

Summary reports in accordance with article 7 of the Protocol on Water and Health

Executive summary

Please provide an overall evaluation of the progress achieved in implementing the Protocol in your country during the reporting period. Please provide a short description of the main steps taken and highlight important achievements, key challenges, success factors and concrete good practice examples.

Suggested length: maximum 2 pages

Water is an integral part of life on Earth, which is why the Protocol was ratified in Slovakia in 2001 in order to support water protection and improve its efficient use. The first national targets in harmony with protocol on Water and Health were set in 2001 and updated two times in year 2007 and 2014.

The provisions of the Protocol in the Slovak Republic apply to all types of water – surface and groundwater, closed water bodies, bathing water, drinking water supply, sewerage and wastewater treatment.

Since none of the target was fulfilled to the end of the year 2018, there was not necessary to set new targets up to now. In this period, however, we have already met most of the targets (partially or completely), we plan to set new targets during the year of 2022 with regard to current events in the world and in Slovakia in connection with the Drinking Water Directive (2020/2184).

The achievement of the set targets will be described in more detail in the following sections of this summary report.

Part one General aspects

1. Were targets and target dates established in your country in accordance with article 6 of the Protocol?

Please provide detailed information on the target areas in part two.

YES NO IN PROGRESS

If targets have been revised, please indicate the date of adoption and list the revised target areas. Please provide detailed information in part two.

Slovak Republic has set up own 3rd national targets in the first half of 2014. Some targets are fully met, some partially met and will be further worked on (eg informing the public). Therefore, there are no revised targets in this period since 2014.

2. Were targets and target dates published and, if so, how?

Please explain whether the targets and target dates were published, made available to the public (e.g., online, official publication, media) and communicated to the secretariat.

Last revised 3rd national targets were presented at specialist and expert forums conferences, and they were also published on website of Public Health Authority of the Slovak Republic. (https://www.uvzsr.sk/index.php?option=com_content&view=article&id=1234%3Aprotokol-onvode-anzdravi&catid=159%3Aprotokol-o-vode-a-zdravi&Itemid=92).

3. Has your country established national or local arrangements for coordination between competent authorities for setting targets? If so please describe, including information on which public authority(ies) took the leadership and coordinating role, which public authorities were involved and how coordination was ensured.

Ministry of Health of the Slovak Republic and the Ministry of Environment of the Slovak Republic are two institutions responsible for implementation and fulfilment of the Protocol on Water and Health in the Slovak Republic.

The Public Health Authority of the Slovak Republic is institution which took the leadership and coordinating role in all areas (setting targets, reporting national reports, organization of workshops and meetings if it needs and etc.).

In process of targets setting and fulfilment are involved these institutions:

- **Health sector:** Ministry of Health of the Slovak Republic, Public Health Authority of the Slovak Republic and 36 Regional Public Health Authorities, Inspectorate of Spa and Springs and National Reference Centre for Drinking Water;
- **Environmental sector:** Ministry of Environment of the Slovak Republic (Water Section, Section of Geology and Natural Resources), State Nature Protection of the Slovak Republic, Water Research Institute; Slovak Environmental Agency;
- **Interior sector:** Office of the Governmental Plenipotentiary for Romany Communities;
- **Municipalities.**

4. Was a programme of measures or action plan developed to support implementation of the targets? If so, please briefly describe that programme or plan, including how financial implications were taken into account.

Some targets of the Protocol are supported by updated (2nd) Water Plan of the Slovak Republic (implementation of the Water Framework Directive “WFD”) from 22 December 2015, which contains the Programme of Measures. These are focused on: reduction of organic pollution, reduction of nutrients, reduction of priority substances and other relevant substances and hydrological changes; and on problems with quality and quantity of groundwater. Concrete measures are published in annexes of the Programme of Measures (Slovak language): <https://www.minzp.sk/sekcie/temy-oblasti/voda/koncepcne-aplanovacie-dokumenty/vodny-plan-slovenska-aktualizacia-2015/>.

Financial issues are described in Part two points III. and IV.

