făcute de stat, mai ales în ultimii ani — nu au putut fi încă depășite în întregime. În prezent, ca urmare a acestor eforturi, marea majoritate a orașelor și municipiilor, precum și un număr important de comune sînt alimentate cu apă prin sisteme centralizate. Prin realizarea, în actualul cincinal, a 3 500 km artere și rețele de distribuție, precum și a numeroase aducțiuni, stații de pompare și tratare a apei, numărul localităților urbane și rurale care vor beneficia pînă în 1980 de alimentări cu apă și canalizări va crește considerabil. Dacă avem în vedere că, în aceeași perioadă, se vor realiza, de asemenea, 2 500 km canale colectoare, numeroase stații de pompare principale și secundare, se poate spune că — la sfîrșitul actualului cincinal — majoritatea localităților urbane vor avea rețele proprii de alimentare cu apă și canalizare. Este încă o dovadă a grijii pe care conducerea partidului și statului o poartă ridicării neîncetate a nivelului de viață și civilizație al poporului.

— În cadrul consfătuirii au fost abordate o serie de probleme concrete vizînd atît întreținerea și exploatarea rețelelor, cît și utilizarea mai rațională a resurselor de apă. Ce măsuri s-au stabilit în acest sens?

— În primul rînd, s-au stabilit măsuri care să ducă la o mai bună gospodărire a resurselor de apă și la asigurarea calității acesteia. Este o sarcină de mare importanță, pe care trebuie s-o îndeplinească atît consiliile populare, cît și organismele de stat de specialitate. Pentru că — de ce să n-o spunem? — deși, pe ansamblu, rețelele de distribuție asigură populației apă de cea mai bună calitate, în unele locuri și-au făcut apariția și unele neglijențe care ne determină să supunem din nou atenției răspunderea ce trebuie acordată purității apei. Măsurile necesare pentru asigurarea calității apei potabile se cer completate — așa cum a rezultat din consfătuire — cu eforturi susținute în ce privește întreținerea instalațiilor de tratare și distribuție. De asemenea, răspunderi mari pentru asigurarea unui grad corespunzător de potabilitate a apei revin și unităților industriale și agroindustriale care — în conformitate cu reglementările în vigoare — sînt obligate să ia toate măsurile pentru epurarea apelor rezultate din procesele tehnologice specifice înainte de a fi deversate în rîuri. Aceasta, întrucît rîurile reprezintă o sursă principală de alimentare cu apă a localităților. Asemenea măsuri se impun în general în toate județele, dar în mod deosebit în unele localități ale județelor Alba, Botoșani, Buzău, Sibiu și Suceava.

O altă problemă care a făcut obiectul consfătuirii se referă la necesitatea utilizării mai eficiente a instalațiilor de alimentare cu apă pentru a putea satisface tot mai bine cerințele populației. Analizele pe care le-am efectuat pînă acum scot în evidență faptul că în prezent se înregistrează pierderi mari în rețelele de distribuție a apei, fie datorită neexecutării la timp a lucrărilor curente de întreținere, fie întîrzierilor cu care se execută remedierea defecțiunilor apărute în rețea. Dacă în multe județe, ca Arad, Timiș, Iași, Cluj, municipiul București și altele, datorită preocupării comitetelor executive, a organelor de specialitate, se acordă o atenție corespunzătoare atît executării intervențiilor operative cît și măsurării apei captate, tratate și distribuite, în alte județe se constată mari deficiențe de această natură, cu serioase implicații de ordin economic și social. Dacă avem în vedere faptul că resursele de apă de care dispunem sînt limitate, este de neconceput ca în unele județe să se înregistreze pierderi de apă potabilă. Datorită întreținerii necorespunzătoare a instalațiilor interioare din imobile, aceste pierderi se ridică la peste 20—25 la sută din debitul distribuit. Față de această situație, în consfătuire s-a stabilit să se ia măsuri ca toate județele să-și procure aparate de măsură (apometre, debitmetre, manometre etc.) pentru a echipa în cel mai scurt timp instalațiile cu asemenea dotări. Toate aceste aparate se fabrică în țară, la întreprinderea „Prezizia" și la Fabrica de elemente automatizate din București. Evident, aceste măsuri nu pot avea efectul scontat, dacă nu sînt însoțite și de un înalt spirit civic și gospodăresc din partea cetățenilor, care sînt datori să-și supravegheze cu toată atenția proprii instalații și să ia măsuri pentru repararea lor promptă. În același timp, trebuie să subliniem faptul că mai sînt unele întreprinderi industriale care înregistrează un consum exagerat de apă potabilă. Sînt orașe ca Brașov, Tîrgu-Jiu, Reșița, Ploiești și altele, unde unitățile industriale dețin ponderea în consumarea apei potabile. Or, această situație — așa cum reiese din constatările noastre — se răsfrînge, uneori, în mod nedorit, asupra modului în care sînt satisfăcute cerințele populației. Supunem atenției acest aspect, întrucît nu peste tot se respectă reglementările legale care obligă întreprinderile industriale să utilizeze surse proprii de alimentare cu apă pentru consumurile tehnologice. În consfătuire s-a indicat ca organele locale ale puterii de stat să analizeze modul de folosire a apei de către întreprinderile industriale racordate la rețelele publice și să stabilească măsuri pentru recircularea acesteia, acolo unde este utilizată în scopuri tehnologice, pentru a fi diminuat la maximum consumul nerațional. Alte măsuri stabilite în acest scop se referă la obligația ca întreprinderile județene de gospodărie comunală și locativă să ia măsuri pentru a examina de îndată situația pierderilor de apă în rețelele de distribuție din fiecare localitate și să ia măsuri ferme pentru înlăturarea deficiențelor. De asemenea, trebuie să se organizeze, acolo unde nu există, echipe specializate, care să se ocupe periodic de verificarea, revizia și întreținerea instalațiilor de alimentare cu apă și canalizare la toți consumatorii.

...Fără îndoială, măsurile stabilite în cadrul consfătuirii constituie un pas important pe linia perfecționării activității într-un domeniu de larg interes public cum este alimentarea cu apă potabilă. Este necesară aplicarea neîntîrziată în viața a învățămintelor acestui schimb de experiență, a măsurilor preconizate. Iar această sarcină revine, în primul rînd, consiliilor populare, comitetelor și birourilor executive ale acestora.

Convorbire consemnată de **Constantin PRIESCU**





Statement

In accordance with the provisions of the Regulation on the Use of Artificial Intelligence of University of Miskolc and the Guidelines for the Use of Artificial Intelligence of the Dek Ferenc Doctoral School of Law, I, undersigned Agota Szekeres (name), declare that I have used / have not used artificial intelligence in my doctoral dissertation and thesis booklets.

In the case of the use of artificial intelligence (hereinafter: AI), I declare the following:

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3. The exact date of production of the generated content (year, month, day): 2025-2026
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