

Status of Implementation of the Drinking Water Directive

Assessment across WAREG
Member Countries



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Annex - Questions included in the WAREG Drinking Water Directive Working group questionnaire

WAREG Members contributing to the study

EU Country/Region	Member/Regulatory Authority	Abbreviation
Belgium, Brussels	Brussels Regulatory Authority for Electricity, Gas and Water price control	BRUGEL
Bulgaria	Energy and Water Regulatory Commission	EWRC
Croatia	Council for Water Services	VVU
Czech Republic	Czech Ministry of Agriculture	MZe
Estonia	Estonian Competition Authority	ECA
Greece	Regulatory Authority for Energy, Waste and Water	RAAEY
Hungary	Hungarian Energy and Public Utility Regulatory Authority	MEKH
Ireland	Commission for Regulation of Utilities	CRU
Italy	Regulatory Authority for Energy, Networks and Environment	ARERA
Latvia	Public Utilities Commission	PUC
Lithuania	National Energy Regulatory Council	NERC
Malta	Regulator for Energy and Water Services	REWS
Portugal	Water and Waste Services Regulation Authority	ERSAR
Portugal, Azores	The Water and Waste Services Regulation Authority of Azores	ERSARA
Romania	Romanian Authority for Public Services	ANRSC

Non-EU Country/Region	Member/Regulatory Authority	Abbreviation
Albania	Water Regulatory Authority	ERRU
Armenia	Public Services Regulatory Commission	PSRC
Georgia	Georgian National Energy and Water Supply Regulatory Commission	GNERC
Kosovo	Water Services Regulatory Authority of Kosovo	WSRA
Moldova	National Agency for Energy Regulation	ANRE
Montenegro	Energy and Water Regulatory Agency of Montenegro	REGAGEN
North Macedonia	Energy Regulatory Commission	ERC
Ukraine	National Energy and Utilities Regulatory Commission	NEURC

Abbreviations

DWD	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)
EC	European Commission
ECA	Estonian Competition Authority
ECHA	European Chemicals Agency
EU	European Union
ILI	Infrastructure leakage index
JMD	Joint Ministerial Decision
IWA	International Water Association
N/A	Not applicable
N/R	No response
PFAS	Per- and polyfluoroalkyl substances
RBA	Risk-based approach
SMS	Short Message Service
WAREG	Association of European Water Regulators
ΥΠΕΝ	Ministry of Environment and Energy, Greece (Υπουργείο Περιβάλλοντος και Ενέργειας)

Executive Summary

This report presents the results of the questionnaire conducted by the WAREG Drinking Water Directive Working Group concerning the implementation of Directive (EU) 2020/2184 across WAREG EU Member States and non-EU countries. Responses were received from 21 regulatory authorities, representing a wide range of institutional frameworks, implementation stages and regulatory practices.

Overall, the findings indicate a strong commitment among the participating regulatory authorities, and the countries they represent, to improving the quality, safety and efficiency of water services in line with the objectives of the Drinking Water Directive (DWD). While full transposition and implementation are still ongoing in many jurisdictions, both EU and non-EU regulatory authorities report significant progress in aligning national frameworks with key provisions of the Directive.

A central finding is the gradual transition towards a risk-based approach (Articles 7-9), which is already formally established in several countries represented by the responding regulatory authorities. However, implementation remains uneven across its different components, particularly at catchment level and in domestic distribution systems. The primary responsibility for implementation lies with water suppliers and competent public authorities, while regulatory authorities typically play a more indirect role, mainly through oversight, coordination and tariff-setting.

In the area of materials in contact with drinking water (Article 11), most regulatory authorities report the existence of national approval systems or ongoing efforts to align with the new EU harmonised framework in the countries they represent. The transition towards European positive lists and common conformity assessment procedures is expected to significantly reshape existing national systems. Key challenges identified include laboratory capacity, coordination among competent authorities, and the financial implications of replacing non-compliant materials.

With regard to consumer information (Article 17), regulatory authorities report that, in most countries represented, basic information on water quality is provided, primarily through official websites and annual reporting. However, the use of multi-channel communication, real-time information tools and comparative consumption data remains limited, indicating further potential to enhance transparency and consumer engagement.

In the area of access to water (Article 16), most regulatory authorities report that the countries they represent have established legal frameworks and support mechanisms, particularly through social tariffs and financial assistance schemes. Nevertheless, implementation often focuses on economic measures, while the promotion of tap water in public spaces and awareness-raising activities remains less developed.

Regarding water leakages (Article 4), regulatory authorities report that the countries they represent are at different stages of developing assessment frameworks, with increasing use of indicators such as non-revenue water (NRW, expressed as % and m³/km/year) and, in some cases, the Infrastructure Leakage Index (ILI). Some regulatory authorities go a step further by using the monitoring of water loss levels and setting reduction targets as part of efficiency regulation. However, data availability, methodological differences and investment needs continue to pose challenges for achieving consistent and comparable results.

Across all policy areas, several cross-cutting challenges are identified by regulatory authorities, including limited financial and human resources, insufficient technical capacity, fragmented institutional responsibilities and gaps in data availability and digitalisation. These factors significantly influence the pace and effectiveness of implementation in those countries.

The findings also highlight that regulatory authorities are often not directly responsible for implementing DWD requirements, but play a crucial enabling role, particularly through tariff regulation, performance monitoring and stakeholder coordination. Their contribution is therefore essential to translating regulatory requirements into practical outcomes.

Importantly, the report demonstrates a clear convergence between EU and non-EU countries represented by the responding regulatory authorities towards the objectives of the Directive. In many non-EU countries, regulatory authorities report that national frameworks are already aligned with key DWD principles, confirming the Directive's role as a reference framework beyond the EU.

Finally, the report underlines the added value of WAREG as a platform for structured exchange, comparative analysis and mutual learning among regulatory authorities. Continued cooperation will be essential to support consistent, efficient and effective implementation of the Directive across the countries represented.

1 Introduction

This report presents a structured analysis of the responses collected through the WAREG Drinking Water Directive Working Group questionnaire on the implementation status and practical transposition of 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) (DWD), across Member States. The questionnaire was launched on 28 May 2025 and was prepared by the Regulatory Authority for Energy, Waste and Water (Greece) and the Public Utilities Commission (Latvia), in cooperation with the WAREG Secretariat. Two workshops on the preliminary results were subsequently organised on 16 and 30 October 2025, after which participants were given the opportunity to clarify and, where necessary, update their responses.

The purpose of this assessment is to identify areas of convergence and divergence, as well as aspects where further clarification, methodological alignment or the development of additional guidance may be required in order to facilitate a consistent implementation of the Directive across the Union.

The questionnaire covered the following sections, according to the DWD Articles:

- A – General information;
- B – Risk-based approach (Articles 7-9);
- C – Materials in contact with drinking water (Article 11);
- D – Consumer information (Article 17);
- E – Access to water (Article 16);
- F – Water leakages (Article 4).

The report is structured by questionnaire section order (A-F) and for each thematic block it provides (a) the regulatory purpose of the relevant provisions of Directive (EU) 2020/2184, and (b) a comparative analysis of the replies received from national authorities.

Methodology: the analysis is based on structured replies received from competent authorities. Quantitative percentages presented in this report reflect the relative proportion of responding jurisdictions. Where differentiation between legal transposition measures and administrative implementation measures was identifiable, this distinction is maintained.

Limitations: significant variation in the level of detail provided and in the maturity of implementation stages may influence comparability for certain provisions.

Data availability note: the complete set of responses submitted by participants is held by the report authors and may be made available upon request through the WAREG Secretariat.

2 Section A – General Information

2.1 Respondents

Responses to the questionnaire were received from 21 WAREG members and observers from both EU Member States (14) and non-EU countries (7).

The data provided by REWS (Malta) in the questionnaire was partial, as the new competent authority is currently in the process of being established.

Table 1. WAREG questionnaire respondents

Country / territory Regulator	Country code	Country, Regulator	Country code
Albania-Tirana (<i>ERRU</i>)	AL	Kosovo (<i>WSRA</i>)	XK
Azores (Portugal) (<i>ERSARA</i>)	AZ-PT	Latvia (<i>PUC</i>)	LV
Brussels (Belgium) (<i>BRUGEL</i>)	BRU-BE	Lithuania (<i>NERC</i>)	LT
Bulgaria (<i>EWRC</i>)	BG	Malta (<i>REWS</i>)	MT
Czech Republic (<i>Mze</i>)	CZ	Montenegro (<i>REGAGEN</i>)	ME
Estonia (<i>ECA</i>)	EE	Moldova (<i>ANRE</i>)	MD
Georgia (<i>GNERC</i>)	GE	North Macedonia (<i>ERC</i>)	MK
Greece (<i>RAAEY</i>)	GR	Portugal (<i>ERSAR</i>)	PT
Hungary (<i>MEKH</i>)	HU	Romania (<i>ANRSC</i>)	RO
Ireland (<i>CRU</i>)	IE	Ukraine (<i>NEURC</i>)	UA
Italy (<i>ARERA</i>)	IT		

2.2 Status of DWD Transposition

Seven regulatory authorities participating in the survey (*ERSARA* (Azores, Portugal), *BRUGEL* (Brussels, Belgium), *CRU* (Ireland), *NERC* (Lithuania), *ANRSC* (Romania), *ERSAR* (Portugal) and *ARERA* (Italy)) reported that the new requirements of the DWD have already been transposed into their national legislation. A further eight respondents (*MZe* (Czech Republic), *RAAEY* (Greece), *PUC* (Latvia), *EWRC* (Bulgaria) and regulatory authorities from non-EU countries - *ERRU* (Albania), *ANRE* (Moldova), *NEURC* (Ukraine) and *WSRA* (Kosovo)) indicated that transposition is partial. Two respondents from non-EU countries (*REGAGEN* (Montenegro) and *ERC* (North Macedonia)) reported that the Directive's requirements have not yet been transposed. One respondent (*GNERC* (Georgia)) indicated that the transposition is not applicable, as it is a non-EU country. Three respondents (*ECA* (Estonia), *MEKH* (Hungary) and *REWS* (Malta)) did not provide information on the status of DWD transposition. *ECA* and *MEKH* noted that the transposition of the Directive's requirements does not fall within the remit of their regulatory authorities.

Although not all respondents are from European Union Member States, the findings indicate that, in non-EU European countries as well, the development of water sector regulation is closely linked to the key principles of the Drinking Water Directive.

None of the respondents has an estimate of the economic impact of implementing the Drinking Water Directive.

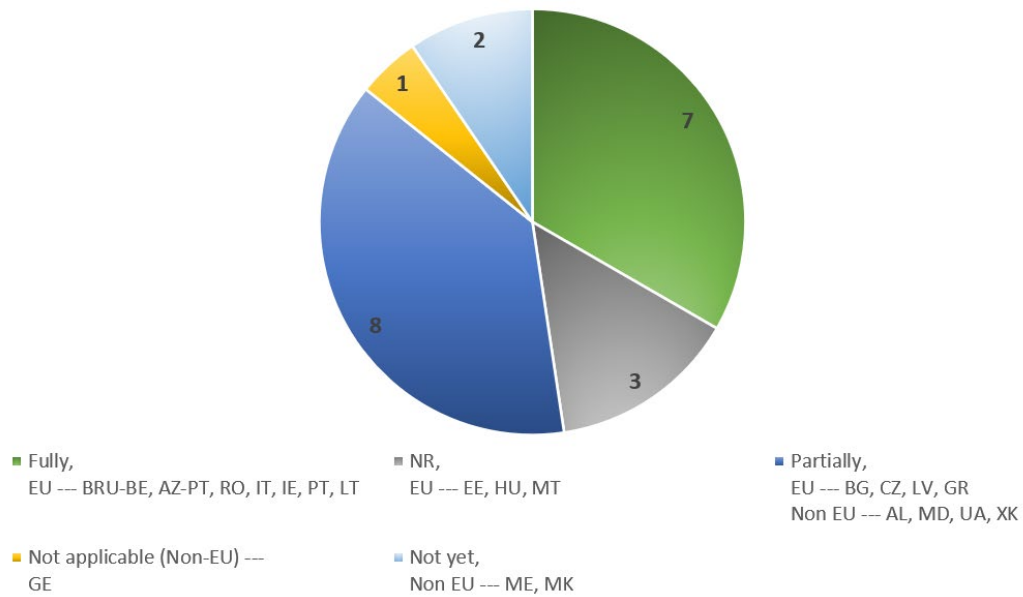


Figure 1. Status of DWD transposition

3 Section B – Risk-Based Approach (Art 7-9)

3.1 Legal Context and Regulatory Purpose

Directive (EU) 2020/2184 establishes a systematic and mandatory risk-based approach (RBA), encompassing risk assessment and risk management across the entire water supply chain, from the catchment area to the centralised water supply system (including abstraction, treatment, storage and distribution networks), as well as domestic distribution systems (Article 7).

The objective of this approach is to ensure that control measures and verification monitoring are proportionate to the actual risks identified. This approach replaces a predominantly parameter-based compliance model with an integrated system of risk assessment and risk management, aiming to prevent risks before they materialise and to ensure a high and consistent level of public health protection.

The risk-based approach also aims to ensure continuous exchange of information between competent authorities and water suppliers, thereby providing visibility over the entire water supply chain.

3.1.1 Scope and Structure of the Risk-Based Approach

The risk-based approach encompasses three interconnected levels:

- risk assessment and risk management at the level of catchment areas for abstraction points;
- risk assessment and risk management of water supply systems, covering abstraction, treatment, storage and distribution, to be carried out by water suppliers;
- risk assessment of domestic distribution systems.

Member States are responsible for ensuring that these elements are implemented in a coherent manner and that responsibilities are clearly allocated among the relevant stakeholders in accordance with national institutional and legal frameworks. While the Directive allows flexibility

in implementation to account for specific geographical constraints, such adaptations must not undermine drinking water quality or consumer health protection.

The Directive establishes a phased implementation timeline: catchment-level risk assessment and management are to be completed by 12 July 2027, while risk assessment at supply system and domestic distribution system levels is to be completed by 12 January 2029. All elements of the risk-based approach must thereafter be reviewed and updated at regular intervals not exceeding six years. These timelines do not preclude the obligation to take risk mitigation measures as soon as risks are identified.

Member States may exempt very small water suppliers from the obligation to carry out full supply system risk assessments, provided that drinking water quality is not compromised and that appropriate monitoring remains in place.

3.1.2 Catchment-Level Risk Assessment and Management

At the catchment level, Member States are required to ensure that risks to drinking water quality are identified, assessed and managed upstream, without prejudice to existing obligations under water protection legislation. Catchment-level risk assessment involves a systematic characterisation of abstraction areas, including their delineation and mapping, land use patterns, hydrological processes and, where applicable, safeguard zones. It also includes the identification of hazards and hazardous events that could adversely affect raw water quality and pose risks to human health.

Based on this analysis, Member States must ensure appropriate monitoring of relevant parameters, substances and pollutants in surface water, groundwater or raw water. The selection of parameters for monitoring is risk-driven and informed by identified pressures, existing water protection monitoring and information provided by water suppliers. Water suppliers carrying out such monitoring are required to inform competent authorities of significant trends or unusual results.

Where risks are identified, Member States must ensure that proportionate risk management measures are taken, with priority given to preventive action. These measures may include pollution prevention and mitigation actions in catchment areas, enhanced or targeted monitoring, and the establishment or adaptation of safeguard zones. The effectiveness of these measures is to be reviewed periodically.

The outcomes of the catchment-level risk assessment may also be used to adjust monitoring obligations at supply system level, including requiring additional monitoring or treatment, or, under clearly defined conditions, allowing a reduction in monitoring frequency or the removal of non-core parameters from routine monitoring.

3.1.3 Risk Assessment and Management of the Supply System

Risk assessment and risk management of the water supply system are to be carried out by water suppliers, under the oversight of competent authorities. This assessment builds on the results of the catchment-level analysis and covers the entire supply system, from abstraction through treatment and storage to distribution.

The supply system risk assessment identifies hazards and hazardous events that could compromise drinking water quality and human health, including risks related to system operation, infrastructure

condition, leakages, and the impacts of climate change. On this basis, water suppliers are required to define and implement control measures to prevent or mitigate identified risks.

Risk management measures at supply system level include operational controls, supply-specific monitoring programmes, and verification of treatment processes. Where disinfection is applied, suppliers must ensure its effectiveness while minimising the formation of by-products and avoiding unnecessary contamination from treatment chemicals. Compliance of materials, chemicals and filter media used in the supply system with applicable hygiene and safety requirements is also an integral part of supply system risk management.

The results of the supply system risk assessment provide the basis for adapting monitoring requirements. Competent authorities may allow adjustments to monitoring frequencies or parameter lists, or require additional monitoring, provided that such decisions do not compromise drinking water safety and are supported by risk assessment outcomes.

3.1.4 Domestic Distribution Systems

In addition to the catchment and supply system levels, Member States are required to ensure that risks associated with domestic distribution systems, as well as with related products and materials, are assessed, recognising their potential impact on water quality at the consumer's tap. The risk assessment shall include monitoring of the parameters listed in Part D of Annex I to the Drinking Water Directive.

Responsibility for compliance with these requirements depends on how water management and building management services are organised at national level. In most cases, this responsibility lies with building owners and managers.

3.2 Comparative Analysis of Replies

3.2.1 Implementation of RBA and Responsibilities

According to the questionnaire responses, a formal risk-based approach is already in place in 12 WAREG member countries.

At the same time, the practical implementation of the risk-based approach differs across its various components. For example, in the Czech Republic, the new requirement introduced by the Directive concerns the application of a risk-based approach to catchment areas, while a risk-based approach for water supply systems has been mandatory since 2017.

As the underlying issues that have driven the introduction of differentiated requirements in both the recast Directive and its previous versions are common across countries, different elements of the risk-based approach are also being gradually introduced in non-EU countries. For instance, in Kosovo all water service providers were required to develop water safety plans by the end of 2025. Albania has likewise introduced certain fragmented, yet nevertheless important, elements of the risk-based approach, such as risk assessments included in emergency plans, disinfection reports from utilities, and similar measures.

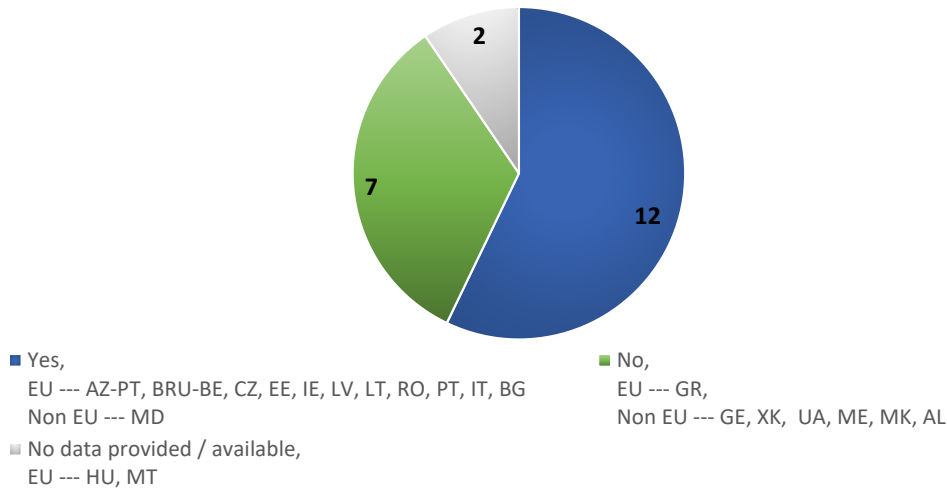


Figure 2. Answers to Question B1 concerning the existence of a formal risk-based approach (RBA) in respondents' countries

The responsibility for implementing the risk-based approach in water supply systems lies primarily with service providers; however, in four countries it is assigned to ministries or institutions subordinate to ministries (Estonia, Hungary, Romania and Ukraine). Moldova reported a division of responsibilities between the Ministry of Environment, the Ministry of Health, the Ministry of Infrastructure and Regional Development, the National Agency for Public Health and service providers.

