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**Economic Commission for Europe****World Health Organization  
Regional Office for Europe****Meeting of the Parties to the Protocol on  
Water and Health to the Convention on  
the Protection and Use of Transboundary  
Watercourses and International Lakes****Sixth session**

Geneva, 16–18 November 2022

Item 6 of the provisional agenda

**Improving governance for water and health: support for setting  
targets and implementing measures****Regional report on the status of implementation of  
the Protocol****Prepared by the joint secretariat with the assistance of the Swiss  
Federal Institute of Aquatic Science and Technology\****Summary*

According to its terms of reference, the Working Group on Water and Health is responsible for overseeing and directing the activities carried out under the programme of work and for examining experience and drawing up draft recommendations. It also advises the Meeting of the Parties regarding the further development of the programme of work and its adaptation to changing circumstances (ECE/MP.WH/2/Add.2-EUR/06/5069385/1/Add.2). At its thirteenth meeting (Geneva (hybrid), 19–20 May 2022) the Working Group entrusted the secretariat with the finalization of the present regional report on the status of implementation of the Protocol, for submission to the sixth session of the Meeting of the Parties (see ECE/MP.WH/2022/1-EUCHP/2219533/3.1/2022/MOP-6/07, forthcoming).

The report summarizes information from 34 out of the 35 national summary reports submitted within the fifth reporting exercise by Parties to the Protocol and other States. The document aims to assist Parties in assessing implementation of the Protocol and facilitate adoption by the Meeting of the Parties of the programme of work for 2023–2025 (ECE/MP.WH/2022/2-EUCHP/2219533/3.1/2022/MOP-6/08).

\* The revised version of the document was submitted to reflect comments of a technical nature provided by a Party at the sixth session of the Meeting of the Parties.



## I. Background

1. According to article 6 of the Protocol on Water and Health to the Convention on the Protection and Use of Transboundary Watercourses and International Lakes, within two years of becoming a Party, each Party must establish and publish national and/or local targets and target dates in order to achieve or maintain a high level of protection of human health.
2. Article 7 of the Protocol requires Parties to collect and evaluate data on their progress towards the achievement of the targets set and on indicators that are designed to show how far that progress has contributed towards preventing, controlling or reducing water-related disease. Every three years, each Party provides to the secretariat a summary report of the data collected and evaluated and the assessment of the progress achieved, in accordance with the guidelines and template established by the Meeting of the Parties (ECE/MP.WH/13/Add.2-EUPCR/1611921/2.1/2016/MOP-4/06/Add.2, decision IV/1, annexes I and II).
3. The present report analyses 34 summary reports, submitted by 26 Parties<sup>1</sup> to the Protocol and 8 other States.
4. The reports varied in length, level of detail and quality. It is not within the mandate of the joint secretariat to complement and/or verify the information provided therein. Thus, the present document should be read with these limitations in mind and should not be regarded as an exhaustive review of the status of implementation of the Protocol.

## II. Executive summary

5. The present document assesses progress with implementation of the Protocol's core provisions, provides examples of country action and good practices and highlights regional trends, common issues and thematic highlights for the pan-European region. The results of the analysis are summarized below.
6. **Target setting (art. 6).** Parties mostly set targets addressing drinking water quality, access to drinking water and sanitation, water supply and quality of waters used as a source of drinking water. Fewer targets were set on sanitation systems and services, disposal or reuse of sewage sludge and quality of wastewater used for irrigation. Similarly, targets on risk-based approaches were commonly set for water supply, including in the framework of European Union ("EU") directives, but less frequently for sanitation. Many countries considered climate change in the context of their targets, as well as other issues of relevance for work carried out under the Protocol, such as environmental surveillance of wastewater, equitable access to water and sanitation, awareness-raising and communication. This shows the flexibility of the target-setting mechanism and how it can be tailored to respond to countries' needs and priorities. Overall, the targets set by Parties strongly support implementation of the water-, sanitation-, hygiene- and health-related targets of the 2030 Agenda for Sustainable Development.
7. **Surveillance and contingency planning (art. 8).** Countries commonly set targets to reduce water-related diseases and some countries set targets for improving disease surveillance systems. Most Parties, as well as other reporting States, have surveillance and early warning systems in place (25), but a few lack contingency plans to respond to waterborne outbreaks and incidents. Data gathered under the common indicators on the outbreaks and incidence of infectious water-related diseases show that cryptosporidiosis, enterohaemorrhagic *E. coli*, legionellosis and hepatitis A are the diseases with higher incidence rates reported by Parties. However, countries with a robust surveillance system show higher disease burden and countries with insufficient surveillance systems have limited capacities to detect the true burden of diseases.

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<sup>1</sup> Ukraine submitted its national summary report on 1 September 2022; it could therefore not be taken into account in the preparation of the present report.

## A. Common indicators and related regional trends

8. **Drinking water quality.** Compared to the previous reporting cycle, bacteriological and chemical quality of drinking water has improved, with countries reporting a decrease of non-compliance rates with the relevant indicators. However, a few Parties reported high non-compliance rates for fluoride and nitrate.

9. **Access to drinking water and sanitation.** Access has increased for most Parties and other States in recent years, but some countries still have access to drinking water in rural areas lower than 75 %. Generally, access to sanitation continues to be lower than access to drinking water, with urban-rural disparities.

10. **Status of freshwater and groundwater resources.** Data concerning the ecological status of freshwater resources show a mixed picture, with most water bodies being classified as “moderate status” (on national average). For chemical status, most water bodies were classified as “good status”, but over 35 % of surface water bodies were reported to be “poor status”; For groundwater bodies, over 20 % were classified as “poor chemical status”. The above information is subject to limitations, as there is a lack of complete information on the number of classified surface and groundwater water bodies versus the total number of water bodies in the countries. This impairs an accurate analysis of the status of water resources among reporting countries.

## B. Emerging trends and thematic highlights

11. Many countries considered climate change in their implementation of the Protocol. Specific actions taken include setting climate-smart targets and developing specific climate adaptation strategies and plans.

12. Seventeen countries highlighted the impact of coronavirus disease (COVID-19) on the water, sanitation and hygiene (WASH) sector. Measures taken in this context include action to reduce the spread of COVID-19 in institutional settings by providing clean water, hand hygiene stations and soap, and using wastewater-based epidemiology (the latter mentioned by 7 countries).

13. Although several targets were set on provision of equitable access to water and sanitation, equity assessments were completed in less than 50 % of reporting countries. Many countries do not have specific policies in place targeting geographical disparities and the special needs of vulnerable and marginalized groups.

14. Seventeen Parties assessed the WASH situation in schools and 15 assessed WASH in health-care facilities. Countries also achieved progress in strengthening related policies and surveillance mechanisms.

15. Sixteen Parties reported having in place a national policy or regulation for risk-based management of drinking water, while 6 indicated that the situation was in progress.

16. Many Parties have specific plans for reuse of sewage sludge in agriculture and some countries focus on phosphorous recovery and recycling for agricultural purposes, following a circular economy approach in the water and sanitation sector.

17. Overall, 19 Parties reported use of decentralized water and sanitation systems, with a few specifically discussing regulation, surveillance and the expansion of such systems in rural areas.

18. International cooperation in the areas covered by the Protocol mainly takes place in the framework of international agreements on transboundary waters and through international river basin management plans.

### III. Targets and assessment of progress

19. Parties<sup>2</sup> provided information on targets, target dates and status of achievement, as summarized per target area below.

#### A. Quality of the drinking water supplied (art. 6 (2) (a))

20. All Parties but one (Latvia) set targets, with some target dates extending up to the 2030s. Countries not setting specific targets under the Protocol referred to national or EU regulations.

21. Most of the countries are working towards implementing the targets set; only a few have achieved their targets already.

22. The targets set are mainly to improve the quality of drinking water supplied in the country. However, some countries (e.g., Albania, Bosnia and Herzegovina, Israel, Portugal) set targets to establish and extend water safety plans (“WSPs”). Many EU region countries are setting water quality targets based on the EU Drinking Water Quality Directive (recast).<sup>3</sup>

23. **Target and action examples.** The Spanish Ministry of Health gathers specific information about drinking water through the National Drinking Water Information System, which provides information regarding supply zones and drinking water quality monitoring in order to achieve the target of providing safe and clean drinking water.

#### B. Reduction of the scale of outbreaks and incidents of water-related disease (art. 6 (2) (b))

24. Only two Parties (Croatia, Latvia) have not set specific targets in this area, citing the absence of significant outbreaks in recent years amid robust disease surveillance systems.

25. For the countries that have set targets, the target dates mostly end by 2023, and most countries report progress towards implementation.

26. Specific targets are mostly set on reducing outbreaks and disease incidents related to water. Several countries (e.g., Finland, Germany, Netherlands, Russian Federation, Serbia) have dedicated targets for improving disease surveillance and reporting. Other specific targets set are related to mitigating climate change-related outbreak risks, legionella prevention, and raising awareness about outbreaks.

27. **Target and action examples.** National Institute for Public Health and the Environment of the Netherlands research from 2018 and 2019 to identify risk criteria for wastewater treatment plants regarding legionella growth and emission assisted in mitigating further outbreaks of legionnaire’s disease in the country, contributing to the implementation of the national target to report water-related diseases, including legionellosis in accordance with the Public Health Act.

#### C. Access to drinking water (art. 6 (2) (c))

28. All Parties have set one or more targets, except for Croatia.

29. Many countries have multi-target deadlines extending from the mid-2020s to the early 2030s. All Parties reported on progress achieved towards the targets except Bosnia and Herzegovina.