5. What has been done in your country to ensure public participation in the process of target setting in accordance with article 6, paragraph 2, and how was the outcome of public participation taken into account in the final targets set?

The proposal of updated national targets went through national legislative process including comments from the public via internet portal where exists opportunities to put comments of proposals like individual person, NGO, state institutions etc. Public had no relevant comments.

6. Please provide information on the process by which this report has been prepared, including information on which public authorities had the main responsibilities and what other stakeholders were involved.

The Public Health Authority of the Slovak Republic prepared national summary report for Fifth reporting cycle under the UNECE-WHO/Europe Protocol on Water and Health in cooperation with Ministry of Health of the Slovak Republic, the Ministry of Environment of the Slovak Republic and other responsible institutions mentioned in point 3.

7. Please report any particular circumstances that are relevant for understanding the report, including whether there is a federal and/or decentralized decision-making structure.

We did not have any significant obstacles in implementing the Protocol, as all inhabitants have access to drinking water in accordance with the WHO / UNICEF definition, the wastewater treatment process continues to meet the requirements of the Directive.

For better implementation of Protocol on Water and Health in the Slovak Republic constraints are:

- **Finance:**
 - Ministry of Health of the Slovak Republic – most of the tasks of Protocol are performed by state budget - health and environment sector funds.
 - Ministry of Environment of the Slovak Republic – for implementation of 91/271/EEC directive are used money mainly from state budget and from the Operating Programme Quality of Environment. There is still lack of money for fulfilment of requirements of this directive.

- **Personal capacity:**
 - In Health sector – there is perceived the lack of personal capacities in fulfilling the tasks set by the goals and in the reporting process
 - In Environmental sector – there is perceived the lack of personal capacities in fulfilling the tasks set by the goals and in the reporting process

Part two

Targets and target dates set and assessment of progress

For countries that have set or revised targets and target dates, please provide information specifically related to the progress towards achieving them. If you have not set targets in a certain area, please explain why.

For countries in the process of setting targets, please provide information on baseline conditions and/or targets considered under the relevant target areas.

Suggested length: one page (330 words) per target area.

I. Quality of the drinking water supplied (art. 6, para. 2 (a))

For each target set in this area:

1. Please describe the current target and target date. Please provide information on the background (including the baseline/starting point and reference to existing national and international legislation) and justification for the adoption of the target.
2. Please describe the actions taken (e.g., legal/regulatory, financial/economic, informational/educational and management measures) to reach the target (see also article 6, paragraph 5, of the Protocol).
3. Please assess the progress achieved from the baseline towards meeting the target as well as any challenges encountered.
4. Please describe how the target set under this area contributes to fulfilling global and regional commitments, in particular the 2030 Sustainable Development Agenda.
5. If you have not set a target in this area, please explain why.

National target No. 3 – Improvement of quality and safety of drinking water – set in accordance with the Art. 6, pt. 2 letter a), b), c) and e) of the Protocol

1. Reason for setting the target was to increase health safety of drinking water – through limitation or total elimination of disinfection based on chlorine in selected public water supplies. Treatment of drinking water with chlorine and its compounds is the most common way of its hygienic adjustment in Slovakia, which prevents spread of diseases; however, it is connected with the risk of formation of unwanted disinfection by-products. Since in practice it is very demanding to make laboratory analysis of the whole spectrum of chemical substances which can originate as a consequence of disinfection of drinking waters, new methods are being looked for, to identify their presence in drinking water. For this purpose, ecotoxicological examinations were used, as they can identify pollution of the waters without the knowledge about their chemical composition. The aim is also to elaborate such proposal of facilities of mass supplies of drinking water, when there will be the smallest health risk possible for supplied inhabitants as for the presence of disinfection by-products.

2. National target was realized in framework of personnel capacities of public health bodies and respective water companies. No special financial resources were allocated for its realization from the state budget.

In connection with the fulfilment of the national target, there was an ongoing work on „*Disinfection by-products and quality of drinking water*“ under the task of Programs and projects of public health.