It should be noted that responsibilities related to the implementation of the risk-based approach may be differentiated among different entities. Service providers are typically responsible for the practical implementation, mainly at the level of water supply systems. In addition, separate institutions or state-owned companies may be responsible for the practical implementation of the risk-based approach at the level of catchment areas (e.g. river basin authorities in Czechia or the State Limited Liability Company "Latvian Environment, Geology and Meteorology Centre" in Latvia). State or regional institutions often may be responsible for tasks at the national or regional level, such as planning, monitoring, evaluation and reporting.

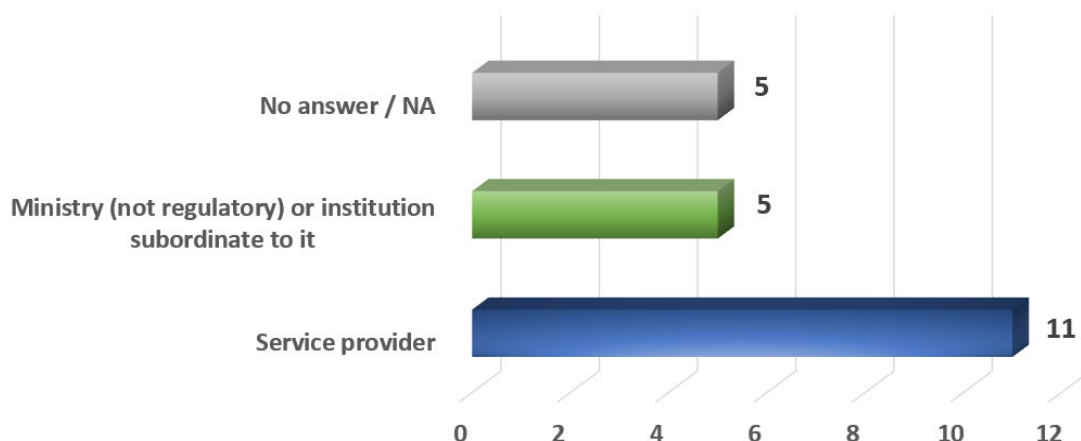


Figure 3. Answers to Question B2 on the entities responsible for implementing the risk-based approach (RBA)

Most respondents consider that service providers are sufficiently involved in the implementation of the risk-based approach, including in cases where primary responsibility lies with ministries or institutions subordinate to ministries.

Regulated service providers are, for the most part, involved in the implementation of the risk-based approach at the level of water supply systems, depending on national specificities regarding the scope of public water services.

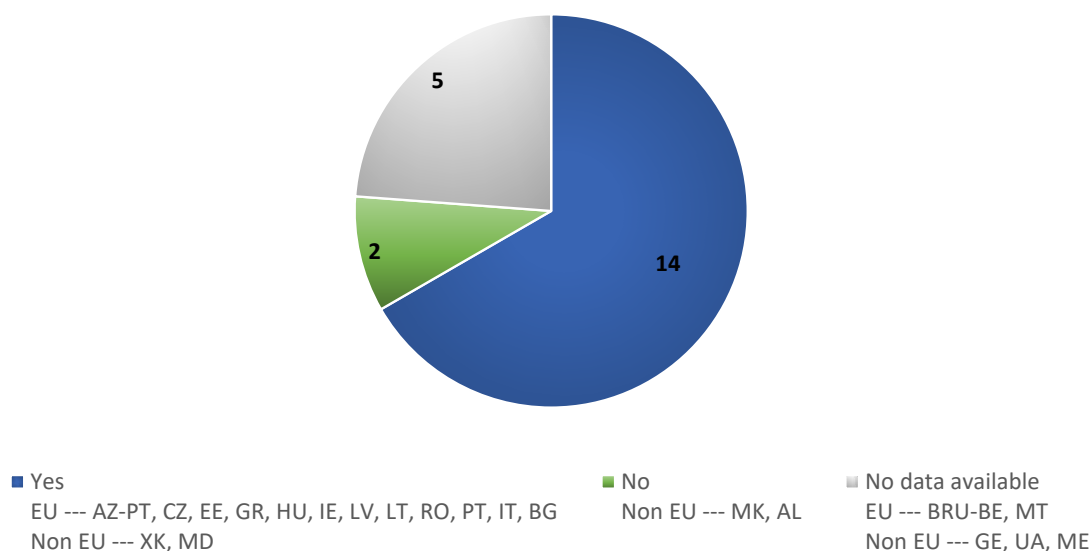


Figure 4. Answers to Question B3 concerning the sufficiency of involvement of water suppliers in the implementation of the risk-based approach (RBA) where responsibility lies with other entities

3.2.2 Regulator's Role in RBA Implementation

The role of the regulatory authority in implementing the requirements of the Directive varies significantly among respondents. While some regulators are directly involved in the implementation process, the majority have no direct role, primarily because responsibility for

regulation and monitoring lies with governments, their ministries, or other environmental and public health authorities.

A particularly significant role is played by ERSAR (Portugal) and ERSARA (Azores, Portugal), both of which are responsible for the approval of the risk-based approach and for monitoring its implementation; their responsibilities also include on-site inspections.

ARERA (Italy) is also directly involved through its participation in the National Supervisory Commission on Water Safety Plans, where it carries out activities related to the approval of risk assessments and risk management measures for water supply systems. In addition, ARERA provides economic incentives to support compliance with the provisions of the Directive through its Technical Quality Regulation.

While WSRA (Kosovo) is not directly responsible for implementing the risk-based approach, it supports compliance by monitoring the performance of service providers and coordinating with relevant institutions, such as the National Institute of Public Health and the Ministry of Economy.

At the same time, it should be taken into account that regulators responsible for setting water management tariffs, whether or not they have a direct implementation role, play an important indirect role in the implementation of the risk-based approach, as they are expected to ensure that justified costs related to its implementation are adequately reflected in tariffs. This conclusion was highlighted by PUC (Latvia) and RAAEY (Greece). In this context, RAAEY noted its role in monitoring the economic viability of water service providers and their compliance with existing legislative requirements.

3.2.3 Methodologies and Tools Used to Implement the RBA

With regard to the methodologies and tools used to implement the risk-based approach, several respondents highlighted the preparation of Water Safety Plans (ERSARA – Azores, Portugal; MZe – Czech Republic; CRU – Ireland; WSRA – Kosovo). These Water Safety Plans are generally based on the methodology developed by the World Health Organization.

More detailed descriptions of the tools and procedures applied were provided by RAAEY (Greece) and NERC (Lithuania), both of which also described a clear division of responsibilities across the entire water supply chain. Similar detailed information was provided by ARERA (Italy) and ERSAR (Portugal).

As ERSAR (Portugal) is responsible for the approval of the risk-based approach and for monitoring its implementation, it has developed recommendations – taking into account relevant European and international standards – for systematic hazard analysis and risk assessment covering the entire water supply system, from the area surrounding the abstraction point to the consumer's tap. In addition, ERSAR provides an Excel-based tool on its platform to enable water suppliers to structure and submit their risk assessments for approval.

CRU (Ireland) reported that implementation guidance for risk assessment and risk management of public and private water supplies at source was issued by the Environmental Protection Agency in 2025. (https://www.epa.ie/publications/compliance--enforcement/drinking-water/advice--guidance/EPA_Implementation_Guidance_Final.pdf).

PUC (Latvia) and ANRE (Moldova) referred to their national legislation regulating the procedures for the implementation of the risk-based approach.

Overall, the methodologies and procedures described by the respondents closely align with the requirements set out in Articles 7, 8 and 9 of Directive (EU) 2020/2184.

3.2.4 Challenges in Applying the RBA

Within their respective competences, respondents shared concerns regarding the main challenges that may affect or are already affecting the implementation of the risk-based approach. The most frequently highlighted challenges relate to financial and human resources. Human resource constraints were not only identified in terms of staff shortages at service providers or limited access to external expertise, but also in relation to insufficient technical competence and a lack of understanding of the importance of thorough implementation, rather than merely formal compliance.

RAAEY (Greece) noted that financial and human resource constraints also affect the maintenance of records and the availability of information necessary for proper risk assessment, particularly in cases where a service provider is required to assess more than one river basin simultaneously.

ERSAR (Portugal) identified insufficient technical capacity among some water suppliers—especially those managing small systems—as an obstacle to applying risk assessment and risk management concepts. To ensure continuity of the processes, ERSAR emphasised the importance of enabling future access for water suppliers to be monitoring data related to catchment areas at abstraction points. In this regard, for Portugal access to the IT platform of the Portuguese Environmental Agency, which is responsible for such monitoring, should be facilitated.

CRU (Ireland) also highlighted the need for sufficient time and resources to comprehensively address identified risks, as well as the importance of availability of relevant stakeholders to ensure that the necessary actions are effectively implemented.

WSRA (Kosovo) emphasised existing institutional fragmentation, including unclear roles and weak coordination between institutions, as well as data-related limitations such as underdeveloped digital infrastructure and limited access to historical data, all of which hinder the implementation of the risk-based approach. Similar concerns regarding coordination between multiple institutions, especially at territorial level, were also raised by ARERA (Italy).

4 Section C – Materials in Contact with Drinking Water (Article 11)

4.1 Legal Context and Regulatory Purpose

Article 11 of Directive (EU) 2020/2184 establishes an EU-wide framework for minimum hygiene requirements applicable to materials and products that come into contact with water intended for human consumption, replacing previous divergent national approval regimes. The overarching objective of this framework is to ensure a high level of protection of human health while supporting harmonisation and legal certainty within the internal market for such products.

Member States are required to ensure that materials used in new drinking water installations, as well as in repair or reconstruction of existing installations for abstraction, treatment, storage or

distribution, are safe for their intended use. Such materials must not compromise human health, adversely affect the organoleptic properties of water, promote microbial growth, or release contaminants into drinking water at levels exceeding what is necessary for their functional purpose.

4.1.1 EU-level Harmonisation through Implementing Acts

To ensure uniform application of these safety objectives across the Union, the Directive mandates the Commission to establish detailed minimum hygiene requirements through implementing acts, based on common principles set out in Annex V of DWD. These acts form the technical backbone of the system and cover three main elements:

- harmonised methodologies for testing and assessing starting substances, compositions and constituents, including migration limits and scientific preconditions;
- the establishment of European positive lists for different categories of materials (such as organic, cementitious, metallic and other inorganic materials), identifying substances authorised for use in products in contact with drinking water, together with conditions of use, migration limits and expiry dates;
- harmonised procedures for testing and approving final materials and products, including criteria for assessing their impact on water quality, such as substance migration, organoleptic effects and potential enhancement of microbial growth.

European positive lists constitute a central regulatory instrument under Article 11 of the Drinking Water Directive. These lists define the starting substances, compositions and constituents that may be used in materials and products intended to come into contact with drinking water. The initial lists were developed using existing national positive lists and associated risk assessments as a starting point, ensuring continuity while progressing towards EU-level harmonisation.

The European Chemicals Agency (ECHA) plays a key scientific role within this system. Economic operators or competent authorities may submit applications to ECHA for the inclusion or removal of substances from the positive lists, supported by risk assessment documentation. ECHA's Committee for Risk Assessment evaluates these applications and issues scientific opinions, which inform Commission decisions on updates to the positive lists. The lists are subject to periodic review and updating to reflect scientific and technological progress. Expiry dates are used as a mechanism to ensure that risk assessments remain up to date.

On 23 January 2024, the European Commission adopted Implementing Decision (EU) 2024/367 laying down rules for the application of Directive (EU) 2020/2184 by establishing the European positive lists of starting substances, compositions and constituents authorised for use in the manufacture of materials or products that come into contact with water intended for human consumption. This Decision established the first European positive lists and is based on the national positive lists notified by Member States to ECHA in 2021.

The Decision entered into force on 15 May 2024 and will apply from 31 December 2026. Until that date, national provisions continue to apply. Economic operators and national authorities may propose modifications to the lists from the end of 2025 onwards.

In addition, the Commission has adopted a set of delegated regulations further specifying key elements of the Article 11 framework. These include Commission Delegated Regulations (EU) 2024/369, 2024/370 and 2024/371, which respectively establish the procedure for including

substances in the European positive lists, define rules for the assessment and designation of conformity assessment bodies, and set out harmonised requirements for product marking. Together with the implementing acts, these delegated acts complete the regulatory framework for materials in contact with drinking water and support its consistent application across the Union.

The European positive lists are published on ECHA's website:

<https://chem.echa.europa.eu/obligation-lists/euPositiveList>.

4.1.2 Market Access, Conformity Assessment and National Flexibility

Once EU minimum hygiene requirements are in place, Member States must ensure that only products manufactured using approved final materials are placed on the market for use in contact with drinking water. Products complying with the harmonised requirements are to be recognised as meeting the general safety objectives of the DWD.

The framework is complemented by delegated acts defining appropriate conformity assessment procedures, taking into account proportionality and existing EU product assessment systems. These acts also provide for the designation of conformity assessment bodies where relevant. In parallel, the European Commission is tasked with facilitating the development of European standards for testing and assessment, as well as establishing harmonised product marking to indicate compliance.

Pending the full adoption of EU-level implementing acts, Member States may maintain or introduce national hygiene requirements, provided they comply with EU law. Moreover, even after harmonization, Member States retain the possibility to apply more stringent protective measures in duly justified cases, for example due to specific local raw water quality conditions, subject to notification requirements under the Directive (EU) 2015/1535 of the European Parliament and of the Council of 9 September 2015 laying down a procedure for the provision of information in the field of technical regulations and of rules on Information Society services (codification) (Single Market Transparency Directive).

The Directive requires the European Commission to review the functioning of the Article 11 system by 2032. This review will assess whether human health protection is adequate across the Union, whether the internal market for products in contact with drinking water operates effectively, and whether further legislative action is necessary.

4.2 Comparative Analysis of Replies

4.2.1 Existing Approval Process for Products and Materials in Contact with Drinking Water

During the response period, most respondents (13) reported that their countries already have a national approval system in place for materials and products in contact with drinking water, or that such system has been adopted but is not yet in force. Respondents were asked to briefly describe the current approval processes, and selected examples are presented below.

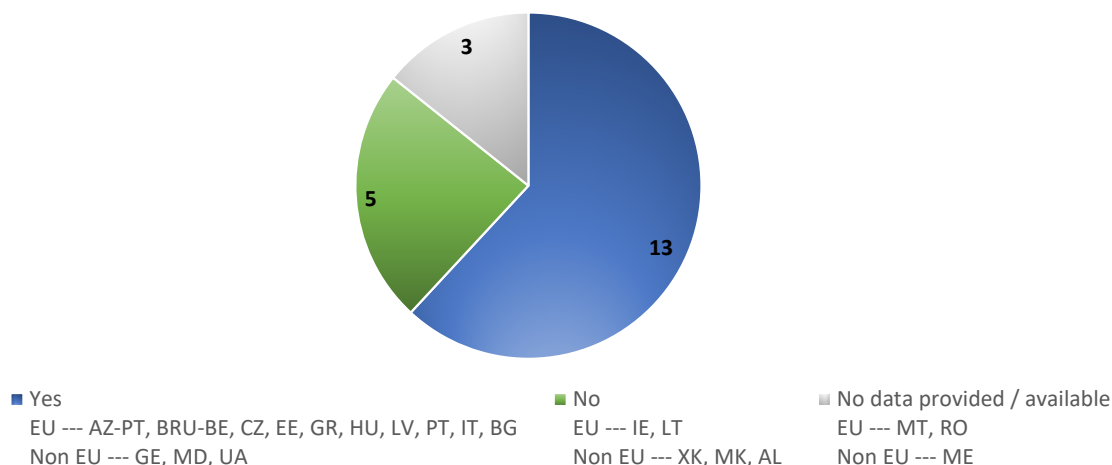


Figure 5. Answers to Question C1 on the existence of a national approval system for materials and products in contact with drinking water

In Portugal, including Azores (regulatory authorities ERSAR and ERSARA) the relevant regulation (Regulation No. 976/2025) was published on 7 August 2025 and will enter into force on 31 December 2026. This regulation covers both the substances and chemicals used for the treatment of water, and materials in the installations, from the collection, treatment, supply network, distribution network and land distribution system to the user’s tap or the point of use of water intended for human consumption. The approval process is based on accredited product certification. Substances and chemicals used for water treatment are not covered by the accredited product certification.

In Bulgaria (regulatory authority EWRC), approval of a material or product requires the submission of an application to the National Health Control Centre under the Ministry of Health, with final approval granted by the Ministry of Health.

In the Czech Republic (regulatory authority MZe), requirements for the approval of products and materials are set out in the Law on the Protection of Public Health (Law No. 258/2000 Coll., Section 5) and in Decree No. 409/2005 Coll. of the Ministry of Health on hygienic requirements for products in direct contact with water and for products used for water treatment. The legislation requires producers or distributors to test the hygienic safety of materials and products prior to placing them on the market, while detailed requirements and testing procedures are specified in Decree No. 409/2005 Coll.

In Hungary (regulatory authority MEKH), products that come into direct contact with drinking water or domestic hot water, as well as water treatment chemicals and filter materials, must be notified to and licensed by the National Center for Public Health and Pharmacy prior to their first distribution on the domestic market.

In Ireland (regulatory authority CRU) only products approved by the Drinking Water Inspectorate for England and Wales (DWI), or by an equivalent European approval system, may be used, and all conditions associated with such approvals must be complied with. The list of approved products is published on the DWI website (<https://www.dwi.gov.uk/drinking-water-products/resources-for-water-companies/approved-considered-products/>).

In Italy (regulatory authority ARERA), procedures and methods for the approval of materials and products set out in Commission Implementing Decision (EU) 2024/368 shall apply from 31 December 2026. During the transitional period, the provisions of Italian Decree No.174 of 2004 continue to apply.

In Latvia (regulatory authority PUC), the Consumer Rights Protection Centre is responsible for verifying compliance with minimum requirements for filtration devices and materials in contact with drinking water. This is carried out through market surveillance in accordance with Regulation (EU) 2019/1020 and the Law on Conformity Assessment.

In Ukraine (regulatory authority NEURC), the approval process is partially regulated through State Sanitary Norms and Rules, the Rules for the Technical Operation of Water Supply and Sewerage Systems of Settlements of Ukraine, as well as State Construction Norms.