30. Most of the specific targets set were on increasing water supply coverage. Some Parties set specific targets to increase rural water supply coverage, addressing the use of

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<sup>2</sup> Montenegro acceded to the Protocol in November 2019 and is currently setting its targets under article 6 of the Protocol. The analysis therefore reflects information provided by all Parties but Montenegro.

<sup>3</sup> See <https://eur-lex.europa.eu/eli/dir/2020/2184/oj>.

decentralized systems in order to do so. Furthermore, some other targets set were to identify cost recovery and tariff structure, improve data on decentralized systems, and improve access for vulnerable and marginalized groups.

31. **Target and action examples.** Under the Law on Drinking Water Supply and Wastewater Management of Lithuania, water services costs in urban and rural areas are capped at 4 % of a family's income.

32. In Flanders, Belgium, a method has been developed to monitor affordability of the integral water invoice to ensure sustainable pricing of drinking water, taking into account the various aspects of sustainable water use.

#### **D. Access to sanitation (art. 6 (2) (d))**

33. All Parties except Germany and Switzerland have set targets. Germany explained that, since 2016, 100 % of its population has been connected to collective sanitation systems or other wastewater treatment systems. Switzerland stated that 97 % of its population is connected to central wastewater treatment plants.

34. The long-term targets in many countries were yet to be achieved, but Parties reported on progress towards implementation.

35. Specific targets mainly address increasing coverage of access to sanitation. Countries such as Belgium, the Netherlands, Norway, Portugal, the Republic of Moldova and Romania also have targets for individual/decentralized supplies.

36. **Target and action examples.** Hungary has a target explicitly referencing social support for marginalized groups to ensure increased access to existing wastewater collection systems.

#### **E. Levels of performance of collective systems and other means of water supply (art. 6 (2) (e))**

37. All Parties but two (Czechia, Estonia) have set targets. Those two countries referred to the satisfactory status of their water systems as justification for not setting targets.

38. Most countries had ongoing targets with target dates extending up to 2035. Only two Parties (Azerbaijan, Bosnia and Herzegovina) did not report on progress towards achievement of the targets set.

39. The typical target set among many countries was to decrease disruptions or water losses and increase/or maintain high-performance levels. The Republic of Moldova has plans in place to mitigate extreme weather conditions and emergencies for collective systems.

40. **Target and action examples.** Romania is developing strategies for effective management and detection and reducing water loss to achieve the target of reduction of water loss by 10 %.

41. The "Clean Water" project (Russian Federation) aims at improving drinking water quality by upgrading water supply systems using advanced water treatment technologies for the target on construction and modernization of drinking water facilities.

#### **F. Levels of performance of collective systems and other means of sanitation (art. 6 (2) (e) (continued))**

42. Seven Parties (Bosnia and Herzegovina, Croatia, Czechia, Estonia, Germany, Hungary, Serbia) did not set targets. Czechia, Estonia, Germany and Hungary mentioned either having a satisfactory status or existing goals embedded in the overall water sector reform as justification.

43. Countries that set targets mainly focused on ensuring the water quality of receiving surface water bodies. Common targets among countries included improving and maintaining

good discharge quality and improving sanitation management. Targets also addressed maintaining high performance levels, reducing pollution, reducing wastewater leakage from sewers and enhancing sewerage networks.

44. Specific targets were also set for improving wastewater treatment efficiency and/or improving the quality of treated wastewater released into the environment.

45. **Target and action examples.** To protect plants and animals in water bodies, Switzerland is upgrading its wastewater treatment plants with additional processes targeted at eradicating organic trace elements.

46. The Norwegian Environment Agency recently conducted a nationwide supervision campaign, which found non-compliance in 50 out of 55 municipalities on wastewater collection and treatment systems. The Agency is hopeful that such supervision will make municipalities aware of their obligations and help reduce leakage and overflow.

## **G. Application of recognized good practices to the management of water supply (art. 6 (2) (f))**

47. All but two Parties (Czechia, Estonia) set targets. Czechia cited a satisfactory status. Estonia provided links on good practices of water management existing in the country. Only two Parties (Albania, Bosnia and Herzegovina) did not report on progress towards implementation.

48. In most of the countries, targets and target dates are ongoing, with long-term goals up to a deadline of the mid-2030s.

49. Common targets among many countries include establishing and expanding WSPs, promoting good user practices and improving water supply management.

50. **Target and action examples.** In Hungary, an offline WSP template was developed to assist suppliers in meeting the obligation of WSP development, complementing the target to develop an online tool for the risk assessment of small and very small supplies.

## **H. Application of recognized good practice to the management of sanitation (art. 6 (2) (f) continued)**

51. A total of 11 Parties (Albania, Azerbaijan, Bosnia and Herzegovina, Croatia, Estonia, Finland, Germany, Hungary, Latvia, Republic of Moldova, Spain) did not set specific targets. It was unclear why some countries did not do so, but some cited the EU Water Framework Directive<sup>4</sup> or national laws.

52. Most of the target dates were either in the 2020s, except for a long-term target for the Russian Federation with a target date of 2030, and all but one Party reported on progress towards implementation.

53. Common targets included using water reuse and system upgrade to accommodate emerging contaminants. Other targets addressed applying good practices for the construction of collective systems, recovery of expenses, and improving collections in schools.

54. **Target and action examples.** Belarus set a target aimed at implementing international approaches in the field of sanitation management. One of the measures identified to achieve that target is the development of a methodological and regulatory framework for the implementation of risk assessment and management in sanitation systems.

55. Switzerland is finalizing a General Drainage Plan in the communes' central planning instrument to guarantee adequate water protection in communes and effective draining of housing areas, in accordance with its target set in this area. General Drainage Plans can have complex structures, with various special structures to accommodate overflows.

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<sup>4</sup> See <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32000L0060>.

## **I. Occurrence of discharges of untreated wastewater (art. 6 (2) (g) (i))**

56. A total of four Parties (Belarus, Croatia, Estonia and Germany) did not set targets, stating, by way of justification, that they had sufficient national regulations in place to monitor the discharges.

57. All countries setting the targets have a deadline to the mid-2020s, and all report on progress towards implementation. Progress in Parties included higher wastewater treatment plant coverage, better stormwater management to control overflow and decrease of untreated discharges from treatment plants.

58. The most common targets among countries are to have no untreated discharge and to increase wastewater treatment plant coverage. Other targets include improving storm-water run-off management systems, construction of storm sewers, and recycling phosphorus.

59. **Target and action examples.** Bosnia and Herzegovina has adopted by-laws to improve the warning system and effective response in the event of accidental and sudden water pollution that might have an impact on discharge quality.

60. Romania is working on a target to prevent and reduce the impact of unintentional pollution to ensure optimal management of crises that arise during a given event, including rapid intervention to combat accidental pollution. Most accidents are generally caused by untreated wastewater.

## **J. Occurrence of discharges of untreated storm-water overflows from wastewater collection systems (art. 6 (2) (g) (ii))**

61. A total of ten Parties (Albania, Bosnia and Herzegovina, Croatia, Estonia, Germany, Latvia, Lithuania, Norway, Serbia, Russian Federation) either did not set a target or provided insufficient information to allow for assessment of target reporting and progress. Countries like Lithuania explained having different collection systems for stormwater and municipal wastewater; hence, the target was not set. Countries such as the Russian Federation and Croatia refer to national regulations.

62. Target dates were missing or unclear in some cases, but the reporting on the target was performed by all target setting Parties.

63. Common targets were on improving storm-water management and reducing storm-water overflows. Other targets included lake rehabilitation, municipal precipitation management, and reducing pollution in discharge.

64. **Target and action examples.** Luxembourg is replacing storm-water overflows with storm-water basins to store the first flush of mixed sewer with the highest pollutant loads.

65. Belgium has implemented integrated rainwater management involving collection and retention of rainwater on the receiving plots, instead of returning it to the sewerage system, in order to tackle the issue of excess rainwater in the sewerage network.

## **K. Quality of discharge of wastewater from wastewater treatment installations (art. 6 (2) (h))**

66. All but four countries (Albania, Czechia, Estonia, Germany) set targets. Countries not setting the targets referred to: this target area not being of relevance; existing national laws regulating discharges; or a lack of budget for monitoring.

67. Most of the target dates are in the future, and, except for two countries, all others reported on progress towards implementation of the target.

68. Common targets included improving discharge quality and monitoring discharges. Other targets addressed reducing pollutant loads, improving treatment for micropollutants, and optimizing data capture.

69. **Target and action examples.** Norway has proposed municipal plans based on risk assessment for large wastewater treatment plans for the target: ‘When outlets to a drinking water source, treatment and discharge of wastewater shall be evaluated in order to prevent influence on drinking water source’. Efforts have been made to pilot larger-scale experiments and technologies to launch investments and achieve significant water and climate benefits, as well as improved nutrient and energy self-sufficiency and security of supply.

#### **L. Disposal or reuse of sewage sludge from collective systems of sanitation or other sanitation installations (art. 6 (2) (i), first part)**

70. A total of five Parties (Czechia, Belgium, Estonia, Latvia, Netherlands) did not set targets. The Netherlands clarified that the EU Urban Wastewater Directive sets restrictions on the use and disposal of sewage sludge, and thus the target was not set.<sup>5</sup>

71. The countries that set the targets had target dates ranging from the mid- to late 2020s, and most reported on progress towards implementation of the target.

72. Common targets included improvement of methods for sludge reuse and processing. Other targets were on increasing energy use, phosphorus recovery, and sludge valorization for resource recovery.

73. **Target and action examples.** The Republic of Moldova has approved guidelines on using sludge from EcoSan toilets as fertilizers.