In 2018 Regional Public Health Authority with the seat in Banská Bystrica evaluated the task „*Disinfection by-products and quality of drinking water*“ in public water supplies of StVS, a. s. and StVPS, a. s., which was realized in districts Banská Bystrica and Brezno in the years 2014 to 2017. During the year 2019, source materials were prepared for elaboration of the final report. In the year 2020, NRC for ecotoxicology and Department of Environmental Hygiene of the PHA SR cooperated in solving the task with West Slovak Waterwork Company. Water samples were taken by workers of waterwork company from selected sample places of long distance water system Jelka – Galanta – Nitra, which disinfection was made with chlorine dioxide. In case of water reservoir in Nitra, also gaseous chlorine was used according to the actual situation.

Totally, 17 samples of water in 4-time intervals were taken in 2020, which were 323 indicators and 3126 analyses. NRC for ecotoxicology performed in taken samples assessment of the indicator Acute ecotoxicity, which was evaluated based on results from ecotoxicological examinations on 4 organisms: *Thamnocephalus platyurus*, *Vibrio fischeri*, *Desmodesmus subspicatus* and *Sinapis alba*. In case of *Thamnocephalus platyurus*, *Vibrio fischeri* and *Desmodesmus subspicatus* no effects were observed. When evaluating results of assessment of Acute ecotoxicity, slightly increased inhibition effect on organism *Sinapis alba*, most likely caused by the presence of not specified substances in water taken from wells. NRC for hydrobiology in framework of fulfilment of this task was assessing in all 17 samples biological indicators for drinking water. All water samples have been microbiologically examined in indicators according to STN 75 7711 and STN 75 7712 (Abioseston, Filamentous bacteria, Iron and Manganese bacteria, Micromycetes, Living organisms, Dead organisms).

In 6 water samples from wells, non-compliant water quality was found in indicator Micromycetes.

3. The progress achieved in target accomplishment and the difficulties occurred while meeting it

From the results it is clear that used ecotoxicological examinations are suitable tool for monitoring of water quality when using disinfection agents based on chlorine. Results from

microbiological and biological analyses at the same time confirmed that also without continual chlorination of the water there is a real possibility to maintain its complying quality in consumer. Partial results from monitoring of quality of drinking water during the period of the project were presented on expert conferences.

At present, database of all laboratory results is prepared, final results are evaluated and data to final report are processed.

4. Improvement of quality and health safety of drinking water contributes towards fulfilment of global target of Global Sustainable Development Goal no. 3 Good Health and Well-Being of the Agenda 2030.

At national level, results will serve as a source material for modification of legislation on monitoring of quality of waters for human consumption.

5. Slovak Republic has set two national targets in this area.

National target No. 4 – Monitoring of pesticides in drinking water – set in accordance with Art. 6 pt. 2 letter a), b), c) and e) of the Protocol

1. The reason for setting the target was to reassess the currency of pesticides, which are detected in water sources (especially in the vicinity of agricultural areas) when controlling drinking water by suppliers. According to the legislation in force, drinking water suppliers are obliged to detect and evaluate substances whose presence can be assumed, which in practice led to differences in access to pesticide control and efforts by drinking water suppliers to adapt the range of substances detected to their own laboratory options. In 2017, the presence of atrazine in drinking water was confirmed in 3 public water supply systems in Dunajská Streda district, which highlighted the need for a more comprehensive view of the issue of pesticides in waters.

The original content and scope of the objective have been extended and cross-sectoral cooperation in the field of pesticides has significantly intensified, leading to a number of joint activities.

2. During 2018, working meetings of representatives of the Ministry of Health of the Slovak Republic, the Ministry of Environment of the Slovak Republic and the Ministry of Agriculture and Rural Development of the Slovak Republic and their specialized institutions (Public Health Authority of the Slovak Republic, Water Research Institute, Slovak Hydrometeorological Institute, The Central Control and Testing Institute in Agriculture) took place with the goal to set the criteria for the control of pesticides in drinking water and its sources. On 1 February 2019, the following information was made available on the website of the Public Health Authority of the Slovak Republic:

- Recommended procedure for the survey and evaluation of pesticides and their metabolites in drinking water and its sources (https://www.uvzsr.sk/docs/info/pesticity/Pesticidy_Pokyn.pdf), which includes, in addition to the basic framework for the control of pesticides, criteria for adjusting the number of substances surveyed and a practical procedure for drinking water suppliers for the survey and evaluation of pesticides.
- The list of pesticides for monitoring of drinking water and its sources (https://www.uvzsr.sk/docs/info/pesticity/Pesticidy_Zoznam.pdf) which contains a list of effective pesticides and their metabolites with currently assigned relevance. It is the first list that is uniform for the whole of Slovakia and it includes a total of 90 substances. For groundwater, 68 significant and 21 additional substances were specified and 46 significant and 43 additional substances were specified for surface water. When creating the list, all relevant available data were taken into account as:

total amount of pesticides used in agricultural production, results of surface water and groundwater monitoring for the period 2007-2017 and the documents of professional institutions. Behaviour of substances in the environment, experience from the national assessment of risks of pesticides to groundwater and soil, results of drinking water quality control, etc. were also taken into account.

In 2019, the Working Group on the updating of the list of pesticides for drinking water monitoring and its sources under the Ministry of Health of the Slovak Republic was mandated to continuously review the above-mentioned documents. The update should be based on the results obtained from the control of groundwater and surface water sources that are designated for the abstraction of drinking water and on new expertise in the field of pesticides. The Working Group on the updating of the list of pesticides for drinking water monitoring and its sources started its functioning on 13 November 2019.

2.1 On 1 January 2019, Act no. 305/2018 Coll., which defines protected water management areas, prohibited activities and measures for the protection of surface water and groundwater, rights and obligations of persons in the field of water protection, the competence of state administration bodies and municipalities and defines liability for breaches of obligations entered into force. The law is an interdepartmental law; its author is the Ministry of Environment of the Slovak Republic and the co-authors are the Ministry of Health of the Slovak Republic and the Ministry of Labour, Social Affairs and Family of the Slovak Republic. The aim of the regulation is the increase in efficiency of the cooperation of all stakeholders and increase of awareness and protection of public health in case that contamination could have an impact on the supply of drinking water to the population.

2.2 On 26 February 2019, pursuant to Decision on selected non-relevant metabolites of pesticides

(https://www.uvzsr.sk/docs/info/pitna/Rozhodnutie_pre_vybrane_nerelevantne_metabolity_pesticidov.pdf) limits were established for 9 selected non-relevant metabolites of pesticides, presence of which can currently be anticipated or presence of which has already been detected by some drinking water suppliers in Slovakia.

2.3 Throughout the whole period, due to the detection of atrazine in drinking water in 2017, the increased state health surveillance and monitoring of drinking water in Žitný ostrov region and districts of southern Slovakia was carried out by public health authorities.

- In 2018, the surveillance focused on checking the functionality of water treatment plants that were built for the removal of atrazine from drinking water in group water supply Trstená na Ostrove, group water supply Holice and water supply Blatná na Ostrove. Furthermore, two more were built for the two permitted exemptions for the use of drinking water that does not meet the drinking water quality limits. These were: exception for the group water supply Veľká Paka (supplying 802 inhabitants) and Mierovo area (supplying 148 inhabitants); their effectiveness expired due to the introduction of water treatment approximately after 7 months. A total of 17 water pipelines in 20 municipalities and 3 sources for collective supply in 2 municipalities in the districts of Dunajská Streda and Galanta were monitored (all samples passed).
- In 2019, additional 2 drinking water treatment plants were pre-emptively installed in public water supply systems that were close to the limit values of atrazine – public water supply Nový Život – Eliášovce and public water supply Horný Bar. In September 2019, targeted monitoring of atrazine was carried out in the district of Dunajská Streda with emphasis on control of drinking water consumption and sources, in which its presence was detected in 2017 and 2018. A total of 15 samples from 13 municipalities complied with the valid requirements for drinking water quality.