Ten respondents indicated awareness of existing national positive lists of starting substances, compositions or constituents.

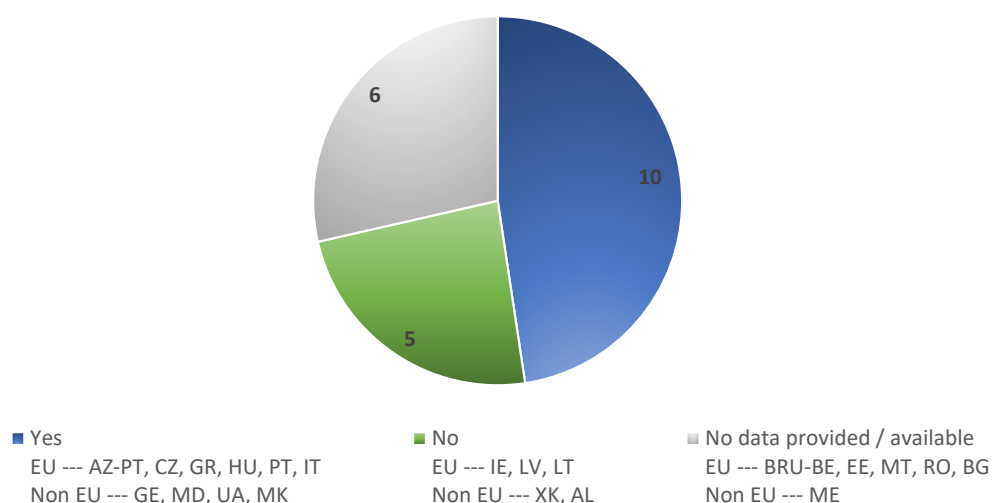


Figure 6. Answers to Question C3 concerning the existence of national positive lists of starting substances, compositions or constituents, including specific migration limits and scientific preconditions

4.2.2 Regulator’s Role

Only two regulatory authorities participating in the survey reported having a direct role in ensuring compliance with the Drinking Water Directive requirements concerning materials in contact with drinking water. Other respondents indicated that this responsibility lies with government bodies or environmental, public health or consumer protection authorities, or with other designated institutions.

Direct regulatory involvement is reported for ERSAR (Portugal) and ERSARA (Azores, Portugal), both of which are involved in setting the conditions of the national approval system for products in contact with water. Both authorities are members of the Technical Commission for the national approval system for products in contact with water intended for human consumption, together

with representatives of the Regional Directorate for Environment and Climate Action of the Autonomous Region of Madeira.

The Technical Commission issues opinions on:

- proposals for amendments to the Regulation of the national approval system for products in contact with water intended for human consumption (issued by ERSAR);
- the operating conditions of the national approval system for products in contact with water intended for human consumption;
- the recommendations to be published by ERSAR concerning products used in contact with water intended for human consumption from the perspective of protecting human health.

In addition, at the request of ERSAR, the Technical Commission issues opinions on any other matters falling within the scope of the national approval system for products in contact with water intended for human consumption.

4.2.3 Challenges in Implementation of Article 11 of the DWD

Although the majority of responding regulatory authorities are not directly involved in the implementation of the requirements set out in Article 11 concerning materials and products in contact with drinking water, nine respondents nevertheless shared concerns and observations regarding the challenges related to the adoption of the new requirements. These regulators identified several key challenges, including ensuring consumers' access to information, the capacity of accredited laboratories to test materials, the coordination and alignment of processes and inspections among stakeholders, the updating of testing and assessment procedures, and the financing of investments required to replace unsuitable materials.

ERSARA (Azores, Portugal) emphasised the need to improve the accessibility of information for consumers.

ERSAR (Portugal) highlighted that the initial challenge lies in ensuring the availability of national accredited certification bodies and accredited testing laboratories capable of supporting the implementation of the approval system. ERSAR expects national manufacturers of materials in contact with drinking water to respond positively to the new regulatory framework. However, the main challenge is anticipated to be addressing the numerous questions and uncertainties arising during implementation. To facilitate this process, the national regulation establishes a technical committee, coordinated by ERSAR, bringing together the main stakeholders involved. Another key challenge identified by ERSAR is ensuring the full implementation of the approval process along the entire "source-to-tap" chain. This will require an effective inspection mechanism coordinated with other competent authorities, as ERSAR's inspection remit is limited to public water suppliers.

MZe (Czech Republic) noted that, while responsibility for implementing Article 11 lies with the Ministry of Health and regional public health authorities, the new compliance assurance system is more complex and elaborate than the existing national framework. In addition, no notifying authority has yet been designated to initiate the required testing and assessment procedures.

RAAEY (Greece) identified key challenges related to inter-agency coordination, the capacity of laboratories and potential bottlenecks in testing processes, as well as the adaptability of service

providers, a challenge also highlighted in relation to other DWD requirements covered by this report.

WSRA (Kosovo) raised concerns regarding communication and coordination among the multiple institutions involved (including regional service providers, the National Institute of Public Health, WSRA and relevant ministries), noting the absence of clear coordination mechanisms.

PUC (Latvia), in its role as an economic regulator, expressed concerns regarding the financial implications of the investments required to replace unsuitable materials in existing infrastructure.

NERC (Lithuania) pointed out that some EU Member States, including Lithuania, do not currently issue national certificates of conformity for products in contact with drinking water. In accordance with Commission Delegated Regulation (EU) 2024/370 of 23 January 2024, products without national certificates of conformity must be assessed and declared compliant with minimum hygiene requirements by 31 December 2026. However, the procedures for designating conformity assessment bodies under this Regulation will also only take effect from that date. At present, there is no information on how many entities will be willing and able to carry out these activities, which may result in a temporary shortage of certification services.

CRU (Ireland) reported that the relevant governmental department (Housing, Local Government and Heritage) is currently conducting a study on the implementation of Article 11 of the Drinking Water Directive and the associated challenges.

5 Section D – Consumer Information (Article 17)

5.1 Legal Context and Regulatory Purpose

Article 17 of the Drinking Water Directive establishes a baseline for transparency, requiring that up-to-date data on water quality, pricing, and consumption be actively provided to the public without the need of request. This evolution is a direct response to the "Right2Water" European citizens' initiative, which highlighted a general lack of public awareness regarding water quality and water service performance. The Directive distinguishes between information that must be proactively shared to all consumers and more technical information that must be made available online (i.e. applications, website, social media, etc.). This article defines 5 categories of publicly accessible information, which are: (i) water quality, (ii) pricing, (iii) household consumption volume, (iv) comparison with other users, and (v) a link to websites.

Under Article 17, number 2, all persons supplied with drinking water must receive important information—such as drinking water quality, the water price per litre or cubic meter, and the household's consumption trends; and comparisons made from the water suppliers—at least once a year without having a request. Simultaneously, Annex IV requires that detailed operational data be made available on digital platforms, including identification of the water supplier, drinking water treatment methods, and the most recent water quality monitoring results. This tiered approach ensures that essential billing and quality information reaches every household, while comprehensive technical profiles remain accessible to interested stakeholders.

This framework represents a significant shift from traditional access to water information to a model of active involvement of consumers, aimed at enhancing public trust in tap water. To gauge current alignment with this standard across EU and non-EU countries, the questions of this Section

assess 5 core operational aspects, which are: (i) the information which is being available regarding quality and services, (ii) the specific platforms or tools used for publication, (iii) the frequency of these updates, (iv) the measures taken by each competent authority and (v) the role of these authorities concerning the compliance with the DWD requirements.

5.1.1 Public Access to Information

In line with Article 17 of Directive (EU) 2020/2184, Member States shall ensure that consumers receive adequate and up-to-date information on water intended for human consumption in the most appropriate and easily accessible way. All consumers shall be provided, at least once a year without prior request, with the price of drinking water supplied per litre and cubic metre, the volume consumed, and yearly consumption trends relative to average household consumption. This information, typically provided on water bills or through digital media, must include the identification of the relevant water supplier, the area of responsibility, and a description of the type of water treatment applied. Under the requirements of the Directive, this information must also include the most recent monitoring data for indicator parameters, such as hardness and minerals concentration. Alongside these, timely advice on health risks and preventive measures should be provided, in case that exceedance in threshold values occurs.

5.1.2 Data Accessibility

In line with the digital tools that the Directive introduces, it is clear that the information should not only be published but also must be up-to-date, and easily accessible online. For larger suppliers (serving more than 10.000 people or 2.000 m³ per day), additional annual data is required on system performance, including leakage percentages, ownership structures, and detailed analysis on the tariffs' structure (per cubic metre). To ensure long-term accountability, historical data for certain monitoring results and performance indicators must be available for up to 10 years upon justified request. National authorities (i.e. competent authorities), water suppliers etc. are assigned various oversight roles to ensure these requirements are met, ranging from data management to regulatory enforcement.

5.2 Comparative Analysis of Replies

5.2.1 Consumer Information on Water Quality and Service Provision

Concerning Question D1, as it was set and filled through the questionnaire, it focused on the data provided to the public, identifying the specific information—including water quality parameters and service cost—which is made available to consumers in accordance with the transparency requirements of Article 17.

It is important to state that, for the entire Section D, amongst the countries that submitted responses to the WAREG questionnaire, Malta's data is partial due to the fact that the new authority is currently being established, Montenegro did not provide any responses since the country is preparing for the transposition of the Directive during 2026. Also, non-responses in this report do not necessarily imply that the countries concerned lack the relevant information; they may simply not have reported it in the questionnaire.

Analysing the responses submitted in the Question D1, out of the 21 participating countries, 19 provided a response to Question D1, which concerns the type of information made available to consumers in line with the provisions of Article 17 of the Drinking Water Directive (EU) 2020/2184.

Water quality is the most addressed topic, with 19 countries explicitly providing relevant information in the form of laboratory results, public health surveillance, or regulatory reports. The responding countries include: (a) EU members, Azores-Portugal, Belgium–Brussels, Bulgaria, the Czech Republic, Estonia, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Portugal, Romania; and (b) non-EU members, Albania, Georgia, Kosovo, Moldova, North Macedonia and Ukraine.

Regarding pricing, 11 countries reported providing information, which are Azores-Portugal, the Czech Republic, Estonia, Italy, Latvia, Portugal, Romania and Hungary from the EU, and Albania, Kosovo and Ukraine from the non-EU group. Data on household consumption or related service volumes is provided by 12 countries, including Azores-Portugal, Greece, Hungary, Italy, Latvia, Lithuania, Portugal and Romania, in the EU, Albania, Georgia, Kosovo and Ukraine in the non-EU group. This consumption data is typically made available via water bills, online platforms or annual reports. Only Italy explicitly reports providing comparative consumption data, such as a household’s yearly consumption compared with the average. Seven members — Azores-Portugal, Estonia, Hungary, Latvia and Lithuania, in the EU, Ukraine and Kosovo, in the non-EU group — reported providing specific links to websites or portals for these publications. Lithuania (EU) has also stated that information provided regarding planned and unplanned outages, in accordance with ANRE Decision 249/2025, while Moldova provides information regarding planned and unplanned outages, ANRE Decision No 249/2025.

The following chart summarizes these patterns across the 5 information categories of Article 17.

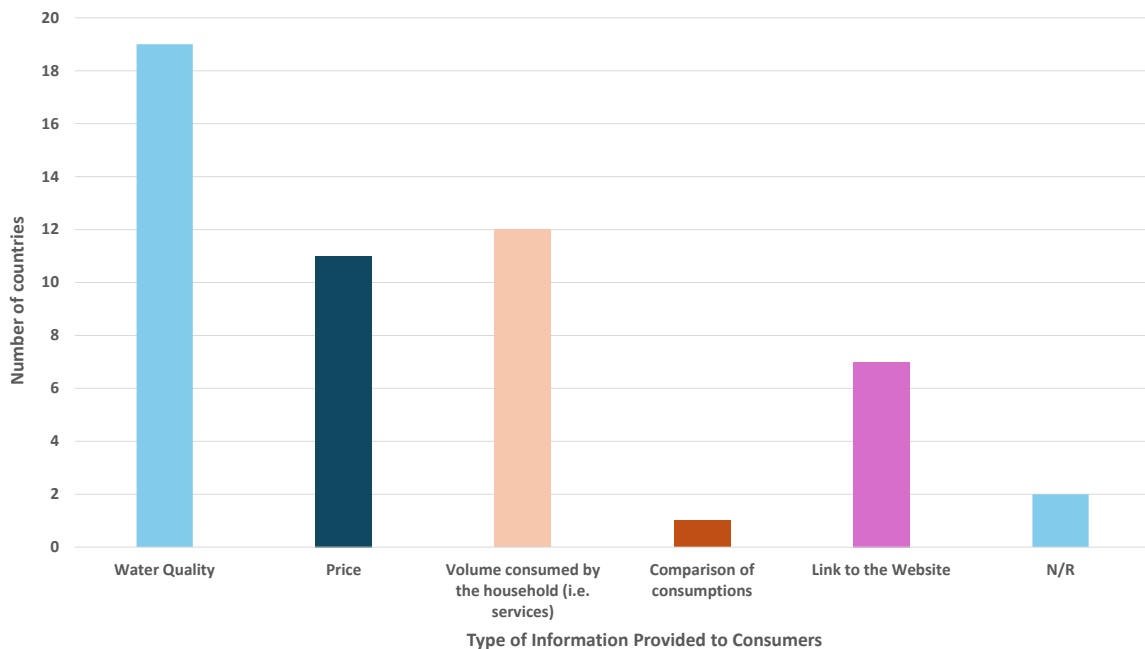


Figure 7. Answers to Question D1 concerning information made available to consumers regarding water quality and services

While most countries fulfil basic obligations regarding water quality data, transparency across other categories remains low. Only a few countries disclose pricing structures, just over half provide consumption data, and only 1 enables comparison with other users. Furthermore, 7 countries guarantee digital access through a public website. These findings indicate that, while the necessary foundations are in place, there remains scope for improved consistency, enhanced digital accessibility, and more consumer-oriented communication.

5.2.2 Platforms and Tools for Publishing Information on Water Quality and Services

In order to evaluate the accessibility of data, in accordance with the Article 17, the responses submitted by the competent authorities are categorized into 5 core topics of communication: (i) websites, (ii) social/public media, (iii) invoices or bills, (iv) national portals or aggregated platforms, and (v) direct notifications (e.g. SMS, mobile apps, email alerts). Out of the 21 participating countries, 19 provided a response to Question D2, which focused on through which platforms or tools the information published, describing those used to inform consumers about water quality and related services. The analysis conducted categorizes responses into 5 core means of communication: (i) websites, (ii) social/public media, (iii) invoices or bills, (iv) national portals or aggregated platforms, and (v) direct notifications (e.g. SMS, mobile apps, email alerts).

Eighteen countries out of 19 reported using official websites as the primary channel, including 13 EU countries, Azores-Portugal, Belgium–Brussels, Bulgaria, the Czech Republic, Estonia, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Portugal and Romania, and 5 non-EU countries Albania, Georgia, Kosovo, Moldova and Ukraine.

Seven countries rely on social or public media, including Azores-Portugal, Bulgaria, and Romania in the EU, Albania, Georgia, Kosovo and Ukraine in the non-EU group. Invoices or billing documents are used as personalized communication channels by 4 countries, and specifically in Italy and Portugal (EU), Moldova and Ukraine (non-EU). Seven countries – Greece, Latvia and Portugal (EU), Albania, Georgia, North Macedonia and Ukraine (non-EU) – use national portals or aggregated platforms. Finally, 3 countries – Italy (EU), Georgia and Ukraine (non-EU) – mention the use of direct notifications such as SMS alerts and smart applications.

The above-mentioned patterns are further illustrated in the following figure, which provides a comparative overview of the use of each communication channel across the participating countries.

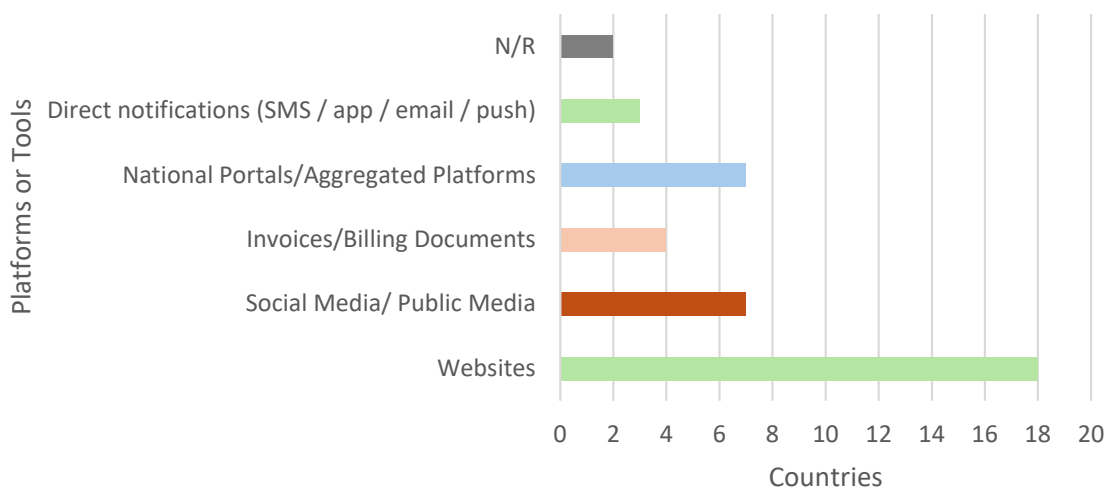


Figure 8. Answers to the question D2 concerning platforms through which information on Water Quality and Services is published

Considering the poll of responses submitted to Question D2, it can be surmised that official websites remain the main method of providing the public with water quality and related services information, used by 18 of the 21 countries. Seven countries also rely on social or public media, while 8 operate centralised portals that aggregate information from multiple providers. However, a limited number have opted towards delivering personalised communication: 4 countries use billing documents as the chosen channel, and only Italy (EU) and Georgia and Ukraine (non-EU) report adopting direct, real-time notification tools. Overall, the trend points toward improved digital transparency.

5.2.3 Frequency of Information Updates

In accordance with the mandate of the Article 17 for up-to-date information, Question D3 and the responses submitted concern the issue of the frequency by which information is updated to the public. In order to illustrate the countries' replies, they were grouped into 6 update-frequency categories: (i) monthly, (ii) quarterly, (iii) annual, (iv) real-time, (v) other (event- or monitoring-based) and (vi) no response (N/R). In total, 18 countries answered how often they update information for consumers.

Monthly updates are reported by 5 countries: Belgium-Brussels and Ireland (EU), Albania, North Macedonia and Ukraine (non-EU). Quarterly updates are used by Italy¹, Portugal and the Azores-Portugal (EU). An annual pace is the most common pattern, reported by 12 countries, including Bulgaria, the Czech Republic, Estonia, Greece, Ireland, Italy, Latvia, Lithuania, Portugal, from EU, Albania, Georgia and Kosovo, from non-EU countries.