74. Germany has set a target under the Protocol with requirements to recover phosphorus from sewage sludge.

#### **M. Quality of wastewater used for irrigation purposes (art. 6 (2) (i), second part)**

75. Only six Parties (Belgium, Finland, Portugal, Republic of Moldova, Russian Federation, Spain) set targets in this area. In the majority of reporting countries, existing laws restricting reuse of treated wastewater for irrigation are the primary reason for not setting targets.

76. Some countries (e.g., Azerbaijan, Lithuania) specifically mentioned that this target area is irrelevant as they do not have the practice of wastewater reuse for irrigation.

77. Examples of targets include mitigating diffuse pollution, decreasing diseases related to wastewater reuse and improving the quality of reused water.

78. **Target and action examples.** In Israel “effluent quality standards and wastewater treatment rules” permit unrestricted irrigation using treated effluent of appropriate quality. Israel has set a national target to have 85 % of effluent comply with the current rule by 2030, which would greatly increase reused wastewater application for agricultural use in the country.

#### **N. Quality of waters which are used as sources for drinking water (art. 6 (2) (j), first part)**

79. All but four Parties (Albania, Estonia, Germany, Serbia) set targets. Some countries (e.g., Albania, Estonia) refer to the EU directives covering this target as a justification.

80. Most countries had target dates from the mid- to late 2020s, and all of them reported on progress towards implementation.

81. Targets were set in relation to the protection of water bodies and improving drinking water quality. Many EU countries follow the Water Framework Directive. Other targets

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<sup>5</sup> See <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:31991L0271>.

address investigating groundwater resources, adding protection zones, and increasing monitoring.

82. **Target and action examples.** Switzerland has set a target to reduce nitrate levels in groundwater (used or intended for use as drinking water), as cantons are required to implement remediation plans if the nitrate concentration of groundwater exceeds 25 mg/l. The federal Government compensates the costs primarily, reducing legislation stress on cantons, communes and water suppliers.

#### **O. Quality of waters used for bathing (art. 6 (2) (j), second part)**

83. Only four Parties (Albania, Croatia, Estonia, Germany) did not set targets. Albania referred to a sampling programme in place, and Croatia, Estonia and Germany have existing national regulations to ensure that bathing in seawater is satisfactory.

84. Most target dates have either passed or are upcoming soon, with few countries having long-term target dates up to 2025.

85. Common targets included reducing contamination and ensuring good quality of bathing water. Other specific targets were reduction of wastewater in areas used for bathing, increasing bathing sites, and surveillance of cyanobacteria. Many countries practice monthly or biweekly water quality monitoring during the bathing season.

86. **Target and action examples.** Spain has its National Bathing Water Information System, which collects data on bathing water quality and the characteristics of beaches. This helped to increase the number of bathing zones in Spain from 1,941 in 2017 to 1,966 in 2020.

87. Slovakia maps enterovirus occurrence in bathing water using microbial techniques, which will serve as a basis for the amendment of legislation related to monitoring bathing water quality.

#### **P. Quality of waters used for aquaculture or for the production or harvesting of shellfish (art. 6 (2) (j), third part)**

88. A total of thirteen Parties (Albania, Belarus, Belgium, Croatia, Estonia, Germany, Latvia, Lithuania, Luxembourg, Republic of Moldova, Serbia, Slovakia, Switzerland) did not set targets, primarily due to the absence of aquaculture or harvesting of shellfish.

89. Most countries setting targets have continuous deadlines, with some aiming for long-term targets. Most Parties setting targets report (at least partly) on the progress achieved.

90. Common targets included following the requirements of the EU Water Framework Directive, ensuring the quality of water for harvest, and protecting water bodies where aquaculture is practised or shellfish are harvested. Other targets were related to passing laws on shellfish harvesting and research on aquaculture.

91. **Target and action examples.** Romania constantly monitors the water quality parameters of the Black Sea in shellfish harvesting zones to ensure normal growth and reproduction of shellfish, environmental protection and food reserves for shellfish.

#### **Q. Application of recognized good practice in the management of enclosed waters generally available for bathing (art. 6 (2) (k))**

92. All but five countries (Croatia, Estonia, Latvia, Netherlands, Slovakia) have set targets. Most countries do not provide any explanation as to why the targets were not set.

93. Most of the targets set have not been achieved yet, but there has been steady reporting on progress towards implementation.

94. Common targets included compliance with regulations and maintaining quality. Other targets included improving national information systems, quality control in thermal establishments, and developing a best practice guide.

95. **Target and action examples.** The Finnish National Supervisory Authority for Welfare and Health has prepared a practical handbook on the quality and monitoring of enclosed waters, containing, inter alia, instructions for preparing a surveillance programme and operational monitoring. Another objective of the handbook is to intensify cooperation between facilities and municipal health protection authorities and to harmonize practices.

96. The Brussels-Capital Region (Belgium) is adapting the legal framework, which includes swimming pools being subject to permits, and yearly testing for the presence of *legionella pneumophila* in shower facilities to ensure a good quality of enclosed waters and prevent health risks.

## **R. Identification and remediation of particularly contaminated sites (art. 6 (2) (l))**

97. A total of eight Parties (Albania, Bosnia and Herzegovina, Croatia, Estonia, Germany, Latvia, Netherlands, Spain) did not set targets. Countries referred to the absence of contaminated sites, existing national laws, or the EU Water Framework Directive as justifications.

98. The long-term target date for some countries extends up to the 2040s, and there has been consistent reporting from the Parties on progress towards implementation.

99. Common targets generally address the identification and remediation of contaminated sites. Other specific targets included passing laws on soil protection, recording contamination sites, and solving the issue of environmental burdens threatening water resources.

100. **Target and action examples.** Czechia recently created the Contaminated Sites Evidence System database, which provides information on over 10,000 contaminated sites in the country. Information management regarding contaminated sites is the first step in remediation.

## **S. Effectiveness of systems for the management, development, protection and use of water resources (art. 6 (2) (m))**

101. All but six Parties (Croatia, Estonia, Finland, Germany, Latvia, Netherlands) set one or more targets. Parties explained that either national laws, the EU Water Framework Directive, or other sections of the Protocol covered the target area, thus there was no need to set additional targets.

102. Most of the targets have yet to be achieved; progress is ongoing, with good reporting.

103. River basin management plans and the EU Water Framework Directive were frequently referred to in the targets.

104. **Target and action examples.** Hungary carried out several activities, from developing a technical guide, to revising standards, to conducting research, with a target to diagnose the vulnerability and safeguarding of water resources.

## **T. Additional national or local specific targets**

105. Additional targets set included publication of national reports, increasing access to water and health information, raising awareness, creating web portals for water information, and strengthening environmental surveillance of severe acute respiratory syndrome COVID-19 (SARS-CoV-2) in wastewater.

106. **Target and action examples.** The Government of Spain has proposed the creation of a surveillance system for the genetic material of SARS-CoV-2 in wastewater, in accordance with the European Commission recommendations that wastewater surveillance could complement clinical detection work and anticipate possible waves of the COVID-19 pandemic.

## IV. Common indicators

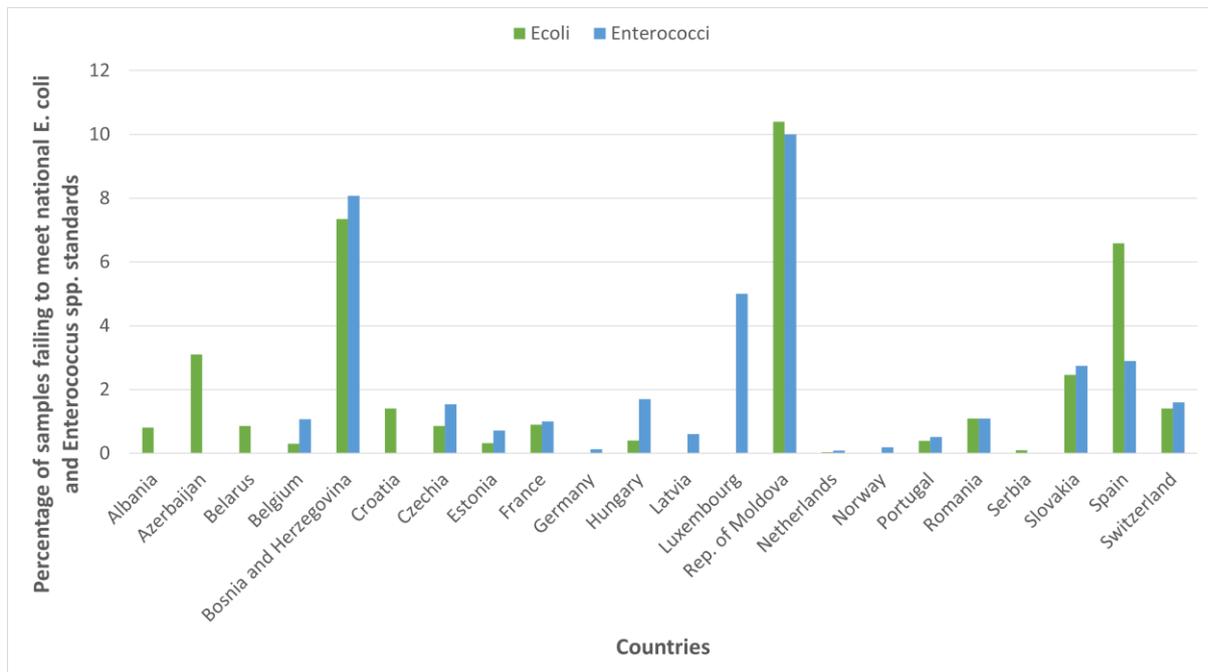
### A. Quality of drinking water

107. In accordance with the revised guidelines and template for summary reports, bacteriological water quality is monitored and reported on in terms of faecal indicator bacteria, specifically *Escherichia coli* (*E. coli*). Parties may also report on up to three other priority microbial indicators and/or pathogens that are subject to routine water quality monitoring. All but three Parties (Montenegro, Norway, Russian Federation) indicated the percentage of samples that failed to meet the national standard for *E. coli*; in addition, nineteen Parties indicated the same information for *Enterococcus* spp. (see figure 1 below). Non-compliance of more than 5 % was only reported by three countries for *E. coli*. Compared to the previous reporting cycle, non-compliance among Parties has decreased, indicating improved microbial drinking water quality. Similarly, for *Enterococcus* spp. only three reporting Parties exceeded non-compliance by more than 5 %. In addition, a few countries (Azerbaijan, Belgium, Croatia, Finland, France, Hungary, Lithuania, Luxembourg, Serbia, Spain) provided segregated data for non-compliance in urban and rural settings.