Monitoring in 2020 (September to November) focused on selected triazine and chloroacetanilide pesticides and their metabolites and other substances according to the recommended list of pesticides. It took place in 6 districts of southern Slovakia, where based on data from The Central Control and Testing Institute in Agriculture, the above-mentioned types of pesticides were used in the highest quantities: Dunajská Streda, Galanta, Levice, Komárno, Nové Zámky and Nitra. 79 sampling points of long-distance water pipelines, public water supply systems and sources providing mass supply of drinking water were mainly located in municipal offices, kindergartens and primary schools or companies. A total of 2 291 pesticides were investigated; presence in concentration (atrazine, desethylatrazine) exceeding the limit value for drinking water was detected in 4 samples. Repeated control testing did not confirm the excess presence of atrazine in either of the investigated sites. The presence of desethylatrazine was confirmed in 1 water well for collective supply. Cases of the above-limit values or values approaching the limit for pesticide substances in drinking water were dealt with by Regional Public Health Authorities in accordance with their competence (e.g. in the village of Potônske Lúky was issued a 3-month ban on the use of drinking water from the public water supply and, after the introduction of the adaptation, ordered the supplier the increased monitoring of drinking water).

3. The issue of pesticides has come to the fore in Slovakia especially after 2017. The occurrence of atrazine in drinking water exceeded local scope and led to immediate measures in several sectors as well as to a number of systemic measures at national level (e.g. the introduction of a new legal framework, the preparation of recommendations for drinking water suppliers, the increase in state health surveillance).

Interdepartmental cooperation in the field of water source protection has been strengthened, the availability of information for drinking water suppliers and residents in areas with possible water contamination in wells has been increased. Despite the progress made, due to the persistence of pesticides and mainly their metabolites in the environment as well as sporadic occurrences of substances in waters, the monitoring of pesticides proves to be justified.

4. Effective and targeted monitoring of pesticides in drinking water contributes to achieving Global Sustainable Development Goals no. 3 Good Health and Well-Being and no. 6 Clean Water and Sanitation of the Agenda 2030.

5. Slovak Republic has set two national targets in this area.

II. Reduction of the scale of outbreaks and incidents of water-related disease (art. 6, para. 2 (b))

For each target set in this area:

1. Please describe the current target and target date. Please provide information on the background (including the baseline/starting point and reference to existing national and international legislation) and justification for the adoption of the target.

2. Please describe the actions taken (e.g., legal/regulatory, financial/economic, informational/educational and management measures) to reach the target (see also article 6, paragraph 5, of the Protocol).

3. Please assess the progress achieved from the baseline towards meeting the target as well as any challenges encountered.

4. Please describe how the target set under this area contributes to fulfilling global and regional commitments, in particular the 2030 Sustainable Development Agenda.

5. If you have not set a target in this area, please explain why.

National target No. 6 – Reduction of health risks related to bathing water quality – set in accordance with Art. 6, pt. 2 letter k) of the Protocol

1. The target was set due to the absence of statistic data at national level on diseases and health problems related to poor bathing water quality of natural water areas and artificial swimming pools.

2. In relation to the unavailability of statistic data on diseases and health problems related to poor bathing water quality in artificial swimming pools and natural water areas, the Public Health Authority prepared an anonymous online questionnaire entitled "*Questionnaire on occurrence of diseases related to bathing water quality in the Slovak Republic*" (hereinafter referred to as „the questionnaire“). For the period from 27 July 2018 to 8 January 2020 the Public Health Authority’s employees prepared the "*Evaluation of the questionnaire*", which is available on the website of the Public Health Authority on this link: https://www.uvzsr.sk/docs/info/ruzne/Vyhodnotenie_dotazn%C3%ADka_ochorenia_suvise_ace_s_kvalitou%20vod_na_kupanie.pdf.