Seven countries—Bulgaria, Hungary, Italy, Latvia and Portugal (EU), Georgia and Moldova (non-EU)—also describe real-time or immediate practices for posting information or notifications. Other

¹In Italy (EU) the response (at least once a year) refers to the Regulator ensuring the operator's compliance, but the information to the public is updated more frequently, at least in correspondence of billing obligations (minimum 2-3 times a year for smaller customers). In the case of digital applications, information is updated in near real time.

event-based schedules were noted by Bulgaria, Latvia, Lithuania and Romania (EU), Moldova and Ukraine (non-EU). Malta (EU), and Montenegro (non-EU) did not specify an update frequency.

In the following Figure the number of countries in each update-frequency category is presented in a quantitative way.

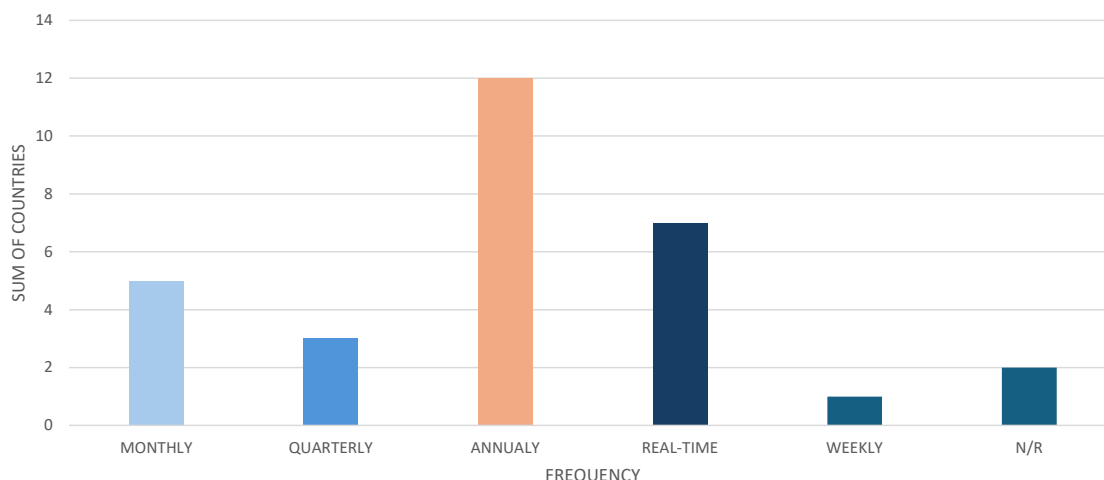


Figure 9. Answers to the question D3 concerning the information updates

Overall, both EU and non-EU respondents show a similar trend. Most countries in each group provide updates at least annually, with “real-time” reporting observed in 8 countries, 7 EU and 1 non-EU. A smaller number improve their accuracy with monthly or quarterly cycles. This means that the timeframe of the Directive is generally ensured, but more advanced, frequent and user-centered updating is occurring as well. In relation to Article 17 of Directive (EU) 2020/2184, which requires information to be public, up to date and easily accessible online, current practices indicate progress but also uneven implementation across countries.

5.2.4 Measures Considered to Improve Transparency

Respondents to Question D4 about measures to improve data transparency report ongoing or planned actions, which are grouped into 4 categories: (i) digital platforms, (ii) publication, (iii) regulation, and (iv) data integration. Based on the replies, 7 countries plan to improve or expand digital platforms, these being Azores-Portugal, Ireland and Latvia, from EU, Albania, Georgia, Kosovo and Ukraine, as non-EU members. These measures focus on making information easier to access online, for example by introducing a consumer’s portal, creating consumer dashboards or further developing tools such as Latvia’s Power BI solution for publishing and comparing operator data. In parallel, 8 countries – Belgium-Brussels, the Czech Republic, Estonia, Latvia and Portugal (EU), Kosovo, Moldova and Ukraine (non-EU) – emphasise publication-oriented measures. Their replies refer to adding more content to bills and websites, publishing pricing decisions and quality results and improving the clarity of information made available to consumers.

Regulatory action is mentioned by 5 countries, specifically Italy, Ireland, Portugal and Romania (EU) and Ukraine (non-EU). Here, the focus is on strengthening or clarifying the rules that govern transparency, for example through specific requirements on invoices, service charters, websites or

secondary legislation issued by the regulator. Two countries, Greece² (EU) and Kosovo (non-EU), highlight data integration between national authorities, aiming to connect information from ministries, regulators, utilities and health institutes in order to reduce fragmented reporting and give consumers a more coherent view of water services.

By contrast, Lithuania (EU) reports no additional measures, either because existing transparency is considered satisfactory or because no new actions are currently planned. Three countries – Malta (EU), Montenegro and North Macedonia (non-EU) – do not report any measures (N/R), while in Bulgaria³ and Hungary⁴ (EU), the situation is marked as not applicable, either because the regulator has no mandate over transparency tools or because the legal framework is still under review.

The figure below acts as a summary of the analysis of the responses, presenting the number of countries falling under each category of planned transparency measures.

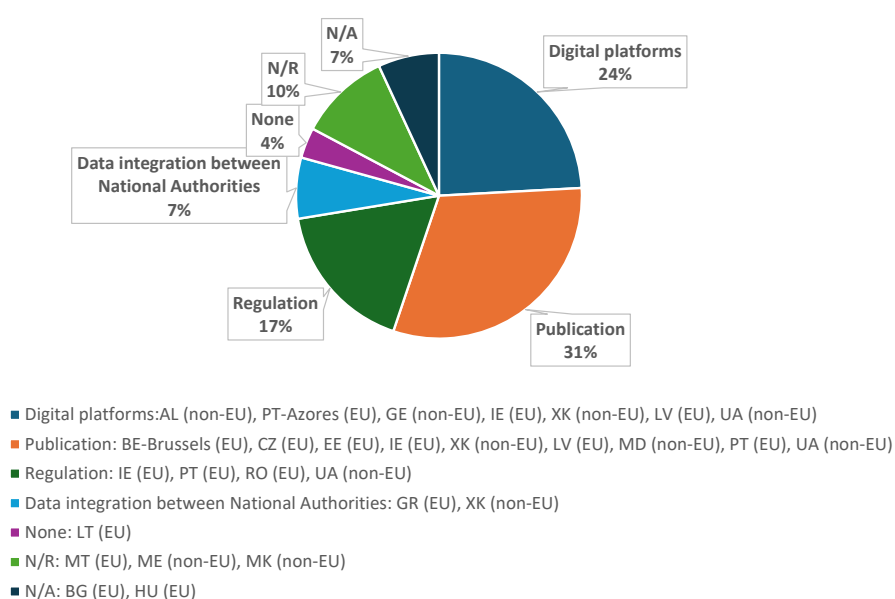


Figure 10. Answers to the Question D4 considering measures to improve transparency

5.2.5 Compliance Concerning Customer Information

Article 17, mandates a significant shift toward proactive consumer transparency, as referred above. The goal is to enhance public awareness of tap water. To ensure these requirements are met, national authorities are assigned various oversight roles, ranging from data management to regulatory enforcement. The responses provided by participating countries to Question D5, regarding the role of each authority in ensuring compliance with DWD requirements on customer information, indicated that digital platforms and publications are the main tools used by authorities. Specifically, Azores-Portugal and Latvia (EU), Albania and Georgia (non-EU), utilizing digital platforms, while Belgium, Estonia and Portugal (EU), Moldova (non-EU), prioritize direct

² Greece cites constraints (limited digital infrastructure and lack of human resources).

³ Bulgaria’s regulator has no competencies on publishing water quality data.

⁴ Hungary notes that the governing legislation is under revision.

publication. Ukraine and Kosovo (non-EU) use a hybrid approach combining both. Regulatory oversight and data integration serve as primary tools for the Czech Republic, Italy, Portugal, Romania (EU), and Ukraine (non-EU). Greece (EU) cited data integration as its core measure, despite challenges like limited infrastructure, while Kosovo (non-EU) also reported using data integration strategies. Also, Lithuania refers to the ability of NERC to impose fines for failure to publish information that is required to be public.

Reporting gaps remain for Malta (EU), Montenegro and North Macedonia (non-EU), while Ireland (EU) explicitly reported no specific measures. Bulgaria and Hungary (EU) noted the role was not applicable due to their current regulatory frameworks or pending reviews.

Overall, the submitted questionnaires highlight the need for future measures to improve transparency and define the authorities' role in ensuring compliance with the Directive's consumer information requirements can be reached.

6 Section E – Access to Water (Article 16)

6.1 Legal Context and Regulatory Purpose

Article 16 of the Directive establishes the mandate for ensuring universal supply, with focus being given to specific requirements for reaching vulnerable or marginalized groups. This provision represents a shift in the Directive's scope, moving from technical quality standards to a rights-based approach that addresses social equity and environmental sustainability. The regulatory purpose of this article is divided into three primary operational pillars. First, among these, is the identification and outreach to marginalized groups. Member States are required to identify people without access, or with only limited access, to water intended for human consumption, including those in informal settlements or nomadic communities. Beyond identification, authorities must assess options for improving access for these groups and ensure they are proactively informed about connection possibilities to the distribution network or alternative means of access.

The second issue is the promotion of tap water and infrastructure. In order to reduce reliance on bottled water and minimize plastic waste, Article 16 requires the promotion of tap water through the installation of both outdoor and indoor equipment (e.g., drinking fountains) in public spaces and administrative buildings. In some contexts, this extends to encouraging the provision of such water for free or for a low service fee in restaurants, canteens, and catering services.

The final pillar is about transparency and awareness. Authorities and water suppliers are encouraged to launch awareness campaigns to inform citizens about the high quality of tap water and the environmental benefits of its consumption. This is intended to increase consumer confidence and ensure that "access" is not just a physical connection, but a trusted and utilized public service.

6.2 Comparative Analysis of Replies

6.2.1 National Policies or Laws Ensuring Access to Water

To assess implementation across EU and non-EU regions, the questionnaire focused on whether national laws ensure access for all and the specific measures or affordability mechanisms used to support marginalized communities. Furthermore, the findings aim to assess how quality is

monitored via specific indicators, the platforms used to publish this information, and the frequency of updates. Finally, the responses clarify the measures being considered to improve transparency and the designated role of authorities in ensuring compliance with these DWD requirements on both water access and consumer information.

To the Question E1, most of the members surveyed, 18 out of 21, being Azores-Portugal , Brussels-Belgium, Bulgaria, the Czech Republic, Estonia, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Portugal and Romania (EU), Albania, Kosovo, Moldova, North Macedonia and Ukraine (non-EU), reported the existence of national policies or laws that ensure access to water for all, reflecting broad alignment with the objectives of Article 16 of the Drinking Water Directive (2020/2184). The inclusion in this list of both EU and non-EU countries indicates regional convergence on the principle of water as a universal right. It is important to state that, for the entire Section E, amongst the countries that submitted responses to the WAREG questionnaire, Malta's data is partial due to the fact that the new authority is currently being established and Montenegro did not provide any responses since the country is preparing for the transposition of the Directive during 2026. Also, non-responses in this report do not necessarily imply that the countries concerned lack the relevant information; they may simply not have reported it in the questionnaire.

Georgia (non-EU) did not submit a response to this question, making it difficult to assess their current regulatory standing on this issue, and Malta (EU), and Montenegro (non-EU) stated that the specific question was not applicable to them.

The chart below summarises the analysis of the responses, presenting the number of countries which have national policies or laws in place concerning access to water.

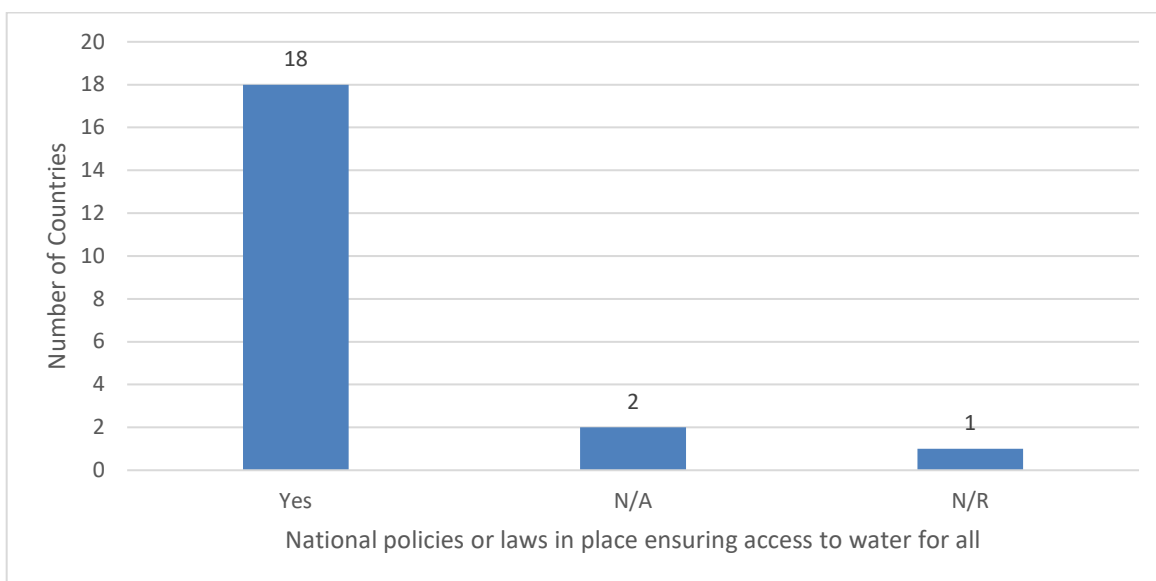


Figure 11. Answers to the Question E1 considering national policies or laws for access to water

Overall, the responses confirm that most national authorities have established a legal basis for ensuring equitable access to drinking water. While implementation may differ across countries, the presence of a legislative framework represents a significant step toward safeguarding the human right to quality drinking water. Nonetheless, the non-responses and partial alignment observed underline the need for further monitoring, capacity building, and policy harmonization across the region.

6.2.2 Support Mechanisms for Vulnerable and Marginalised Groups in Accessing Water

To assess measures for vulnerable and marginalised groups, **Article 16** effectively points to two distinct indicator categories, the first being that of Access and Inclusion – number 1, paragraphs a–d –, concerning identifying populations without/with limited access, assessing needs, informing them about network connections or alternative supplies, and taking the necessary measures to ensure access, and the second being Promotion and Public Use – number 2 –, whose focus is promoting tap-water use through public equipment/infrastructure and awareness–information actions. According to this categorization, as it is extracted from the Directive, the responses to Question E2 are grouped respectively.

Under Group 1 – Access and Inclusion, most countries reported action at the delivery end, but fewer cover the upstream steps. Most countries focus on direct measures to ensure access, including Azores-Portugal, Belgium-Brussels, Greece, Hungary, Ireland, Italy, Lithuania, Portugal and Romania (EU), Albania, Kosovo, Moldova and Ukraine (non-EU). Upstream identification of unserved populations is less common, reported only by Ireland, Italy and Latvia (EU), as well as Kosovo (non-EU), while the assessment of improvement options is cited by Ireland and Latvia (EU), and Kosovo (non-EU). Efforts to inform affected populations are limited to Ireland and Lithuania (EU). No responses were provided by Bulgaria and Malta (EU), Georgia, North Macedonia and Montenegro (non-EU). Concerning the Czech Republic (EU) is in *N/A* category⁵. Under Group 2 – Promotion and Public Use, only Ireland and Italy (EU) cover the full range of issues, including awareness campaigns and provision in public and dining spaces. The Azores-Portugal and Portugal (EU) run tap-water campaigns, while Latvia (EU) reports provision in public buildings. Amongst the rest, they either report no measures or give no response, indicating limited alignment with number 2 of Article 16 and available room to expand routine awareness efforts and practical provision points in public spaces.

The responses to Question E2 are summarised in the figure below for Group 1 – Access and Inclusion.

⁵ The Czech Republic provided a non-categorized answer, as this issue is addressed by the social system in society, which includes providing state housing support to vulnerable groups.

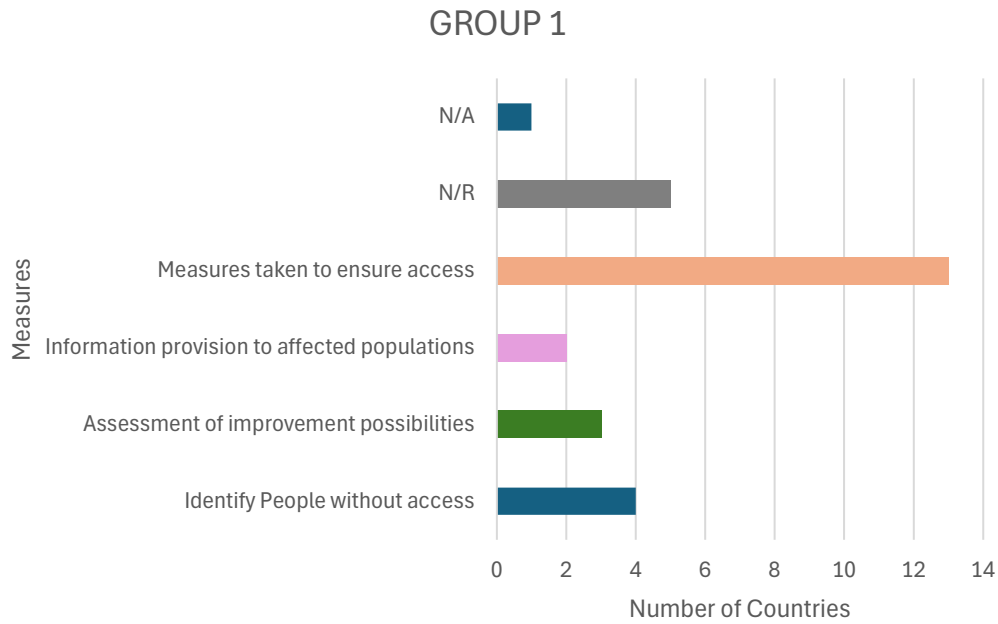


Figure 12. Answers to Question E2 concerning the measures in place to support vulnerable and marginalized groups in accessing water (Group 1)

To support vulnerable and marginalised groups in accessing water, measures are primarily aligned with Article 16, which categorizes actions into Access and Inclusion and Promotion and Public Use. While most of the reporting countries have implemented direct measures to ensure water delivery, there is a notable gap in efforts such as identifying populations without access, assessing improvement options, and informing affected communities. Consequently, while the framework for access is being established across much of Europe, it is surmised that there remains scope for enhancement in the comprehensive identification processes and communication strategies across several nations, which by itself suggests that reaching the most isolated or underserved groups remains a significant implementation challenge.