108. Among countries not yet Parties to the Protocol and submitting reports, only three reported non-compliance for *E. coli*, with Armenia and Georgia having non-compliance of over 20 %. None of these countries provided information on *Enterococcus* spp. Data on microbial parameters for all reporting countries are mostly from 2021, with a few countries also reporting 2020 and 2019 data.

Figure 1

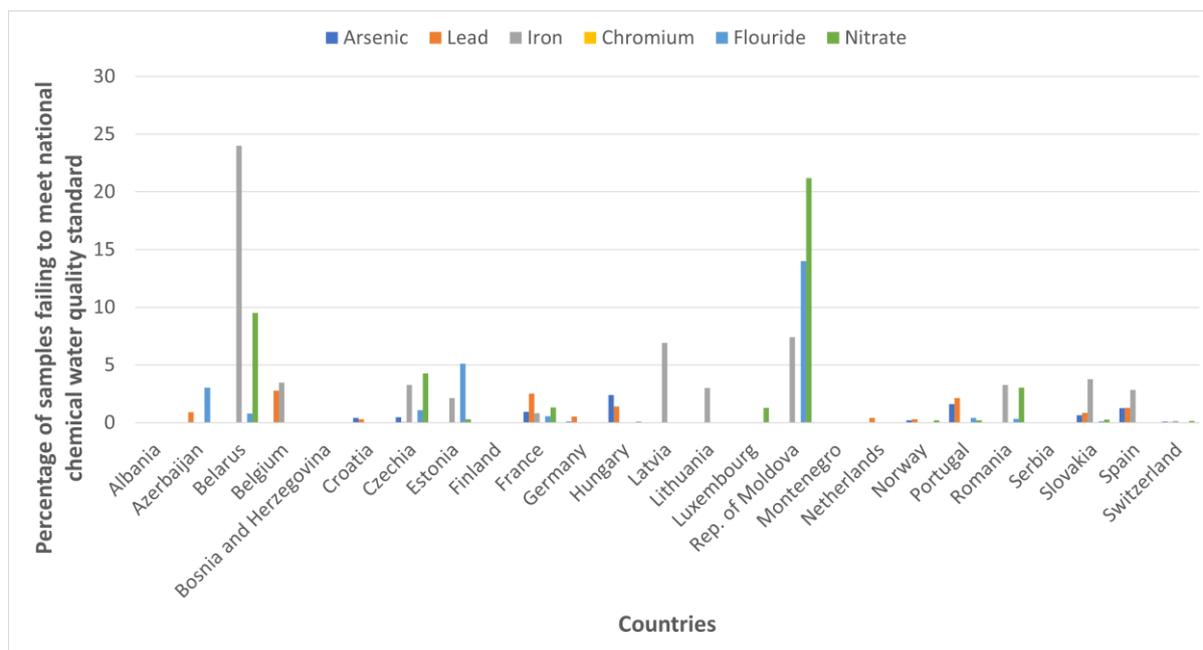
**Percentage of samples failing to meet national *E. coli* and *Enterococcus* spp. Standards**



109. The chemical quality of the supplied water is assessed based on the percentage of samples that fail the national standards for the following chemical parameters: arsenic, lead, fluoride and nitrate. In addition, Parties can report on up to three additional chemical parameters of priority in the local/national context. Reporting on non-compliance with different chemicals was very inconsistent.

110. All Parties but two reported non-compliance on arsenic and lead, whereas seven Parties did not report on nitrate, and thirteen did not report on fluoride. For iron and lead, all countries reported high percentages of samples meeting the national standard for chemical water quality (>95 %) – an improvement on the last reporting cycle (see figure 2 below). However, for fluoride, two countries (Estonia, Republic of Moldova) exceeded 5 % non-compliance; for nitrate, two countries (Belarus, Republic of Moldova) had high non-compliance. Based on national circumstances, a few countries also reported on other chemical contaminants such as ammonium and chromium. Similar to microbial parameters, presented data are mostly from 2021, with a few countries also reporting 2020 and 2019 data.

Figure 2  
**Percentage of samples failing to meet national chemical water quality standard**

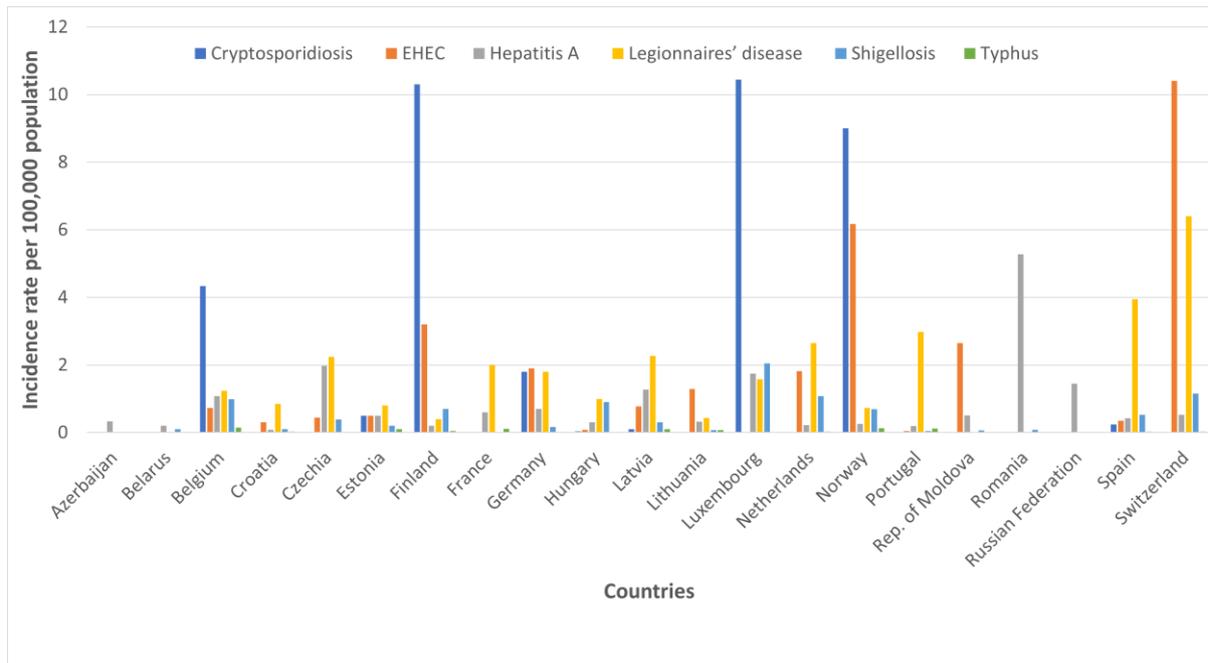


## B. Outbreaks and incidence of infectious diseases potentially related to water

111. All Parties, except Albania, Montenegro and Slovakia, reported water-related disease incidences per 100,000 population for one or more diseases: shigelloses, enterohaemorrhagic E. coli infection, typhoid fever, viral hepatitis A, legionellosis and cryptosporidiosis. It should be noted that reported case numbers represent all exposure routes. Parties are also encouraged to report data from previous reporting cycles to observe the progress. Cryptosporidiosis, enterohaemorrhagic E. coli and legionellosis are the diseases with the highest incidence rate, followed by hepatitis A. In addition, two Parties provided data for leptospirosis and eight countries provided data for giardiasis (see figure 3 below). Data were scattered for other States, with a noticeably high number of hepatitis A cases (21.8 per 100,000 population) in Uzbekistan.

112. Parties not reporting outbreak data highlighted the unavailability of such data. Outbreaks were primarily detected high in countries with strong surveillance systems (Finland, Luxembourg, Norway, Switzerland). Although the reporting template requests that a distinction be made between unavailable data and unreported (zero) outbreaks, inconsistencies were observed in some reports.