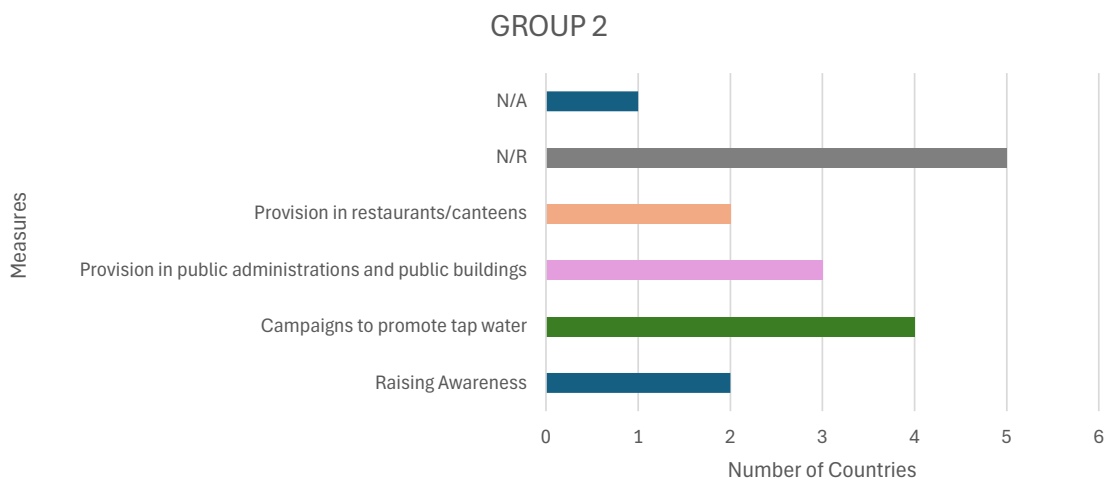


Figure 13. Answers to Question E2 concerning the measures in place to support vulnerable and marginalized groups in accessing water (Group 2)

In alignment with number 2 of Article 16) of the DWD, measures to promote public tap-water use have not been developed equally across most reporting regions, with a few countries demonstrating progress by implementing comprehensive strategies that include public awareness campaigns and the provision of water in public buildings and dining establishments, or more localized efforts focused on campaigns or infrastructure respectively. As identified above, the lack of response or reported measures from other nations highlights a significant opportunity to expand routine awareness initiatives and increase the availability of water access points in public spaces, suggesting that many countries are currently prioritizing physical access for vulnerable groups over broader promotional and public-use frameworks.

Finally, it is important to state that several non-responses possibly reflect either the absence of detail provided by the country or the fact that their submission focused on Group 1 measures rather than Group 2 actions.

6.2.3 Indicators for Monitoring Access to Water

Concerning the Question E3 of whether access to water is monitored, 14 countries answered “Yes” to using indicators, while 5 answered “No” and 4 marked the question as “Not Applicable”. EU countries reporting the use of indicators include Azores-Portugal, Bulgaria, the Czech Republic, Hungary, Italy⁶, Lithuania, Portugal and Romania, while Belgium-Brussels⁷, Estonia, Greece, Ireland and Latvia responded “No”. Additionally, the Czech Republic, Italy and Malta (EU) marked the question as “Not Applicable”. Non-EU respondents answering “Yes” include Albania, Georgia, Kosovo, North Macedonia, Moldova, and Ukraine, while Montenegro (non-EU) marked the question as “Not Applicable”.

Most of the countries that monitor access do so through coverage-type indicators, such as the share of the population or households connected to public supply, these being the Azores-Portugal, Bulgaria, Hungary, Lithuania, Portugal and Romania (EU), Albania, Georgia, Kosovo, North Macedonia and Ukraine (non-EU).

In practice, these indicators are described as water supply coverage, population served, number of residents connected to centralised infrastructure or similar connection-based measures. Two jurisdictions, Azores-Portugal and Portugal (EU), also added economic accessibility and affordability indicators, respectively, explicitly referring to indicators that capture the financial burden of water services on consumers. Moldova (non-EU), lastly, reports a national framework of performance indicators for water and sewerage services adopted by the Regulator.

An overview of these results is provided in the figure below, which summarises the distribution of the replies, and the main types of indicators used among the countries that report monitoring access.

⁶ Access to water indicators are not in Italian Regulator competency, but they are monitored by other institutions (coverage-type indicators, near to 100%).

⁷ Belgium-Brussels (EU) addressed this question by noting the very high drinking-water coverage in Brussels. Access to tap water is not a challenge in this highly urbanised region, where almost the entire population is connected to the drinking-water network. While no performance indicator currently exists for this aspect, Regulator is discussing its development with the main operator to allow (inter)national comparisons.

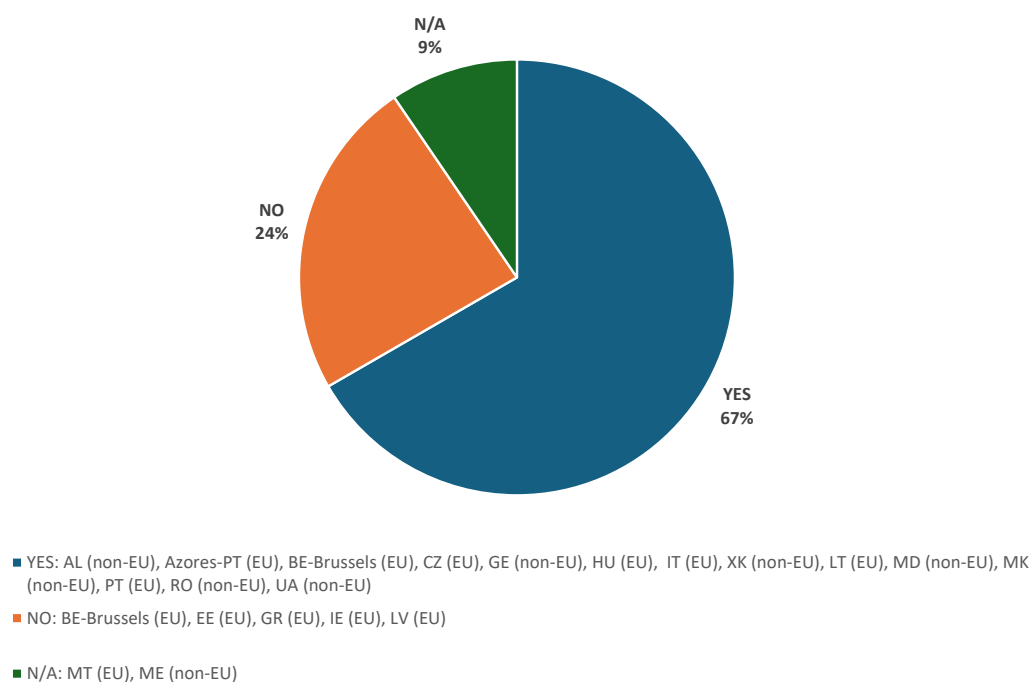


Figure 14. Answers to Question E3 concerning whether access to water is monitored by indicators

In the context of Article 16, this pattern shows that both EU and non-EU countries already use coverage indicators to identify who has access and where gaps remain, but only very few have moved towards a systematic monitoring of affordability for vulnerable groups. Strengthening and combining these two dimensions – coverage and economic accessibility – would allow a more complete assessment of “access for all” as required by Article 16.

6.2.4 Nationally Implemented Affordability Mechanisms Ensuring Access to Water

The replies describe a range of affordability measures designed to support access to water. Sixteen countries provided specific information, while 5 – Estonia, Ireland and Malta (EU), Montenegro and North Macedonia (non-EU) – reported No Applicable data for Question E4. These mechanisms are organized into 4 categories involving: (i) price relief and social tariffs, (ii) regulatory affordability checks and indicators, (iii) infrastructure, public access and service expansion and (iv) legal frameworks.

Among EU countries, 10 out of 16 describe at least one affordability mechanism, which are Azores-Portugal, Belgium–Brussels, Bulgaria, Greece, Hungary, Italy, Latvia, Lithuania, Portugal and Romania (EU), while 3 out of 16 – Estonia, Ireland and Malta (EU) – replied “No Applicable”. Among non-EU countries, 5 out of 7 – Albania, Georgia, Kosovo, Moldova and Ukraine – report affordability mechanisms, and 2 out of 7 – Montenegro and North Macedonia – replied “No Applicable”.

Concerning price relief and social tariffs, Belgium-Brussels (EU) reports financial aid for vulnerable persons to pay water bills. Greece (EU) cites Law 4001/2011 and JMD 103755/2994/2024 under which providers, after economic/technical reporting, may set more targeted prices for vulnerable customers as social tariffs. Hungary (EU) notes a statutory reduction of household utility fees (Act LIV of 2013). Italy (EU) reports, via Authority of Energy, Networks and Environment (ARERA) Resolution 897/2017/R/IDR (as updated), an automatically applied “social water bonus” since 2021 covering 18.25 m³ per inhabitant per year with favoured tariffs (water, sewerage, wastewater

treatment) adjusted for family size. Ukraine (non-EU) states that vulnerable consumers receive benefits and subsidies for public utility services, including centralized water supply, in monetary form. Georgia (non-EU) reports government subsidies for households below the poverty line. Finally, Albania (non-EU) notes that affordability measures are included in the National Policies.

Respectively, for regulatory affordability checks and indicators, Bulgaria (EU) states that the Energy and Water Regulatory Commission (EWRC) cannot approve tariffs if the cost for 2.8 m³ per person per month exceeds 2.5% of average income. Portugal (EU) notes an indicator that considers parameters such as the invoice charges for a household with an average monthly consumption of 10 m³, as well as the average disposable income in the water suppliers' area of responsibility.

Additionally, concerning infrastructure, public access points and service expansion, the Czech Republic (EU) answer concerns state subsidy policies to support the development of water supply systems for public needs, Kosovo (non-EU) indicates that donor and government investments have been the main mechanism for expanding service coverage, while Romania (EU) reports investments for expansion and rehabilitation of water networks and Latvia (EU) notes publicly available standposts and centralized services for social homes. Lithuania (EU) cites Article 12(2) of the Law on Drinking Water Supply and Wastewater Management, which mentions municipal duties in ensuring access via public equipment, to organize alternative supplies, to inform self-suppliers about health risks and protective measures, and to safeguard access for vulnerable and marginalised groups. Also, Azores-Portugal (EU) reports public drinking fountains.

Finally, respectively to the legal frameworks establishing mechanisms, Moldova (non-EU) references mechanisms established under Law 182/2019 on Drinking Water Quality (issued by 2021), Law 303/2013 on the Public Water Supply and Sewerage Service, Water Law 272/2011, Government Decision 1063/2016 which approves the National Program for the Implementation of the Protocol on Water and Health in the Republic of Moldova for the years 2016-2025, and Government Decision 199/2014 which approves the Water Supply and Sanitation Strategy (2014-2030).

The data reveals a multifaceted approach to water equity, where European and non-European countries balance physical accessibility with economic protection. While the framework set by Article 16 provides a clear roadmap, implementation is uneven; most members succeed in direct service delivery to vulnerable groups but often fail to conduct the necessary outreach and identification required to reach the most marginalized. **Furthermore, the shift from providing water to actively promoting its public use and affordability is still at its early stages.** The prevalence of social tariffs and regulatory price caps in participating countries demonstrates a proactive stance, yet the lack of reported data from several countries suggests a need for more standardized reporting and a more robust integration of public-use infrastructure into national water strategies.

6.2.5 Role of Authorities in Ensuring Compliance with DWD Concerning Access to Water

Question E5 refers to what respondents reported about their authority's role in ensuring compliance with the DWD on access to water. The analysis relies exclusively on country-submitted answers and records roles exactly as described (e.g., regulation, tariffs, monitoring, no competence, etc.).

Governance is characterized by a wide distribution of institutional responsibilities. Among EU respondents, roles primarily include regulation, as reported by the Azores-Portugal, Belgium-

Brussels, Hungary, Greece, Italy, and Portugal. Monitoring is cited by the Azores-Portugal, the Czech Republic, Hungary, Greece, and Lithuania, while tariff oversight is a role in Belgium-Brussels, the Czech Republic, Hungary, Lithuania and Romania. Several countries indicated no competencies, with Bulgaria, Estonia, Hungary and Latvia responding that the question is “*Not Applicable*” to them and Ireland stating that CRU has no role regarding access to water, while Malta did not provide a response to this question. Non-EU respondents demonstrate a more integrated approach, with regulation being reported by Albania, Kosovo, Moldova, and Ukraine, monitoring by Albania, Kosovo, Moldova and Ukraine, and tariffs by Kosovo and Ukraine. Georgia, North Macedonia, and Montenegro provided no information.

Summarizing, EU replies most frequently cited regulation, with fewer references to monitoring and tariffs and several “*Not Applicable*” answers, whereas non-EU replies recorded regulation and monitoring in a smaller but comparable share and fewer tariff functions cases. Overall, both groups describe mixed institutional coverage of the functions that underpin access provisions under the Directive (EU) 2020/2184.

An overview of these results is provided in the figure below, which summarises the distribution of the replies.

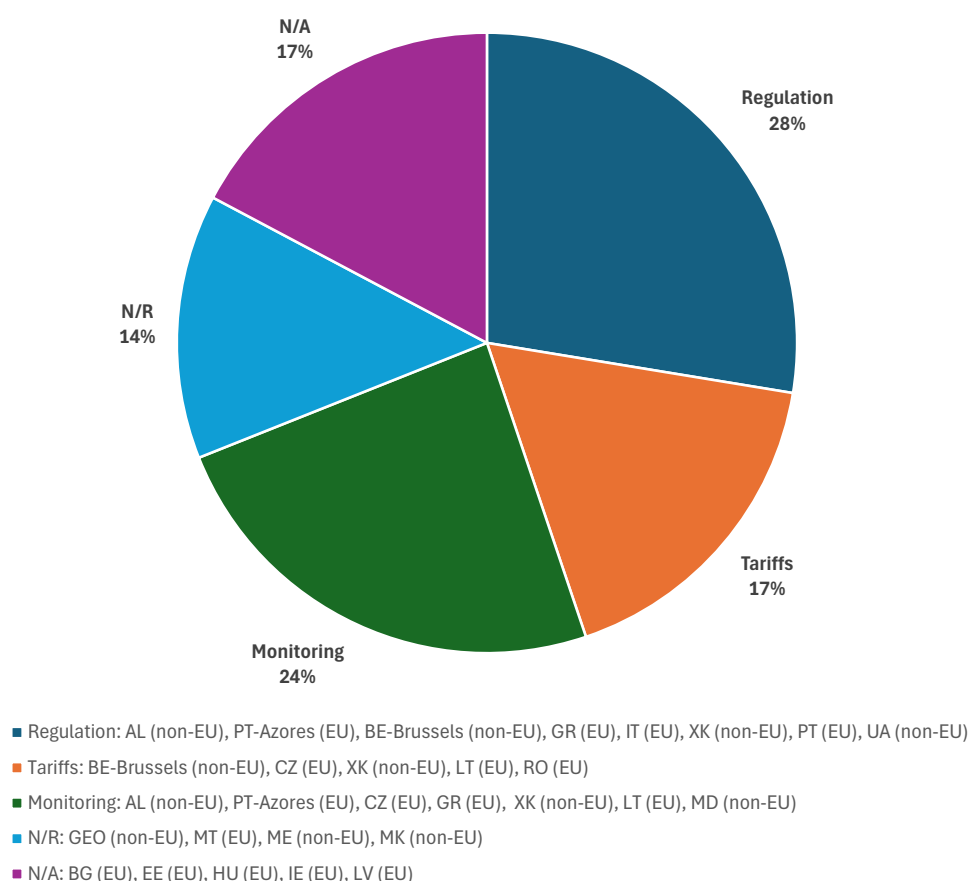


Figure 15. Answers to Question E5 concerning the role of Authorities in ensuring compliance with DWD

Governance on water access is characterized by a wide distribution of institutional responsibilities, with authorities primarily focusing on regulatory oversight rather than direct economic or technical

monitoring. Within the EU, oversight is heavily weighted toward setting legal frameworks, though specific tools like tariff setting and quality monitoring are only performed by a few countries. Non-EU respondents demonstrate a more integrated approach by simultaneously managing regulation, monitoring, and tariff structures. However, a significant portion of both groups reported either a complete lack of competence or provided no information, indicating that the institutional mechanisms required to enforce the DWD are not yet universally established or clearly defined at the national level.

7 Section F – Leakages (Article 4)

7.1 Legal Context and Regulatory Purpose

Article 4 of Directive (EU) 2020/2184 introduces a common EU-level framework for assessing water losses and the potential for their reduction. In line with the principles of Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy, Member States are required to assess the level of water leakage within their territory and to evaluate opportunities for improving water efficiency in distribution systems. This assessment shall be carried out using the Infrastructure Leakage Index (ILI) or another appropriate and comparable methodology.

The assessment must consider relevant public health, environmental, technical and economic considerations and shall cover at least water suppliers delivering a minimum volume of 10.000 m³ of water per day or serving at least 50.000 inhabitants. The results of this assessment had to be reported to the European Commission by 12 January 2026.

The reporting template comprises both mandatory and optional data fields related to water losses. Mandatory information includes, inter alia, the length of water mains, system input volume, the share of metered system input volume, and revenue water. Optional data fields cover additional characteristics of the water supply system, such as the number of service connections, volumes of abstracted raw water, imported raw water, imported treated water, treated water at treatment facilities, and real losses.

The calculations embedded in the template are based on the water balance framework developed by the International Water Association (IWA). At the same time, the template allows flexibility in defining the scope of reported data, enabling Member States to adapt reporting to the availability and reliability of national data.

In addition to quantitative data, the template includes free-text sections intended to capture qualitative information on the potential for reducing water leakage. These sections allow Member States to describe relevant public health, environmental, technical and economic aspects. However, no common guidance has been established for completing these qualitative sections, and the level of detail and interpretation therefore will vary across Member States.

To further operationalise the framework, the Directive provides for the adoption of a delegated act by the Commission by 12 January 2028. This delegated act will establish a reference threshold for water leakage levels, based on the ILI or an equivalent method, above which Member States will be required to take corrective action. The threshold will be defined using the leakage assessments submitted by Member States and the resulting EU-wide average leakage level.

Where the leakage level in a Member State exceeds the threshold set out in the delegated act, that Member State will be required to submit a national action plan to the Commission within two years of the adoption of the delegated act. The action plan shall set out a coherent set of measures aimed at reducing water losses, considering national circumstances and the outcomes of the leakage assessment.

7.2 Comparative Analysis of Replies

7.2.1 Transposition of DWD Requirements on Water Leakages

Regarding the transposition of DWD requirements on leakage reduction, nine regulatory authorities reported that leakage reduction targets are already included in their national legislation. For 5 regulatory authorities, such regulatory requirements are currently under development. Six respondents indicated that no targets are set in legislation, while one regulatory authority could not provide information on this issue. The CRU (Ireland) reported that leakage reduction targets are established via regulatory framework with the water utility and are not set in legislation.

According to the information available to the regulatory authorities, the EU Member States represented by the respondents are expected to report to the European Commission on the overall situation of more than 1.028⁸ water supply systems with regard to water leakage levels.

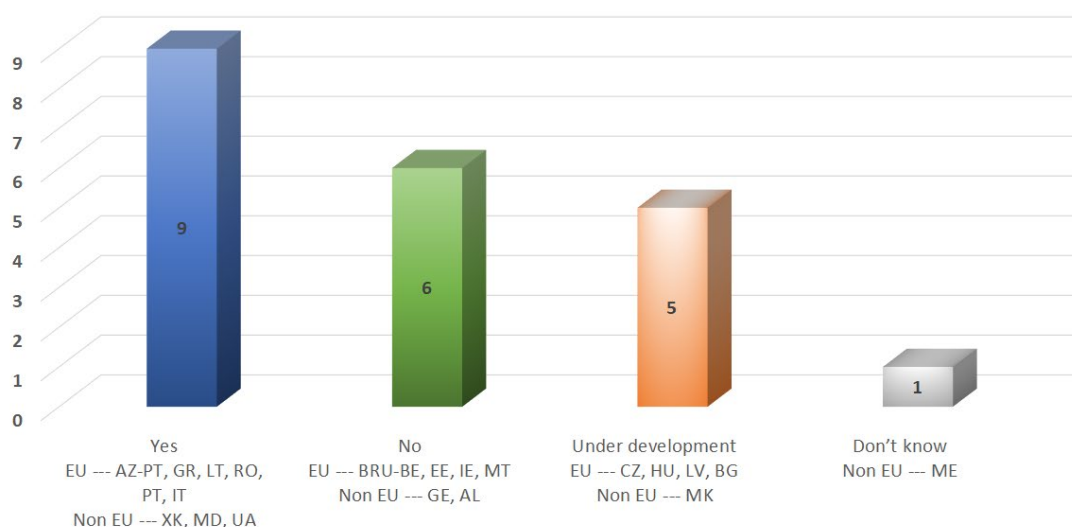


Figure 16. Answers to Question F1 concerning the inclusion of leakage reduction targets in national or regional legislation in line with Article 4 of the Drinking Water Directive

Most respondents (15) reported that national or regional legislation already includes provisions for assessing leakage levels in water supply systems covered by the DWD. Twelve regulatory authorities indicated that legislative requirements apply to an even broader range of water supply systems that are required to assess leakage levels.

⁸ Portugal (ERSAR) reported that 315 water suppliers, both bulk and retail, are subject to assessment and reporting to the European Commission with regard to leakage levels. However, this figure does not reflect the number of individual water supply systems, which is expected to be higher.

As leakage assessment is a key step towards enhancing the efficiency of water supply services and promoting the sustainable use of water resources, the ongoing development of more harmonized legislative approaches in this area can be considered a positive trend.

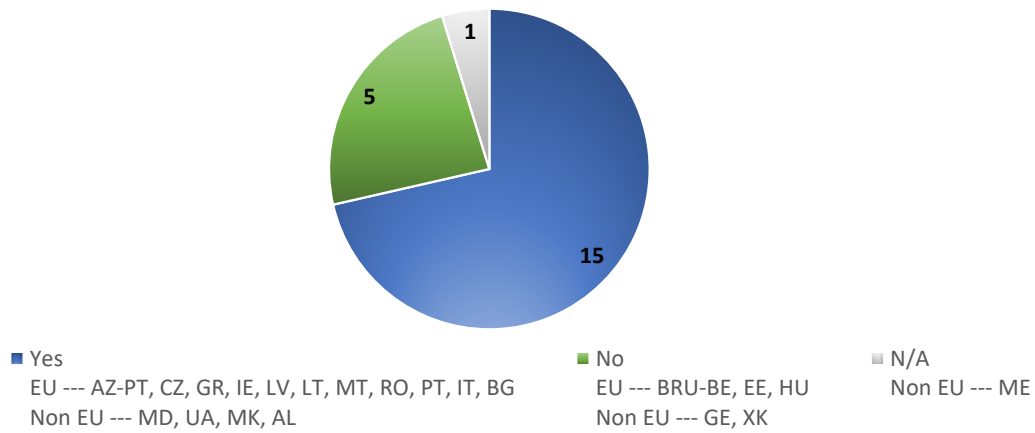


Figure 17. Answers to Question F2 concerning the inclusion of provisions for assessing leakage levels in water supply systems covered by the Drinking Water Directive

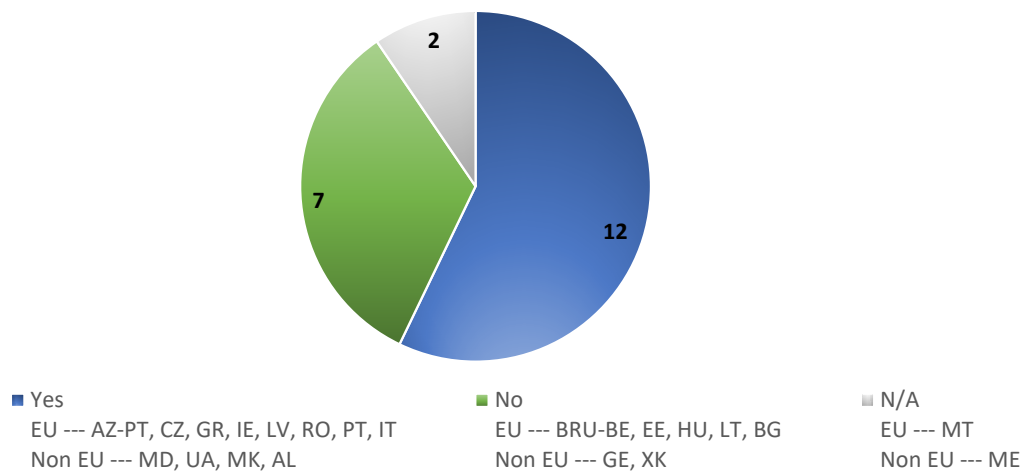


Figure 18. Answers to Question F3 concerning the inclusion of measures for assessing leakage levels for a broader range of water supply systems beyond those covered by the Drinking Water Directive

7.2.2 Entities Involved in the Control of Water Leakage Levels

Ten respondents reported that regulatory authorities are responsible for controlling water leakage levels (MZe – Czech Republic; GNERC – Georgia; WSRA – Kosovo; PUC – Latvia; ANRE – Moldova; ANRSC – Romania; ERSAR – Portugal; ERRU – Albania; ARERA – Italy; EWRC – Bulgaria).

In several cases, other institutions are also involved in monitoring and control, in addition to the regulatory authority, in line with their respective competences. For example, in Greece the primary responsibility lies with decentralised administration and regional environmental authorities at the local level, while the Ministry of Environment and Energy, the Ministry of Health, the Ministry of Agriculture and RAAEY are also involved. ANRE (Moldova) reported that responsibility for controlling leakage levels is also shared by service providers and local authorities. ERRU (Albania) noted that the Ministry of Infrastructure and Energy has a policy-making role. Similarly, in Latvia (PUC), and likely in some other countries, the policy function lies with the Ministry of Climate and Energy, which in Latvia is also responsible for reporting data to the European Commission.

ECA (Estonia), MEKH (Hungary) and NEURC (Ukraine) reported that ministries are the main authorities responsible for water leakage control.

ERSARA (Azores, Portugal), ERSAR (Portugal), BRUGEL (Brussels, Belgium), CRU (Ireland), NERC (Lithuania), REWS (Malta) and REC (North Macedonia) indicated that service providers are responsible for controlling water leakage levels.

The role of regulatory authorities in ensuring compliance with the DWD requirements related to the assessment of water leakage levels varies significantly across countries. Examples of regulatory involvement are presented below.

In the Azores-Portugal, ERSARA provides a support programme for water balance assessment and water loss control and organises awareness-raising campaigns to promote reduced water consumption.

In Georgia, GNERC monitors the Infrastructure Leakage Index and the share of non-revenue water and has established Investment Appraisal Rules that require service providers to dedicate funds to improving key performance indicators, including leakage indicators, when presenting investment proposals.

In Greece, water service providers report their estimates of water leakage levels and potential reduction measures to the Ministry of Environment and Energy and to RAAEY. In addition, they submit five-year investment plans to RAAEY covering new works and upgrades of drinking water, wastewater and stormwater networks, including documentation and analysis of network losses. Water balances are reported annually in accordance with the IWA methodology.

In Hungary, MEKH participates in the work of a professional committee established by the Ministry of Energy pursuant to Act CCIX of 2011 on Water Utility Services (Section 13/B).

In Latvia, PUC collects and monitors data on leakage levels through annual reports submitted by regulated water service providers via an online platform. Leakage levels are also assessed in the context of draft tariff evaluations. As PUC maintains a detailed and validated database of technical and financial data on public water services, Cabinet Regulation No. 174 on the Provision and Use of Public Water Management Services requires service providers to calculate and report the water loss coefficient annually to PUC, including those obliged to report data to the European Commission. PUC publishes annual data on average leakage levels for each regulated service provider on its website as part of the sector's financial and technical performance report, with data available since 2016 to all interested parties, including the Ministry of Climate and Energy, which is responsible for reporting data to the European Commission. The setting of leakage reduction

targets is planned as a next step, with initial benchmarking and public disclosure of performance data foreseen.

In Lithuania, NERC is responsible for collecting data on water leakage, which are used in price regulation. Under the Methodology for Setting Prices for Drinking Water Supply and Wastewater Services, drinking water suppliers are responsible for water loss control in the supply chain. When setting regulated base prices, NERC does not allow the inclusion of more than 20% losses in distribution networks prior to customer connections, or more than 2% losses in the internal networks of apartment buildings.

In Malta, REWS monitors the Infrastructure Leakage Index through the annual Licence Monitoring Report submitted by the Water Services Corporation and may request recommendations for improvement where performance deteriorates.

In Moldova, ANRE approves targets for reducing water losses and defines the level of losses accepted for tariff-setting purposes, with the aim of reducing overall water leakage.

ANRSC (Romania) acts as the reporting authority for submitting leakage level data to the European Commission.

In Ukraine, NEURC's role includes setting regulatory standards and requirements, monitoring and reporting water consumption and leakage levels, supporting the implementation of EU legislation, and promoting investment in network modernisation.

ERSAR (Portugal) has a comprehensive monitoring framework under which water suppliers are required to report all IWA water balance input data. ERSAR promotes water efficiency by setting maximum acceptable levels of water losses for good service quality and by developing recommendations on mains rehabilitation, network replacement costs and good practices in water efficiency.

Monitoring functions are also performed by ERC (North Macedonia).

ARERA has a comprehensive monitoring framework under which water suppliers are required to report all IWA water balance input data and promotes water efficiency by setting the improvement targets for each category ("class") of service providers. Targets are associated with a premium/penalty mechanism, in which operators are rewarded when reaching targets and penalised when they have not. The incentive mechanism is completed by giving award (and symmetrically penalties) to the 3 best operators in absolute terms (3 worst penalised) and to the 3 operators demonstrating the largest improvements (3 worst performances penalised). In addition, operators must show in the infrastructure programs the specific actions they are planning in order to improve their specific situation and submit it for tariff approval.

In total 10 respondents (ERSARA – Azores, Portugal; BRUGEL – Brussels, Belgium; RAAEY, Greece; CRU, Ireland; REWS, Malta; ANRSC, Romania; ARERA, Italy; EWRC, Bulgaria; ANRE, Moldova and NEURC, Ukraine) reported that their regulatory authorities have a structured programme in place to control and reduce water losses.

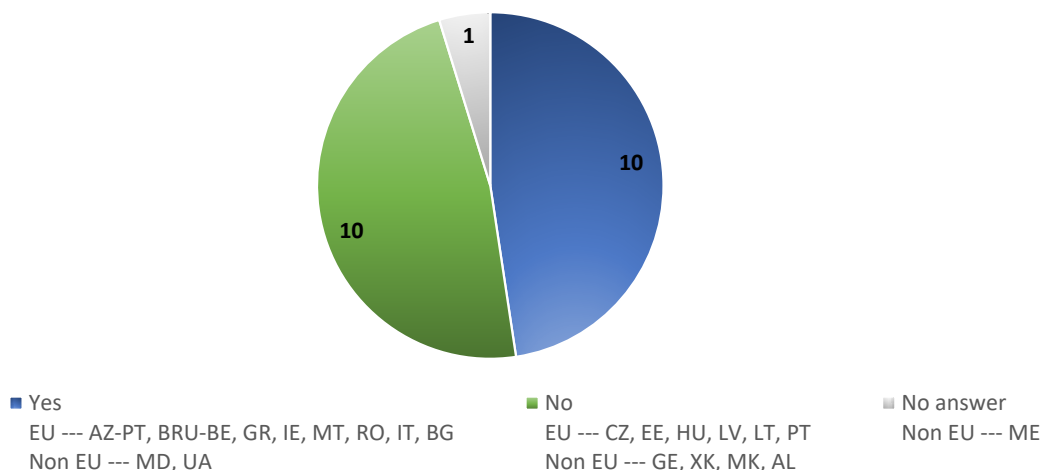


Figure 19. Answers to Question F6 concerning the existence of a regulatory authorities' structured programme to control and reduce water losses/leakages

7.2.3 Levels of Non-Revenue Water

Several factors may affect the ability to assess the magnitude of water losses in water supply systems. These include the availability and quality of data, the level of digitalisation of network monitoring systems, the coverage and accuracy of metering at abstraction points and customer connections, and the technical and financial capacity of water service providers to carry out systematic leakage assessments. Institutional arrangements and the allocation of responsibilities between regulators, service providers and other competent authorities may further influence the consistency and reliability of reported data.

Although, from the perspective of the Directive and the objective of promoting efficient and sustainable use of water resources, the assessment of real losses from pipelines would be more relevant, only a limited number of WAREG members have access to the detailed data required to establish a comprehensive water balance in line with internationally recognised methodologies (e.g. the IWA water balance).

In the context of the questionnaire, respondents therefore focused on the assessment of non-revenue water (NRW), as this indicator is more readily available across regulatory authorities. NRW can be calculated as the difference between the volume of water input into the system and the volume of water billed to consumers, based on invoiced consumption data, which are generally more accessible to both regulators and service providers.

While NRW provides a useful proxy for overall system inefficiencies, it does not allow for a precise differentiation between real losses (physical leakages) and apparent losses, which limits its suitability for targeted leakage reduction measures. NRW levels may also be influenced by the way water consumption is measured and billed to customers. In countries where billing without individual metering is permitted, consumption is typically estimated using standardised parameters. This practice may lead to an underestimation of actual water losses. At the same time, reported NRW levels may differ significantly even among countries where water meters are widely used, depending on the location of the meters within the supply system. For example, when meters

are installed at customers' premises, the recorded level of water losses is generally higher than in systems where the meters are installed on the main distribution lines.

According to the questionnaire responses, 19 respondents were able to assess non-revenue water (NRW) as a percentage. Reported NRW levels vary widely, ranging from around 10% to more than 50%. It should be noted that assessing NRW in percentage terms has significant limitations, as it is highly dependent on the volume of water supplied to customers. For example, an apparent improvement in the NRW percentage may occur even if the absolute volume of water losses remains unchanged, simply because total water consumption has increased.

Based on the reported NRW percentages, the most favourable situation is observed in Brussels-Belgium, the Czech Republic, Estonia and Latvia, where NRW levels range between 10% and 20%. The highest NRW levels were reported in Albania, Azores-Portugal, Bulgaria, Georgia, Kosovo and North Macedonia.

At the same time, the data presented in Figure 20 should be interpreted with caution, as each country represented by WAREG members has its own specific characteristics – such as the accuracy of water consumption measurements and the use of estimated consumption – which influence both the volume and percentage of non-revenue water (NRW).

The assessment of NRW expressed in $\text{m}^3/\text{km}/\text{year}$ represents a step towards a more objective evaluation of the situation, as it links the volume of losses to the length of the network infrastructure, particularly when analysed together with absolute NRW volumes. However, not all respondents were able to report NRW in m^3 per kilometre of mains per year, and not all reported values which were considered fully reliable. For reference, selected reported values include: the Czech Republic (1.208 $\text{m}^3/\text{km}/\text{year}$), Estonia (1.737 $\text{m}^3/\text{km}/\text{year}$), Hungary (2.290 $\text{m}^3/\text{km}/\text{year}$), Brussels-Belgium (2.829 $\text{m}^3/\text{km}/\text{year}$), Latvia (3.071 $\text{m}^3/\text{km}/\text{year}$), Ireland (5.192 $\text{m}^3/\text{km}/\text{year}$), Italy (6.643 $\text{m}^3/\text{km}/\text{year}$), Bulgaria (6.800 $\text{m}^3/\text{km}/\text{year}$), Romania (7.664 $\text{m}^3/\text{km}/\text{year}$ for the total network and 9.368 $\text{m}^3/\text{km}/\text{year}$ for the distribution network), Albania (13.334 $\text{m}^3/\text{km}/\text{year}$) and Ukraine (13,786 $\text{m}^3/\text{km}/\text{year}$).

At the same time, only three respondents reported being able to calculate the Infrastructure Leakage Index (ILI) and to use it in practice to assess water losses, monitor annual trends and set targets. ILI is currently applied by REWS (Malta), where the national ILI level in 2024 was 1,75, and by GNERC (Georgia). BRUGEL (Brussels, Belgium) also monitors ILI but does not set specific targets for this indicator. In 2024, the ILI in Brussels was 0,93.

The observed differences in NRW and leakage indicators may be related to several factors, including the age of water supply systems, levels of investment in infrastructure, the development and coverage of water volume and water loss monitoring systems, building density and environmental conditions. In some cases, extraordinary circumstances, such as the need to operate under emergency conditions (e.g. ongoing warfare in Ukraine), may further affect both the level of water losses and the ability to monitor and address them effectively.

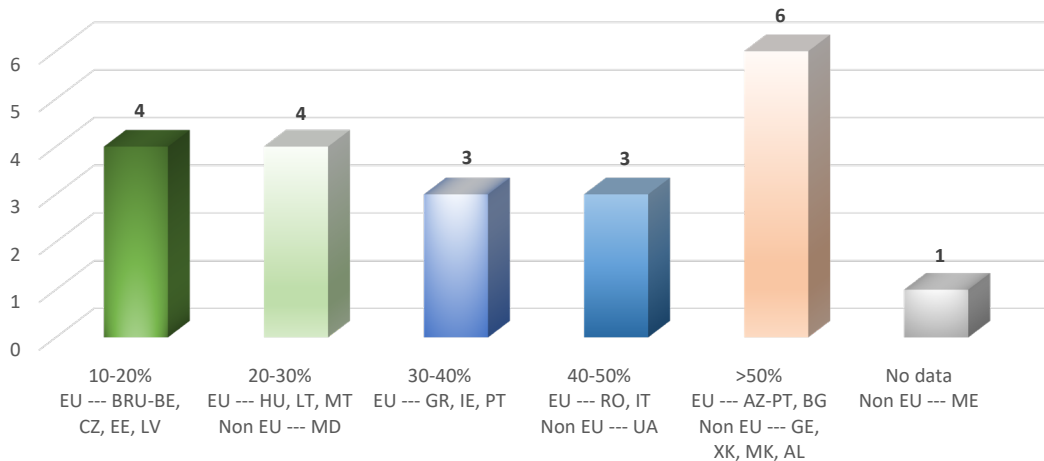


Figure 20. Answers to Question F7 concerning the current average level of non-revenue water (NRW) in the systems of service providers whose assessment results shall be communicated to the European Commission

7.2.4 Water Leakage Reduction under the DWD - Key challenges

Most respondents agreed that the existing EU requirements are sufficient to promote improvements at the service provider level. At the same time, ERSAR (Portugal) emphasised that the adoption of leakage indicators is fundamental to improving efficiency. However, ERSAR also noted that uniformity at both national and EU level is essential to ensure meaningful and comparable benchmarking between utilities. ARERA expressed full agreement with this view, emphasising the importance of harmonised methodologies for reliable comparisons.