Figure 3  
**Outbreak of water-related diseases**

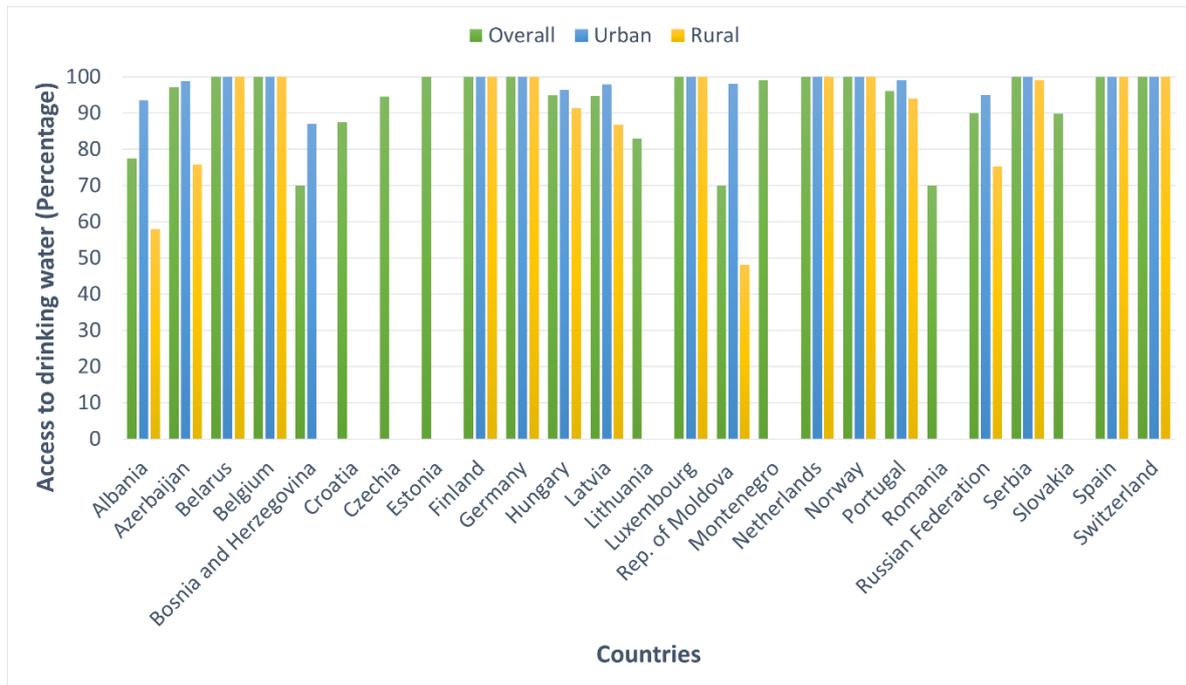


Abbreviations: EHEC, enterohaemorrhagic E. coli.

### C. Access to drinking water

113. All countries provided information on access to drinking water. A total of 17 Parties indicated that drinking water access is in accordance with the Joint Monitoring Programme definition of the improved drinking water source. Among reporting Parties, the overall access rate to drinking water is 95 % according to data from 2020 or 2021 (see figure 4 below). However, many Parties were not able to report segregated information on rural/urban access. Compared to the previous reporting cycle, there has been improvement in access to drinking water. However, significant rural-urban disparities persist, and rural areas lag behind, with countries such as Albania, Azerbaijan and Republic of Moldova having lower than 75 % access in rural areas. All reporting non-Parties except Armenia provided information on access to drinking water with an average of 78 %.

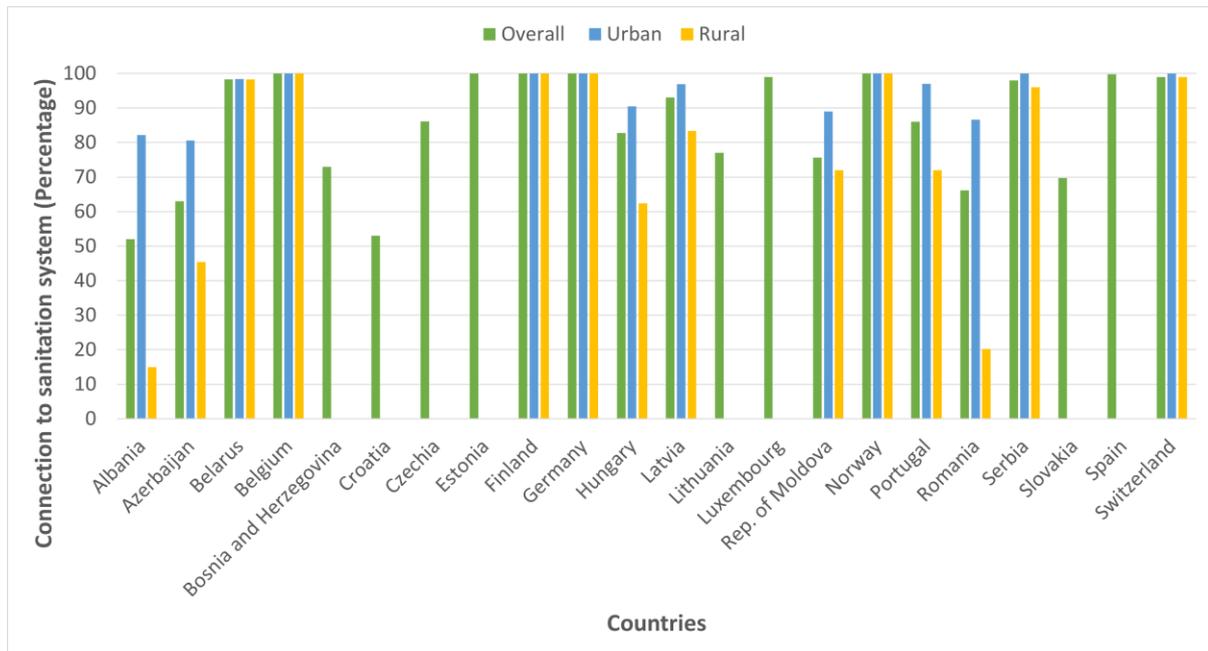
Figure 4  
**Access to drinking water in Parties**



#### D. Access to sanitation

114. France, Montenegro and the Russian Federation did not provide data on access to sanitation, and eight countries did not provide information disaggregated by rural and urban areas. Among reporting Parties, 88 % of the population has access to sanitation. Out of these Parties, 17 countries used the Joint Monitoring Programme reference for access to improved sanitation. As can be seen, access to sanitation systems and services is lower than access to drinking water. In addition, the contrast is even more visible in access among rural communities. Albania has less than 15 % sanitation coverage in rural areas, and Romania only has 20 % coverage (see figure 5 below). Among non-Parties, all reporting countries had >95 % access to the sanitation system except Uzbekistan, with only 18 % access.

Figure 5  
**Access to sanitation systems and services in Parties**

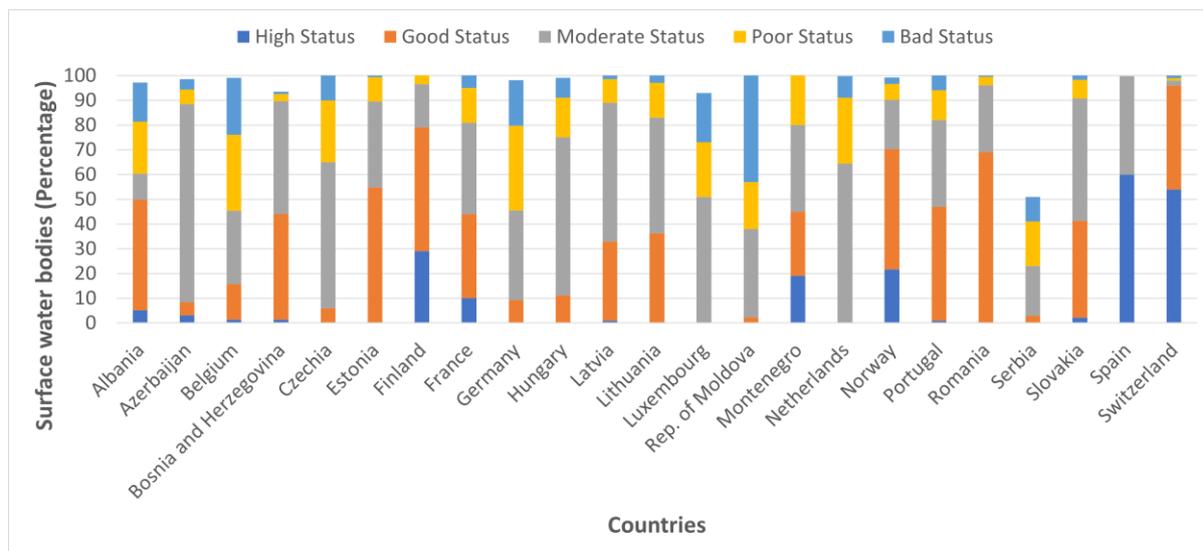


## E. Effectiveness of management, protection and use of freshwater resources

### 1. Ecological status of surface water bodies

115. All but three Parties (Belarus, Croatia, Russian Federation) provided information on the ecological status of surface water bodies. Among the Parties, on average, looking at national figures, 9.11 % of surface water bodies among Parties had high ecological status, 28.01 % had good ecological status, 38.97 % had moderate ecological status, 15.25 % had poor ecological status, and 8.83 % had bad ecological status (see figure 6 below). As shown in figure 6, most of the surface water bodies had good or poor status in the countries. In countries such as France, Montenegro, Norway and Switzerland, more than 10 % of surface water bodies had high ecological status. However, Albania, Belgium, Czechia, Germany, Luxembourg, the Republic of Moldova and Serbia indicated that more than 10 % of their surface water bodies had bad status.