PUC (Latvia) highlighted that incentives for action would be significantly strengthened if concrete leakage reduction targets were set and, more importantly, if adequate funding were made available. Similarly, ERRU (Albania) emphasised that a lack of technical and financial capacity often hampers the implementation of advanced leakage control measures, underlining the need for further guidance and capacity-building activities. EWRC (Bulgaria) stressed that regulatory requirements should be designed in a way that ensures practical implementation and avoids remaining merely at a bureaucratic level.

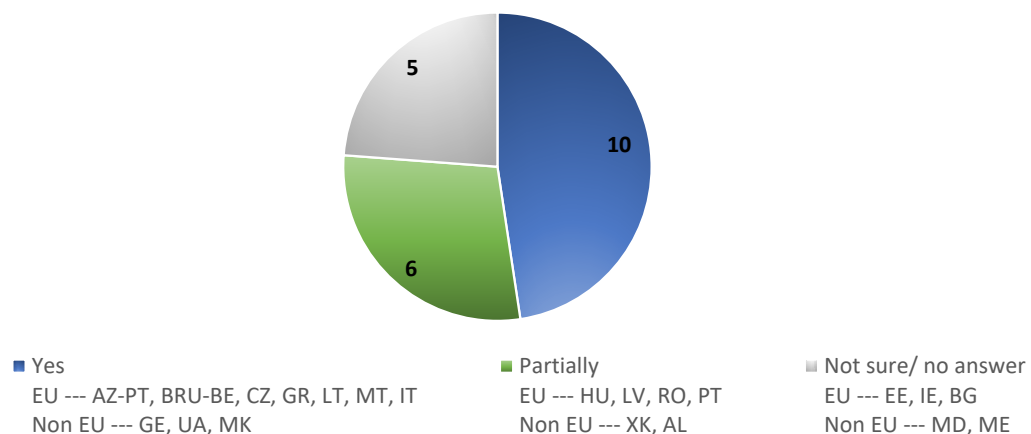


Figure 21. Answers to Question F10 concerning the adequacy of current EU requirements (e.g. leakage indicators) to support action at the utility level

Responses from WAREG members indicate that the availability of funding for water loss reduction is limited. This, together with the fact that water supply infrastructure is largely ageing, was identified as the most frequently cited barrier to reducing leakages. Other commonly reported factors hindering water loss reduction include low public and political prioritisation, limited data availability, skills gaps and workforce constraints.

Taken together, the barriers identified by regulatory authorities, along with the additional planning and investment needs arising from the implementation of other requirements of the DWD and other policy frameworks, make the achievement of water leakage reduction targets particularly challenging.

At the same time, these policy objectives are well justified, as they are focused on the efficient use of water resources and infrastructure, and thus on improving service efficiency. It is therefore necessary to actively seek solutions to overcome these barriers and to promote the exchange of best practices, including different technically and economically justified approaches to leakage management, which do not necessarily involve massive capital investments.

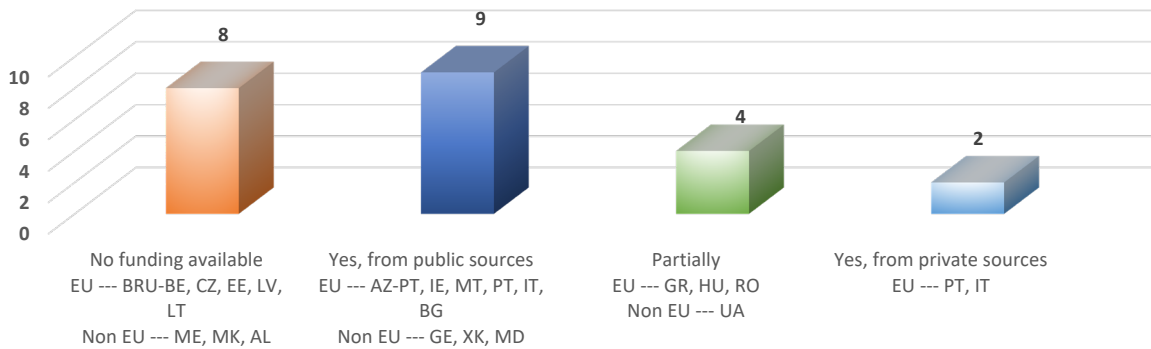


Figure 22. Answers to Question F11 concerning the availability of dedicated funding for leakage reduction for service providers

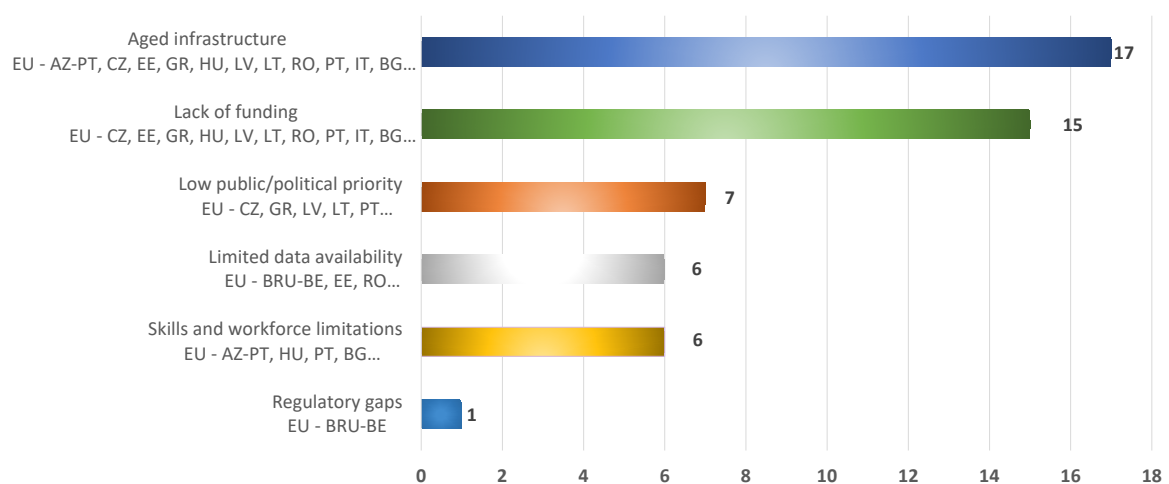


Figure 23. Answers to Question F12 concerning the main barriers to leakage reduction in respondents' contexts

7.2.5 Approaches to Leakage Detection

The methods used by water service providers to detect and locate leakages vary significantly across countries and utilities, and are influenced by a combination of technical, institutional, financial and contextual factors. Key determinants include the age and condition of network infrastructure, the level of digitalisation and monitoring (e.g. the availability of district metered areas, pressure management systems and smart metering), and the quality and completeness of network asset data and water balance information.

Financial capacity and access to investment funding play a major role in determining whether utilities can deploy advanced leakage detection technologies, such as acoustic loggers, correlators, satellite-based detection or permanent network monitoring systems, as opposed to relying primarily on reactive maintenance and visual inspections. The size of utilities and economies of scale also affect the choice of methods, as smaller service providers often face higher relative costs and capacity constraints.

Human resources and technical expertise are equally important. The availability of trained staff, access to specialised skills (either in-house or through outsourcing), and experience with systematic leakage management practices influence both the effectiveness and sophistication of applied methods. In addition, organisational maturity and management practices, including the existence of structured leakage management programmes, performance targets and incentive mechanisms, shape the extent to which proactive leakage detection is prioritised.

Regulatory and policy frameworks further affect the choice of methods, including requirements related to leakage monitoring, reporting obligations, performance benchmarking, and tariff regulation. Where regulatory incentives or performance-based mechanisms are in place, utilities are more likely to invest in systematic and preventive leakage detection approaches.

Finally, contextual factors such as network layout and density, topography, soil conditions, climate, and the need to operate under emergency conditions may influence both the technical feasibility and cost-effectiveness of different leakage detection methods. As a result, leakage management practices reflect not only regulatory expectations, but also local operational realities and constraints.

The figure below presents a summary of the most commonly used leak detection methods.

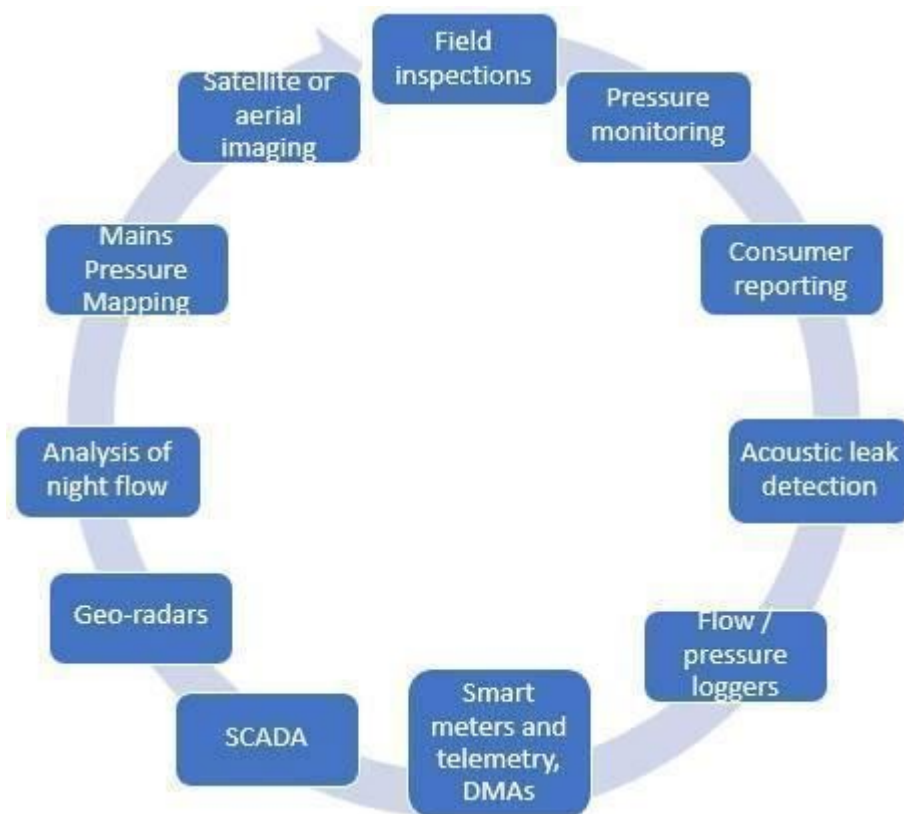


Figure 24. Answers to Question F8 concerning the methods used by service providers to detect or monitor leakages

Digital mapping of water infrastructure using GIS- or BIM-based systems plays a crucial role in the effective control, detection and reduction of water losses. Accurate and up-to-date digital network maps enable water service providers to better locate assets, identify leakage-prone areas, analyse failure patterns and prioritise maintenance and rehabilitation activities. When combined with monitoring data (e.g. pressure, flow and NRW indicators), digital mapping supports targeted leak detection, faster response to incidents and more efficient planning of network inspections and repairs.

Beyond leakage management, digital mapping provides broader operational and strategic benefits. These include improved asset management and lifecycle planning, enhanced coordination between field teams and control centres, better planning of investments and network extensions, reduced response times during incidents and emergencies, and improved data quality for regulatory reporting and performance benchmarking. In the longer term, GIS- and BIM-based systems also support the digitalisation of utilities, facilitate the integration of smart monitoring technologies, and contribute to more resilient and cost-effective water service provision.

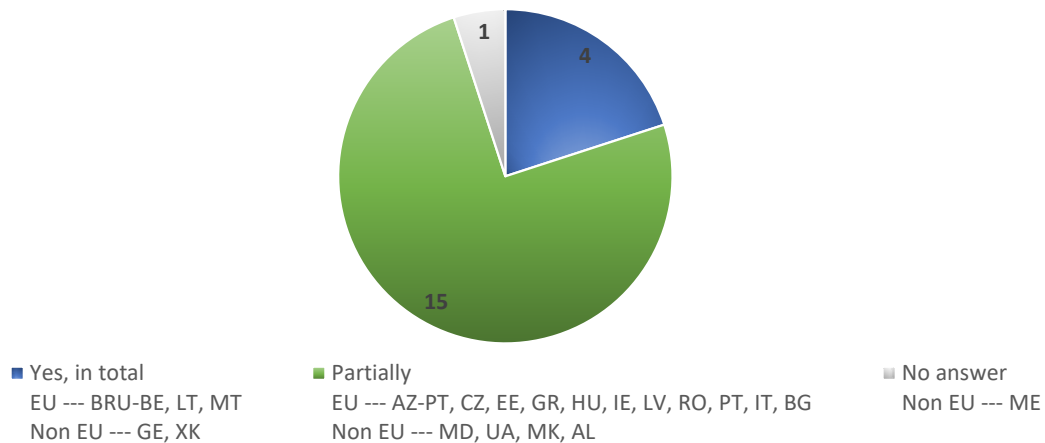


Figure 25. Answers to Question F9 concerning the digital mapping of infrastructure assets (e.g. pipelines) of service providers using GIS- or BIM-based systems

8 Section G - Quality Monitoring

8.1 Legal Context and Regulatory Purpose

Directive (EU) 2020/2184 elevates the importance of water safety through Article 13. Rather than relying on a fixed checklist, it encourages EU Members to adopt an effective, risk-based approach. This approach is based on identifying and evaluating the key issues. In this context, the outcomes of the risk assessment under Article 8 and the water supply system risk assessment under Article 9 form the foundation of the methodology. By using these risk assessment results as the central elements of the approach, EU Member States can better target their efforts and resources where they are most needed, while maintaining a high level of public health protection.

Article 13 also adds the new element of Watchlist. With this, regulating entities can remain aware of up-and-coming threats, such as emerging pollutants i.e. PFAS. This sets the Directive not as a standalone set of guidelines, but as a continuously updated mechanism for quality of drinking water. Additionally, Annexes I, II, and III of the Directive are important parts as Annex I sets the health targets for tap water, listing the exact limits for bacteria, chemicals, and other markers. Annex II lays out how to run the monitoring programs —the frequency of the sampling, the indicators, the adjustment of the said sampling frequency, with the changes being based on the risk assessment results and Annex III sets the testing methods and technical rules, making sure the results are reliable, and comparable between EU countries and beyond.

8.2 Comparative Analysis of Replies

The current unit utilizes answers covering the Section G of questionnaire which refers to Article 13 and Annexes I–III of Directive (EU) 2020/2184. The results highlight how European Member States and non-European countries organize their drinking water monitoring systems and their approach to new parameters under the Directive and their implementation challenges and national regulatory authority responsibilities for compliance.

Through the submitted questionnaires and their evaluation in the units that follow, it is demonstrated that EU countries maintain different institutional frameworks for water management, since their competent authorities, such as Ministries, Health authorities and Environmental Agencies at different levels. The same can be noted for the non-EU countries that participated in the questionnaire, with the bodies in charge of the water quality varying from country to country. The operator⁹ serves as the monitoring entity in a few of participating countries, but most other nations assign this duty to their Ministries of Health or Environmental Agencies. At the same time, concerning the non-EU countries, most have the operator as the entity responsible for monitoring. Multiple EU and non-EU countries have included health authorities in their monitoring systems, due to the fact that public health requires better coordination with economic regulation.

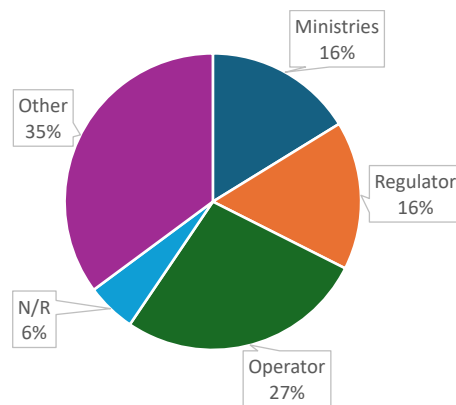
The implementation of the new parameters from the Directive, as it becomes evident from the breakdown below, shows inconsistent progress between countries. The main barriers to expanded monitoring include high cost of analyses and insufficient laboratory resources, as well as insufficient financial support. Regulators are tasked with different roles in monitoring compliance, a fact that becomes evident by the fact that many amongst them have defined responsibilities in that field but a noteworthy number of them either lack involvement or did not answer the relevant question. The following evaluation of the submissions shows that Article 13 of the Directive requires better coordination between competent authorities to achieve its objectives in the wake of ongoing challenges with data comparison and institutional harmonization.

8.2.1 Entities Responsible for Monitoring DWD

The responses received to Question G1 show the range of different institutions that oversee drinking water quality monitoring. That is something to be expected since both European and non-European countries organize their governance systems differently. The Ministries responsible for monitoring the quality of drinking water include Ministries of Health and Social Protection in Albania (non-EU), Environment and Agriculture in Ukraine (non-EU), Health Ministries in Greece (EU), Bulgaria (EU), Romania (EU) and Ukraine (non-EU) and other relevant ministries are mentioned in the submission of Greece (EU). The water supply operators perform monitoring duties in a few of all participating countries, and most among them are EU countries.

An overview of these results is provided in the figure below, which summarises the distribution of the replies.

⁹ The term “Operator” refers to the “Water Supplier” as mentioned in the DWD.



- Ministries: AL (non-EU), BG (EU), GR (EU), IT (EU), RO (EU), UA (non-EU)
- Regulator: PT-Azores (EU), GR (EU), IE (EU), IT (EU), PT (EU), UA (non-EU)
- Operator: AL (non-EU), PT-Azores (EU), BE-Brussels (EU), CZ (EU), GEO (non-EU), IE (EU), IT (EU), XK (non-EU), PT (EU), UA (non-EU)
- N/R: MT (EU), MD (non-EU)
- Other: AL(non-EU), PT-Azores (EU), EE (EU), GEO (non-EU), GR (EU), HU (EU), IE (EU), XK (non-EU), LV (EU), LT (EU), MD (non-EU), RO (EU), UA (non-EU)

Figure 26. Answers to Question G1 concerning the entities responsible for monitoring DWD

The responses show that Ministries from EU-Member account for 67% of the total ministries overseeing monitoring, while non-EU countries make up 33% of that pool. The distribution shows that EU countries make up 83% of the Regulator responses while non-EU countries account for 17%, and operators from EU countries make up 60% of the total while non-EU operators represent 40%. The public health entities involved in this process include Health Boards i.e. in Estonia (EU), Regional Environmental Hygiene Services i.e. in Greece (EU), National Centres for Public Health i.e. in Hungary (EU) and Kosovo (non-EU), National Institutes of Public Health i.e. in Romania (EU) and Kosovo (non-EU), the Public Authority i.e. in Italy (EU)¹⁰ and County Public Health Directorates i.e. in Romania (EU). The current system demonstrates a growing focus on public health aspects of drinking water quality, aligning with number 1 of Article 13 of the DWD.