Figure 6  
**Ecological status of surface water bodies**

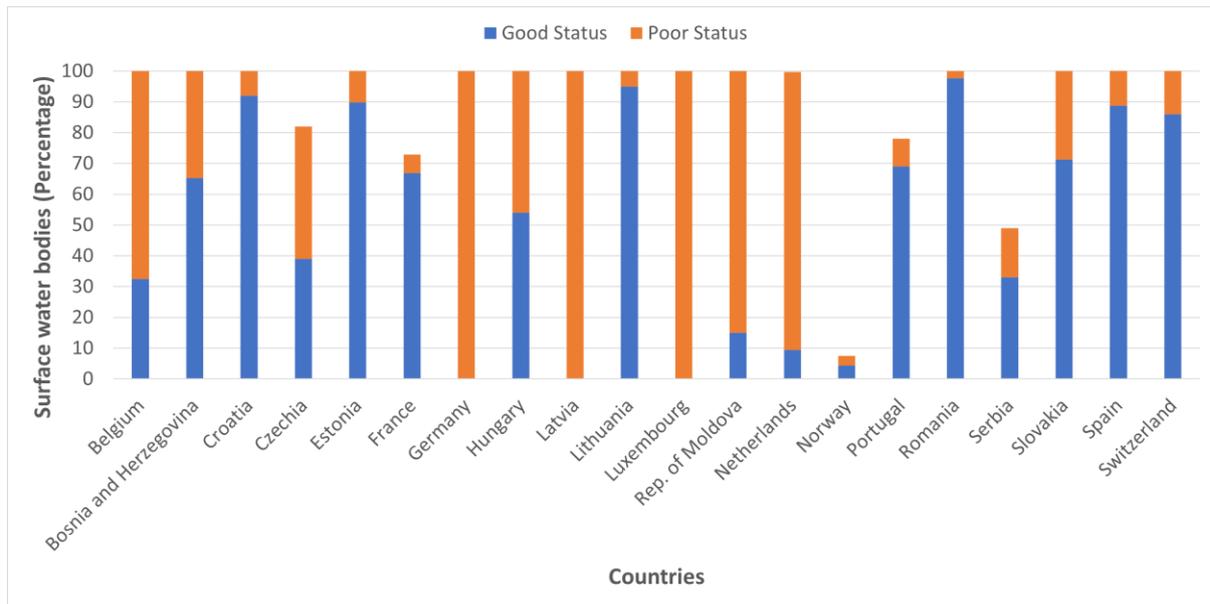


**2. Chemical status of surface water bodies**

116. All but five Parties (Albania, Azerbaijan, Belarus, Montenegro, Russian Federation) reported the chemical status of surface water bodies. On average of national figures, 48 % of surface water bodies were classified as good status in the region and 37.7% as poor status. Three countries (Germany, Latvia, Luxembourg) reported 100 per cent classified as poor status. In the summary reports of Germany and Latvia, however, it is specified that ubiquitous substances such as mercury are considered in the assessment, leading to a higher percentage of water bodies being classified as poor status. Countries such as Estonia, Lithuania, Romania, Spain and Switzerland reported more than 80 % of classified water bodies as having good status (see figure 7 below).

117. When reporting on both the ecological and chemical status of surface water bodies, Parties are requested to provide information on the total number of water bodies classified and the total number in the country. Only fifteen Parties provided complete information on water bodies, with eight of those Parties having 100 % of their water bodies classified for reporting surface water ecological and chemical status, two countries had around 80 % of water bodies classified, and five countries had less than or equal to 20 % of their water bodies classified. The lack of complete information on classified water bodies versus total water bodies in a given country poses limitations for an accurate analysis of the status of surface water bodies among Parties.

Figure 7  
**Chemical status of surface water bodies**

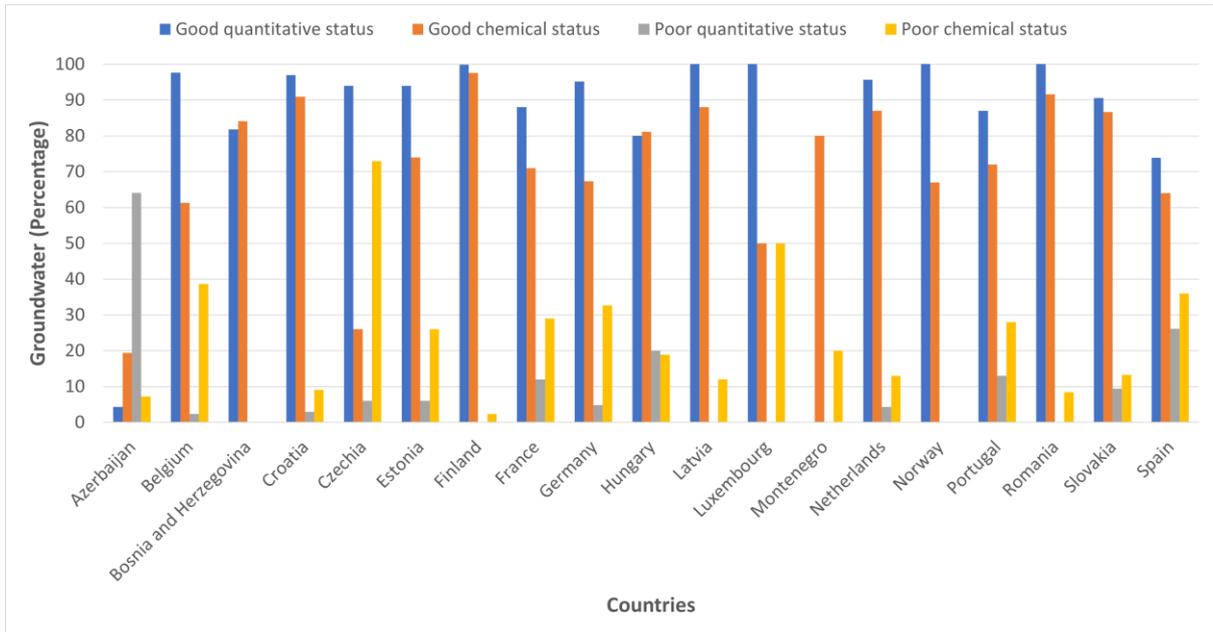


### 3. Status of groundwater

118. The level of reporting on groundwater status was lower than for surface water status. Six Parties (Albania, Belarus, Lithuania, Republic of Moldova, Russian Federation, Serbia) either did not report or had incomplete data for the status of groundwater. The status of groundwaters is reported in terms of quantitative and chemical status. On average, of national figures, 87.73 % of the classified groundwater among the Parties was reported to have a good quantitative status, and 9.51 % had poor quantitative status (see figure 8 below). Similarly, 71.53 % of the classified groundwater was of good chemical status, and 23.30 % was of poor chemical status. Some countries (e.g., Czechia, Estonia) had a high (>90 %) good quantitative status but a poor (>25 %) poor chemical status. Switzerland and Hungary reported >15 % poor quantitative and chemical status of classified groundwater.

119. Similar to the data gap in surface water, the incomplete information on classified groundwater and total groundwater in the countries makes a complete analysis of the status of groundwater among the Parties difficult.

Figure 8  
**Quantitative and chemical status of groundwater**

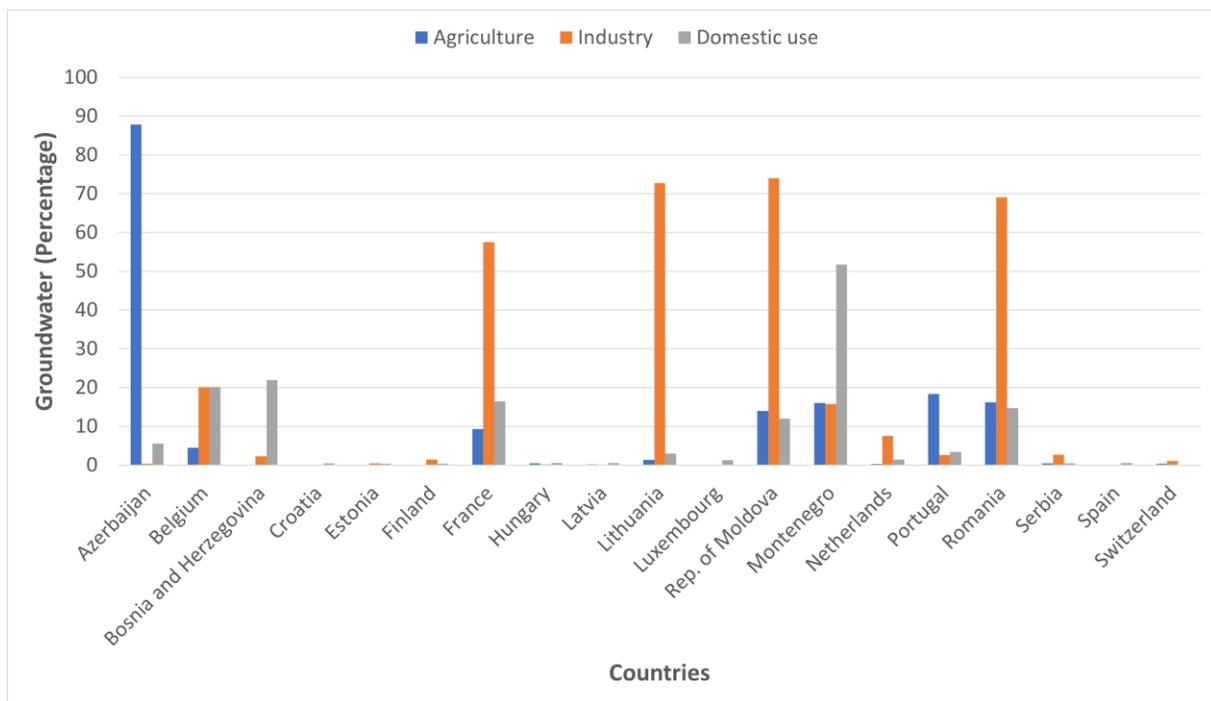


#### 4. Water use

120. The complete set of usable information on the water exploitation index for three sectors – agriculture, domestic use and industry – was provided by 18 countries. However, the reporting was in different units, making it difficult to compare among the Parties. When possible, all data were converted to percentages for agriculture, industry and domestic use, referring to United Nations population statistics.<sup>6</sup> During reporting, some countries totaled the total water use in these three categories, whereas others only showed the use in these categories from national and river basin levels. Therefore, a large discrepancy is seen in the plots for different water use among Parties (see figure 9 below). In general, industrial use of water was really high (<50 %) in France, Lithuania and Romania. Montenegro was the only country reporting more than 50 % water used in domestic purposes. Consistent reporting is necessary for further analyses on water exploitation and use in the region.

<sup>6</sup> See <https://population.un.org/wpp/Download/Standard/Population/>

Figure 9  
**Water use among the Parties**



## V. Water-related diseases surveillance and response systems

121. Almost all Parties reported on the status of their water-related diseases surveillance and reporting systems. In accordance with article 8 of the Protocol, the countries reported progress status based on the three critical elements of surveillance and response systems and as summarized below (including in table 1):

(a) Surveillance and early warning systems: all reporting Parties had overall surveillance and early warning systems in place (table 1). All non-Parties except San Marino reported having surveillance and early warning systems in place;

(b) Contingency plans for responses to outbreaks and incidents of water-related disease: the majority of Parties had such contingency plans in place, whereas Luxembourg, Portugal and Switzerland had plans in preparation and Lithuania had no such plan;

(c) Public authorities' capacity to respond to such outbreaks and incidents: only two Parties (Romania, Serbia) had plans in preparation to strengthen the capacity of public authorities to respond to outbreaks; all other Parties reported public authorities as having sufficient capacity to respond to outbreaks.

122. **Action example.** Norway has a robust disease surveillance and response system; three surveillance systems, namely the Surveillance System for Communicable Diseases, the national web-based outbreak rapid alert system (Vesuv) and the Syndromic Surveillance System, work in coordination for effective surveillance and response. Additionally, Norway has key legislation in place for effective surveillance and response.

Table 1  
**Status of surveillance and outbreak systems among Parties**

	<i>No. of countries with surveillance and early warning systems</i>	<i>No. of countries with contingency plans for responses to outbreaks</i>	<i>No. of countries public authorities of which have capacity to respond to outbreaks</i>
Yes	25	20	22
In progress	0	3	2
No	0	2	1

*Note:* Montenegro acceded to the Protocol in November 2019 and, in accordance with article 8 (3), has three years to comply with the requirements of article 8. The Party is therefore not included in the analysis contained in the present document.

## VI. Emerging trends and other selected highlights

### A. Climate change

123. Climate change has become one of the most significant global challenges, posing a high risk to water and sanitation services in the region. In all, twenty countries, including the non-Parties, have acknowledged the impact of climate change within the targets or have specific plans for climate change adaptation.

124. **Action examples.** Luxembourg is replacing storm-water overflows with storm-water basins for management of high-intensity rainy periods, which are likely to intensify due to climate change.

125. Italy specifically drafted a National Action Plan for adaptation to climate change, under which sectoral impacts and vulnerabilities and sectoral adaptation for water and health are planned.

126. Similarly, Belarus has a National Strategy for Water Resources Management in the Context of Climate Change for the period until 2030, which discusses specific action plans for water supply and sanitation, such as the development of storm-water run-off systems, or sustainable management of surface wastewater in settlements.

### B. Coronavirus disease

127. In all, seventeen countries, including non-Parties, have acknowledged the impact of COVID-19 in their reports and have discussed WASH-related response measures taken in the context of the pandemic. By way of illustration, COVID-19 has clearly underlined the importance of hand hygiene, and several countries worked to improve hygiene facilities in households and institutional settings.

128. **Action examples.** Romania took measures to reduce the spread of COVID-19 in schools and health-care facilities by providing clean water, hand hygiene stations and soap. Additionally, protocols and checklists for cleaning in the instructional settings were updated to ensure increased frequency of cleaning and sufficient staffing.

129. Spain enacted policy measures to guarantee access to water during the pandemic, at the peak of which the Government's "Social Shield" measures included a ban on cutting off water supply due to non-payment of water bills, in order to protect the vulnerable population.

130. In all, seven countries also explicitly referred to the use of wastewater-based epidemiology methods in COVID-19 surveillance. Switzerland highlighted that monitoring of the SARS-CoV-2 virus in wastewater had been conducted since the beginning of the pandemic to complement clinical COVID-19 surveillance, and that, in addition, testing methods were developed and optimized and it was successfully demonstrated that virus levels in wastewater correlate with clinical case numbers.

## C. Equity

131. A total of thirteen Parties (Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Croatia, Estonia, Finland, France, Hungary, Lithuania, Portugal, Republic of Moldova, Spain) and three non-Parties (Israel, Malta, San Marino) reported having equity of access to water and sanitation assessed in their respective country (see table 2 below). Similarly, two Parties (Czechia, Romania) and one non-Party (Georgia) reported an in-progress equity assessment. Three Parties (Luxembourg, Montenegro, Slovakia) and two non-Parties (Armenia, Uzbekistan) provided no information on equity assessment.

Table 2  
**Status of equity assessment among Parties and non-Parties**

<i>Equity assessment</i>	<i>Parties</i>	<i>Non-Parties</i>
Yes	13	3
In progress	2	1
No	8	0
No data reporting	3	2

132. Furthermore, Parties and other States reported on whether their national policies or programmes included actions to improve equitable access to water and sanitation, with specific reference to the three dimensions of equity considered under the Protocol (responses summarized in table 3 below).

Table 3  
**Equitable access in national policies among Parties and non-Parties**

<i>National policies including actions to:</i>	<i>Parties</i>	<i>Non-Parties</i>
Reduce geographical disparities	10	3
Keep water and sanitation affordable for all	14	3
Ensure access for vulnerable and marginalized groups	13	2

133. **Action examples.** Equity was taken into account by some countries while also setting the targets; for example, Germany and Hungary have equitable access embedded in the targets on access to safe and affordable drinking water for all. One good example of action for ensuring equitable access is the safety net for socially vulnerable groups in the Netherlands: households receiving debt assistance are not disconnected from the water supply; water companies also have to follow a specific procedure to disconnect the water supply of persons living with health problems. The Netherlands also states that it will pay special attention to vulnerable groups for the implementation of the EU Drinking Water Directive (recast).<sup>7</sup>

## D. Institutional water, sanitation and hygiene

134. All but five Parties (Albania, France, Montenegro, Slovakia, Switzerland) reported on WASH services in schools and health-care facilities. On average, among Parties, for schools, 99 % had access to drinking water, 96 % to sanitation services, and 94 % to hygiene services. Similarly, for health-care facilities, 100 % had access to drinking water, 92 % to sanitation services, and 98 % to hygiene services. These numbers, however, do not reflect the quality and status of services. In all, sixteen Parties assessed the WASH situation in schools (see

<sup>7</sup> See <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020L2184>.

figure 10 below), and fifteen countries assessed the WASH situation in health-care facilities (see figure 11 below).

135. Few countries reported the assessment in progress, but eight countries either did not report on or had not undertaken such an assessment. Among other reporting States, three reported assessing WASH in schools and health-care facilities, and three countries had no information, or had not undertaken such assessment. A total of thirteen countries (including one non-Party) reported having the approved policies to strengthen institutional WASH, focusing mostly on improving WASH in schools (see table 4 below).

Table 4

**Water, sanitation and hygiene assessment in schools and health-care facilities**

WASH assessment	Parties		Non-Parties	
	Schools	HCFs	Schools	HCFs
Yes	17	15	3	3
No	5	4	1	1
In progress	2	4	0	0
Not reporting	2	3	2	2

Note: HCFs., health-care facilities

136. **Action example.** Approximately fifteen Parties reported targets on institutional WASH, including improving health strategies for schools, promoting WASH in education, and developing specific regulations to ensure access to WASH services in schools and health-care facilities. Serbia embedded institutional WASH targets in overall access targets to improve schools’ drinking water and sanitation services. The targets for institutional WASH in Serbia also included an estimated investment required to improve WASH in schools, raising awareness of teachers, staff and students on hygiene, and exploring investment opportunities for wastewater disposal and emptying of septic tanks in schools.

Figure 10  
**Water, sanitation and hygiene service coverage in schools in Parties**