8.2.2 Additional Parameters to DWD Monitoring

The answers to Question G2, concerning whether the additional parameters set by the DWD are included in the current drinking water quality monitoring in each country, through their visualization in the following figure, demonstrate how different countries have incorporated new parameters from Directive (EU) 2020/2184 into their monitoring methodology. Azores-Portugal, Brussels-Belgium, Bulgaria, the Czech Republic, Portugal, Greece, Hungary, Ireland, Italy and Latvia, from EU, Ukraine, non-EU, have successfully added these parameters to their monitoring systems which follows Annex I requirements for microbiological and chemical and indicator parameters. These parameters remain unimplemented in Lithuania (EU), Albania, Kosovo, North Macedonia and

¹⁰ Italy (EU) has been noted in both the "Operator" and the "Other categories" since "External checks" are carried out by the local health authority. "Internal checks" are carried out by the drinking water supplier", thus meaning the operators are obliged to constantly monitor DWD quality, but their results are also checked by Public Authority, acting at local level under the Health Ministry guide.

Moldova (non-EU), while Romania and Estonia (EU), and Georgia (non-EU) answered “Not applicable” because their Health Ministries operate independently.

An overview of these results is provided in the chart below, which summarises the distribution of the replies.

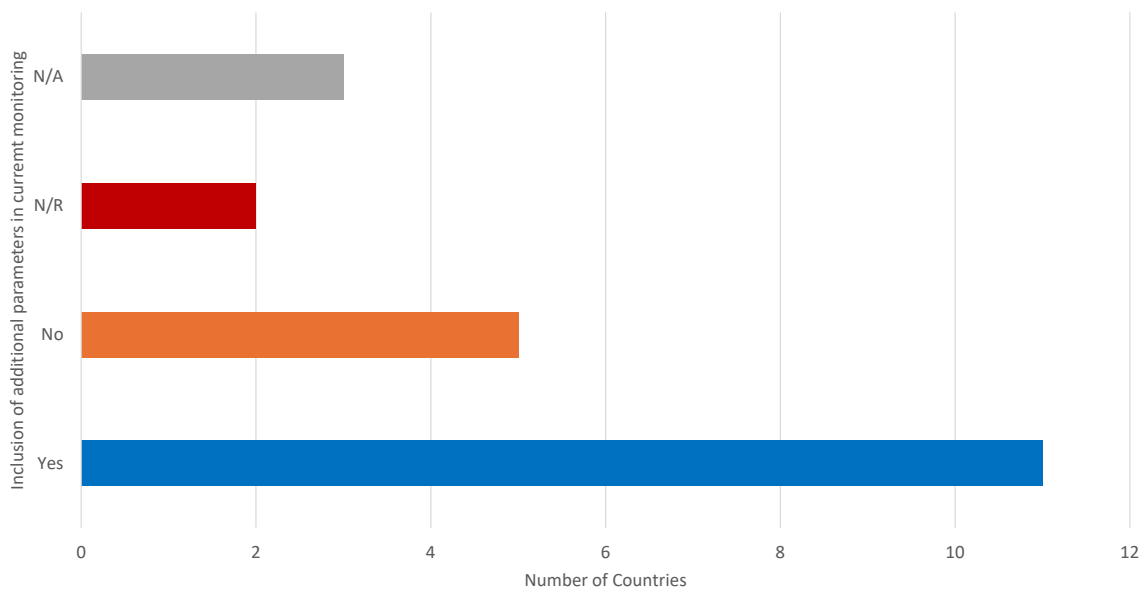


Figure 27. Answers to the inclusion of the additional parameters of DW Quality monitoring

The new monitoring parameters serve as essential tools for risk-based monitoring according to Article 9 and Article 13 of the Directive which address substances including emerging contaminants and endocrine-disrupting compounds¹¹. The implementation of these parameters faces issues because of limited analytical capabilities and insufficient financial resources, as noted in the questionnaire responses. The different levels of parameter inclusion between respondents demonstrate that capacity development programs, standardized analytical techniques and laboratory support are needed to achieve Annex I compliance.

8.2.3 Barriers to Implementing Expanded Monitoring of DWD

The participating countries identified multiple barriers, and, as it becomes apparent in the figure below, the high implementation cost for new monitoring requirements has been highlighted as their primary obstacle to fulfil the Directive's requirements. The analysis costs for PFAS, amongst others, are evidently high according to multiple respondents. The need for external laboratory testing, combined with insufficient laboratory funding creates additional difficulties for analysis. At the same time, the risk-based monitoring system described in Article 13 faces delays because many facilities lack properly equipped laboratories and sufficient staff members.

¹¹ Annex I of the DWD includes the Minimum Requirements for Parametric Values used to assess the Quality of water intended for Human Consumption, and more specifically: Part A includes Microbiological parameters, Part B includes Chemical parameters, Part C includes Indicator parameters and Part D includes Parameters relevant for the risk assessment of domestic distribution systems.

An overview of these results is provided in the chart below, which summarises the distribution of the replies.

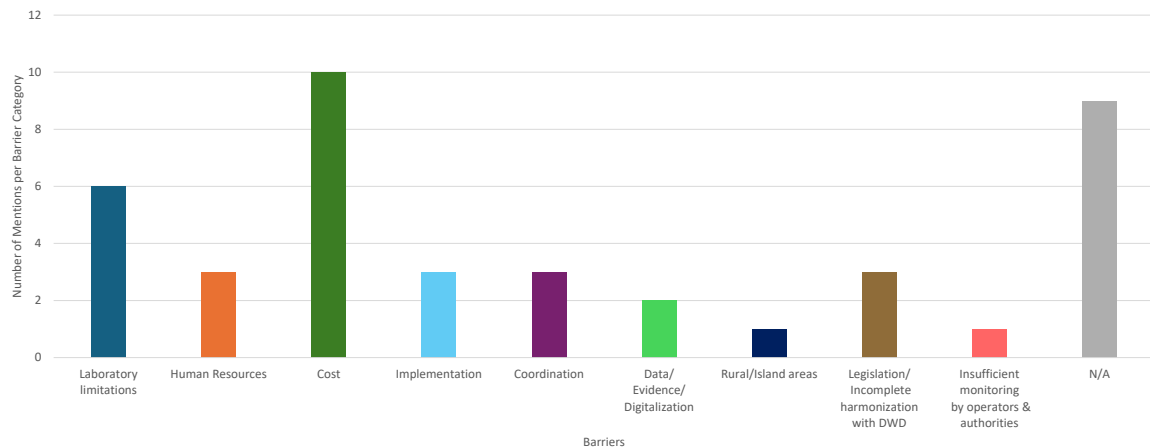


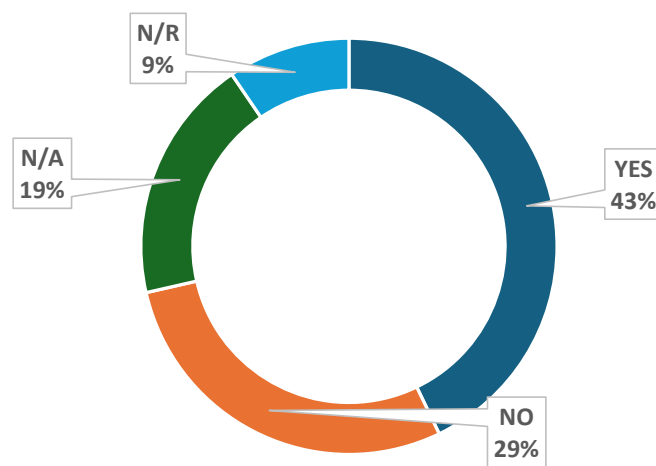
Figure 28. Answers of the barriers to implementation of DWD monitoring

Multiple participants face challenges trying to match their current monitoring systems with the expanded list of parameters in Annex I, since their national standards and legal frameworks have not been updated yet. Another point worth mentioning is that the analysis capacity between urban and rural areas shows an unbalanced distribution which acts as a monitoring limitation. The results demonstrate that financial planning together with EU-level technical assistance and guidance will support countries to fulfil Article 13 (7) requirements while providing equal health protection to consumers.

8.2.4 Role of Authorities in Ensuring Compliance with the Updated Water Quality Standards

In the Question G4, the participants indicated that 43% of them have official responsibility to enforce the new drinking water quality standards from Directive (EU) 2020/2184 as on the other hand 29% do not have this responsibility and 28% either did not respond or stated that the question is not relevant with their competencies. The authorities who have this responsibility (43%) include in their mandate the compliance in monitoring, the derivation of corrective actions and the collaboration with health and environmental agencies. The combination of regulatory and health oversight functions in some countries demonstrates the need for agencies to work together by virtue of competence. All that information is highlighted in the Figure that follows.

An overview of these results is provided in the chart below, which summarises the distribution of the replies.



- YES: PT-Azores (EU), CZ (EU), GR (EU), IE (EU), IT (EU), PT (EU), LV (EU), MD (non-EU), UA (non-EU)
- NO: BE-Brussels(EU), BRG (EU), HU (EU), LT (EU), RO (EU), XK (non-EU)
- N/A: EE (EU), AL (non-EU), GEO (non-EU), ME (non-EU)
- N/R: MT (EU), MK (non-EU)

Figure 29. Answers to the role of authorities in ensuring compliance with the updated water quality standards

The current structure indicates that regulatory functions are in place but are not yet fully coordinated under a unified framework for topics concerning quality of drinking water. Effective implementation of Article 13 and Annexes I to III requires economic and health regulators to clearly define their respective responsibilities. To ensure consistent application of the Directive’s provisions, each authority must adopt standardized monitoring systems, reporting protocols, and enforcement procedures.

The Section G questionnaire results deliver essential information about present drinking water quality monitoring practices. They show that institutions operate in a varying manner due to the fact that they handle monitoring tasks differently and they implement the Directive’s new requirements with processes and in a manner that is applicable to each one of them, and their current administration structure. EU-Members have made progress in implementing additional parameters and risk-based monitoring programs, as well as the non-EU participants, while both encounter substantial financial and institutional obstacles. Health authorities hold a leading role in water monitoring, since water management affects mainly public health. The implementation of new analytical parameters faces ongoing challenges, with the financial ones being the most prominent, which demonstrate the need for additional EU support through technical guidance and funding programs to achieve monitoring standardization and staff development.

9 Conclusions

The findings of the WAREG Working Group questionnaire indicate that all participating members, regardless of whether they are EU Member States or non-EU countries, are striving, within their

respective mandates and competences, to improve the quality, safety and efficiency of water services. This common objective is reflected in ongoing efforts to strengthen risk-based approaches, improve regulatory frameworks for materials in contact with drinking water, promote access to water, and reduce water losses. Many countries have clearly prioritised water quality outcomes and transparency of service performance, in line with the objectives of Articles 16 and 17 of the Directive.

At the same time, the responses demonstrate a high degree of diversity in national regulatory frameworks, institutional arrangements and levels of practical implementation. This diversity reflects differences in regulatory scope, governance models, financial and technical capacity, the maturity and capacity of service providers, infrastructure age and condition, data availability, as well as country-specific environmental, socio-economic and operational contexts.

While the DWD provides a harmonised framework at EU level, the practical challenges of implementation remain significant. Key cross-cutting barriers include limited investment capacity, skills and workforce constraints, uneven data availability and digitalisation levels, and the need for stronger institutional coordination. In particular, many respondents identified cost increases related to compliance with the Directive's requirements related to expanded monitoring (e.g. for microplastics, PFAS and endocrine disruptors), leakage reduction, outsourcing needs and the lack of dedicated funding as major constraints. Limited technical capacity and skills were frequently identified as significant barriers to the implementation of the risk-based approach. For almost all requirements of DWD, respondents highlighted the need to develop effective coordination mechanisms among the parties involved, including government bodies, public health authorities, economic regulators, service providers and other relevant stakeholders.

With regard to consumer information, websites remain the dominant communication channel, and annual reporting is the most common update frequency. However, only a limited number of countries apply a multi-channel approach combining websites, media, invoices and real-time notifications. This points to an untapped potential for more inclusive, user-oriented communication. Further progress is also needed to fully meet the objectives of Article 17, including by improving the information provided on water bills and in digital applications (e.g. clearer price information per litre and per cubic metre, household consumption trends, comparisons and consistent links to Annex IV information).

In the area of access to water, most countries focus primarily on economic support measures, such as social tariffs, subsidies or water bill reductions, while the promotion of tap water in public spaces, as foreseen under number 2 of Article 16, is less frequently reported and mainly by frontrunner countries.

The findings also indicate a clear convergence between EU and non-EU countries towards the objectives of the Drinking Water Directive. At the same time, differences in institutional arrangements and implementation models persist. Non-EU respondents, including from EU candidate countries, report more integrated governance structures, particularly in relation to access to water, where regulatory, monitoring and tariff-setting functions are combined, whereas EU countries more frequently report fragmented responsibilities distributed across specialised authorities. These differences illustrate diverse pathways towards implementation, while confirming a shared regulatory direction and the role of the Directive not only as binding EU legislation, but also as a reference framework guiding regulatory reforms beyond the EU.

Moving from compliance on paper to measurable improvements in service performance will require sustained investment, strengthened regulatory coordination, improved data and monitoring systems, and targeted support for smaller or less well-resourced service providers. The results underline the importance of continued cooperation and knowledge exchange within WAREG, as well as with other relevant European and national stakeholders, including the sharing of good practices, methodologies and regulatory approaches, as well as targeted capacity-building efforts, to support more consistent and effective implementation of the Directive across the Union and in associated non-EU countries.

Ultimately, compliance with the Drinking Water Directive should be seen not as an end, but as a means to deliver real improvements in the quality, safety, continuity and efficiency of water services and to foster greater consumer awareness and trust.

Degree of regulatory involvement in DWD implementation

A consistent finding across policy areas is the limited direct involvement of regulatory authorities in the implementation of several core requirements of the DWD. Responsibilities for water quality monitoring, materials in contact with drinking water and risk-based approaches are predominantly assigned to service providers, ministries, health authorities or environmental agencies. Only a minority of regulators report direct enforcement roles in these domains.

Nevertheless, the findings highlight the importance of regulators' indirect role. In particular, regulators responsible for tariff setting influence the pace and feasibility of Directive implementation by ensuring that justified compliance-related costs — such as investments, monitoring and risk-based measures — can be reflected in tariffs. This confirms that regulatory authorities remain key actors in the practical delivery of the Directive, even where formal responsibilities are assigned to other institutions.

Institutional capacity and the positioning of regulators

The findings indicate that the effectiveness of Drinking Water Directive implementation is closely linked to institutional capacity. Across several policy areas — including risk-based approaches, expanded water quality monitoring, leakage reduction and consumer information — respondents identify financial constraints, human resource shortages and limited technical expertise as major barriers. These constraints affect not only service providers, but also public authorities and, in some cases, regulatory authorities themselves.

While the degree of regulatory independence is not explicitly assessed, the reported fragmentation of responsibilities between regulators, ministries, health authorities and environmental agencies illustrates the practical limitations faced by regulators in exercising oversight. The findings therefore suggest that adequate institutional capacity, clear mandates and effective coordination mechanisms are key preconditions for regulators to contribute meaningfully to the implementation of the Directive.

Added value of WAREG as a European interface

The report itself illustrates the added value of WAREG as a structured European interface for regulatory dialogue and evidence-based assessment. By collecting comparable information from EU and non-EU regulatory authorities through a common questionnaire, WAREG enables the identification of shared trends, recurring challenges and differentiated implementation pathways that would not be visible at national level alone. The analysis highlights areas of convergence, such as access to water, as well as divergences in institutional roles, data availability and monitoring capacity. This comparative perspective provides a factual basis for mutual learning, for the exchange of practices adapted to different national contexts, and for informed dialogue with the European Commission on implementation challenges. In this sense, WAREG's contribution lies not in harmonizing national systems, but in making differences transparent and actionable within a common European policy framework.

Annex

Questions included in the WAREG Drinking Water Directive Working group questionnaire

Section A – General Information

A1	Country/Region
A2	Name of Regulatory Authority
A3	Contact Person (Name, Email)
A4	Status of DWD Transposition
A5	Link to the document which results from the transposition of DWD into national legislation
A6	What are the main regulatory or technical challenges your authority faces in implementing the DWD?
A7	Do you have an estimate of the economic impact of implementing the DWD?

Section B – Risk-Based Approach (Art 7–9)

B1	Is a formal risk-based approach (RBA) in place in your country?
B2	Which entities are responsible for RBA implementation?
B3	If the RBA implementation is not done by the water suppliers, are they adequately involved in the process?
B4	Briefly describe the methodology or tools used to implement the RBA.
B5	What are the main challenges in applying the RBA?
B6	What is your authority's role in ensuring compliance with the DWD requirements on the risk-based approach?

Section C – Materials in Contact with DW (Article 11)

C1	Does your country have a national approval system for materials/products in contact with drinking water?
C2	Describe briefly the current approval process, if any.
C3	Does your country have positive lists of starting substances, compositions or constituents, including specific migration limits and scientific pre-conditions related to substances or materials?
C4	What challenges do you foresee with the transition/implementation of article 11 of the DWD?
C5	What is your authority's role in ensuring compliance with the DWD requirements regarding materials in contact with drinking water?

Section D – Consumer Information (Article 17)

D1	What information is made available to consumers regarding water quality and services?
D2	Through which platforms or tools is the information published?
D3	How frequently is the information updated?
D4	What measures are you considering to improve transparency?
D5	What is your authority's role in ensuring compliance with the DWD requirements on customer information?

Section E – Access to Water (Article 16)

E1	Are there national policies or laws ensuring access to water for all?
E2	What specific measures are in place to support vulnerable and marginalised groups in accessing water?
E3	Is access to water monitored by indicators? If yes, please specify.
E4	Describe any nationally implemented affordability mechanisms that ensure access to water.
E5	What is your authority's role in ensuring compliance with the DWD requirements on access to water?

Section F – Leakages

F1	Are leakage reduction targets included in your national or regional legislation in line with Article 4 of the DWD?
F2	Does national or regional legislation include provisions for assessing leakage levels in water supply systems covered by the DWD?
F3	Does national or regional legislation include measures for assessing leakage levels for a broader range of water supply systems (e.g. smaller systems) beyond those covered by the DWD?
F4	How many water supply systems in your country are required to be assessed and reported to the EC in relation to leakage levels?
F5	Which entity is responsible for controlling water leakage levels in your country?
F6	Does your authority have a structured programme in place to control and reduce water losses/leakages?
F7	What is the current average level of Non-Revenue Water (NRW) in the systems of those service providers whose assessment results will be communicated to EC: In percentage (%) In m ³ /km of mains/year In volume (m ³)
F8	Which methods are used by your service providers to detect or monitor leakages?
F9	Are the infrastructure assets (e.g., pipelines) of your service providers mapped digitally (GIS or BIM-based system)?
F10	Do you consider the current EU requirements (e.g. leakage indicators) adequate to support action at the utility level? If No, please elaborate
F11	Is there dedicated funding available for leakage reduction for your service providers?
F12	What are the main barriers to leakage reduction in your context? (Select up to 3)
F13	What is the role of your authority in ensuring the compliance with the DWD requirements regarding the assessment of water leakage levels?

Section G - Quality Monitoring

G1	Which entity is responsible for monitoring DW quality in your country?
G2	Does the current drinking water quality monitoring include the additional parameters introduced in the DWD? If yes, which ones?
G3	What are the main barriers to implementing the expanded monitoring of drinking water quality and ensuring compliance with DWD requirements?
G4	What is your authority's role in ensuring compliance with the updated water quality standards set by the DWD?