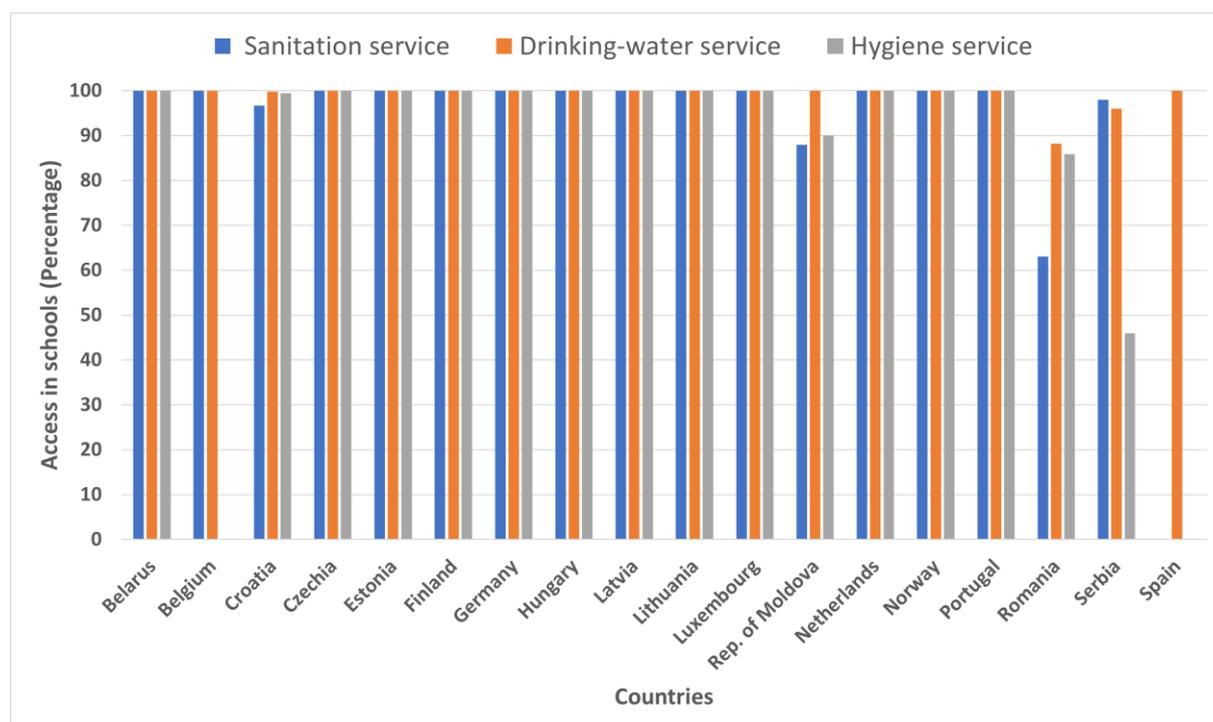
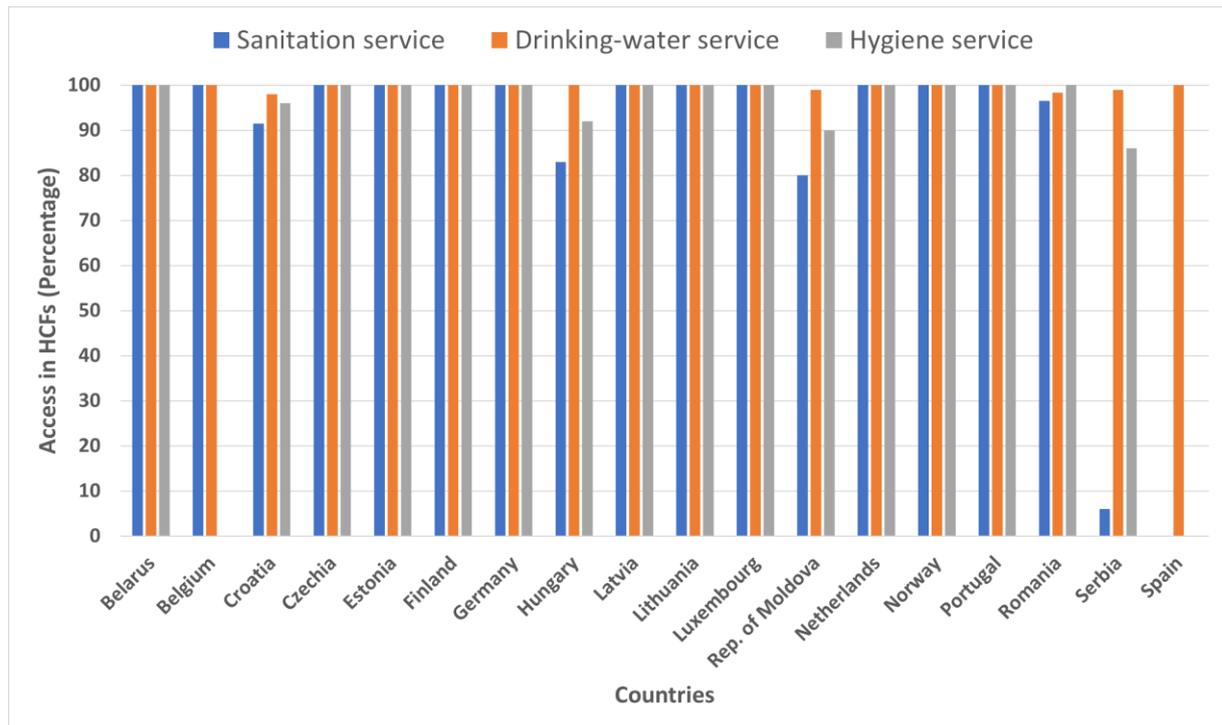


Figure 11  
**Water, sanitation and hygiene service coverage in health-care facilities in Parties**



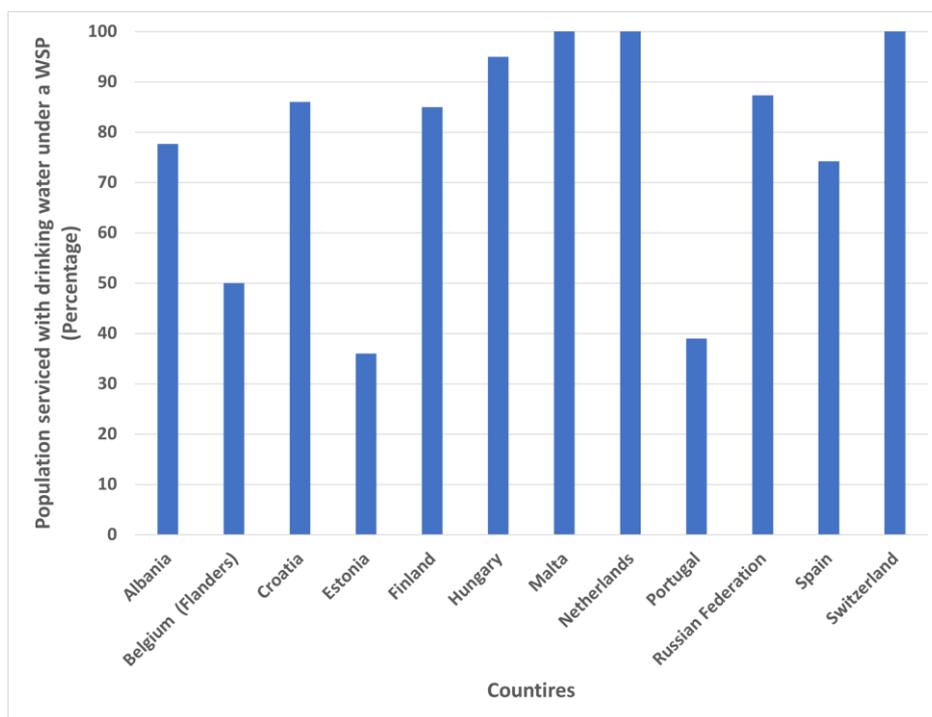
### E. Risk-based approaches for drinking water supply

137. In accordance with the template, Parties report on national policies or regulations requiring the implementation of WSPs, and on the percentage of the population serviced by a drinking water supply operating under a WSP. In all, sixteen Parties reported having in place a national policy or regulation for risk-based management, six reported that development of such policies was in progress, and four either provided no information or had no policies or regulations in place. Among other reporting States, only Israel reported having policies on risk-based management; Georgia and Malta reported work in progress.

138. A total of eleven countries (including one non-Party, Malta) provided information on the percentage of the population serviced with drinking water under a WSP (see figure 12 below). Belgium (Flanders region only), Malta, Netherlands and Switzerland had 100 % of the population serviced with drinking water through WSPs. Estonia and Portugal had the lowest coverage, with, respectively, 36 % and 39 % of the population getting drinking water managed under a WSP.

139. **Action example.** The Republic of Moldova is one of the countries working on adopting WSPs. WSP implementation has been a national objective since 2016, the goal being to achieve implementation by 2025 for all rural and urban settlements with a population of over 2,000.

Figure 12  
**WSP-covered population, including Malta**



Abreviations: WSP, water safety plan.

## F. Circular economy

140. A circular economy approach offers the opportunity to recognize and capture the full value of water and waste. Examples of actions promoting circular economy in the water and sanitation sector are water reuse for irrigation in agriculture, portable use of reclaimed wastewater, non-sewer wastewater recycling for agricultural use, etc. The target area on “Disposal or reuse of sewage from collective systems of sanitation or other sanitation installations” specifically promotes the reuse of sludge and wastewater. Many countries in the region (e.g., Azerbaijan, Lithuania, Luxembourg, Norway, Republic of Moldova, Romania) have specific plans for sludge reuse for agriculture. Some countries like Belgium and the Netherlands had no sludge reuse in plans, but water reuse for industrial and agricultural use is under discussion. The EU Urban Wastewater Directive restricts the use and disposal of sewage sludge (see para. 71 above); thus, many countries do not select that option. Countries such as Germany and Switzerland also focus on phosphorus recovery and recycling for agricultural applications.

141. **Action example.** Israel, a water-stressed country, benefits from a circular economy approach; 95 % of the effluents from wastewater are reused, constituting the major water source for irrigated agriculture. National laws require water and wastewater corporations to increase connection to the centralized sewer systems to increase the volume of treated effluents for agriculture.

## G. Decentralized water supply and sanitation systems

142. Nineteen Parties referred to decentralized supply systems and set specific targets in improving access to drinking water and sanitation. Belgium, Estonia, Finland and Switzerland also discussed aspects related to regulation and surveillance, as well as expansion of individual water supply and sanitation systems in rural areas.

143. **Action example.** In Belgium, 98 % of the sanitation service is through centralized treatment and only 2 % through individual treatment. Several targets were set in recent years to implement and expand individual systems in the country effectively. In the Brussels

Capital Region, a subtarget ending in 2023 is to clarify the framework for individual treatment plants. The review of the legal framework is ongoing to identify cases requiring individual treatment.

## **H. International cooperation on water and health**

144. International cooperation on water and health mainly takes place within the framework of international agreements on transboundary waters and through international river basin management plans.

145. **Action examples.** An excellent example of international cooperation that goes beyond the Protocol countries is the establishment of the “International Solidarity Fund” by Belgium, which is funded through water suppliers’ income (€0.005/m<sup>3</sup>). To date, €2.5 million has been provided to improve access to drinking water and adequate sanitation in developing countries.

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