A total of 222 respondents completed the questionnaire during that period, 21 % of respondents developed health problems after swimming in artificial swimming pools and natural water areas. The most common health problems after bathing were skin problems (mycosis, rashes, red spots on the skin, urticaria), gastrointestinal difficulties (vomiting and diarrhea), various urological and gynecological difficulties (urinary bladder inflammation, inflammation of the urinary tract), auricular (the external ear canal inflammation) and eye problems (conjunctivitis). Up to 95% of the group of respondents who stated that they had visited a doctor reported the need for treatment. About 59% of people who completed the questionnaire did not verify bathing water quality of natural water area with unorganised recreation and without an operator before visiting it. Overall, 40% of respondents reported no deficiencies when bathing. About 36% see shortcomings in the equipment and operation of the swimming pool (e.g. malfunctioning toilets, lack of cleanliness, absence of a lifeguard, etc.) and 24% in bathing water quality (e.g. water smells, has reduced transparency, etc.). 40% of respondents discovered health problems after bathing in swimming pools for which they have visited a doctor. The Public Health Authority of the Slovak Republic in cooperation with Regional Public Health Authorities investigated 6 cases from the questionnaire in which respondents reported a doctor's visit after bathing in four artificial swimming pools and one natural swimming pool; two complaints could be assessed as unfounded, two as partially substantiated, one as substantiated and in one case the substance of the submission could not be assessed. A lecture on the topic "Internet questionnaire on diseases from bathing" was presented on 30 January 2020 at the Seminar of the Public Health Authority of the Slovak Republic.

The investigation of cases from the questionnaire, in which respondents reported a doctor's visit after bathing in artificial swimming pools or natural water areas, continued throughout the 2020 bathing season. A total of 6 cases were recorded, with all respondents reported visiting a doctor after bathing in pools of artificial swimming pools. A total of 6 cases were recorded and all respondents reported visiting a doctor after bathing in artificial swimming pools. The Public Health Authority of the Slovak Republic in cooperation with Regional Public Health Authorities investigated all the cases. Information from one questionnaire submission was used in the performance of state health surveillance carried out by the officers of the locally competent Regional Public Health Authority, which focused on the equipment and operation of the swimming pool, hotel and catering facility, quality of bathing water and compliance with the ordered measures related to COVID-19. Since none of the deficiencies mentioned by the respondent in the questionnaire was not confirmed and during the bathing season there were no deficiencies in the quality of bathing water in the swimming pool, the complaint was assessed as unsubstantiated. The investigation of the remaining complaints

revealed that the three complaints were assessed as unsubstantiated, one as substantiated and in one case the substance of the submission could not be assessed.

During the 2021 bathing season there were also cases from the questionnaire in which respondents reported a visit of the doctor after bathing in pools of artificial swimming pools or in natural water areas. A total of 5 cases were recorded, 4 respondents reported visiting a doctor after bathing in pools of artificial swimming pools and 1 respondent reported a doctor's visit after swimming in a lake. The Public Health Authority of the Slovak Republic in cooperation with selected Regional Public Health Authorities of the Slovak Republic investigated three cases in which respondents reported a doctor's visit after swimming in pools of artificial swimming pools. The investigation of the complaints revealed that two complaints could be assessed as unsubstantiated and one as partially substantiated. As the natural water area in question is not included in the monitoring of bathing water quality carried out by public health authorities during the bathing season, which is usually considered to be the period from 15 June to 15 September, the locally competent Regional Public Health Authority was not requested to investigate the health problems arising after bathing by Public Health Authority.

The Public Health Authority plans to continue with the collection of information and public opinion as the information from the questionnaire can be used to improve the performance of state supervision on bathing water issues, in identifying procedures for reduction of health risks associated with bathing water quality and also in better identification of diseases and epidemics from bathing water thanks to a timely investigation of particular cases in cooperation with the Regional Public Health Authorities.

3. The identification of diseases is made more difficult by obtaining information from the public but also by concealing the fact of visiting the swimming pool when visiting a doctor. Information provided in the questionnaire thus serve for the indicative mapping and evaluation of the situation regarding health problems and the occurrence of diseases related to bathing water quality and visiting of swimming pools in Slovakia. However, as it is an anonymous questionnaire, it is not possible to verify the veracity of the submitted data and take the stance that the diseases reported by respondents in the questionnaire were caused solely by bathing in pools of artificial swimming pools.

Investigation of questionnaire complaints in which respondents reported a doctor's visit after bathing in swimming pools was during the bathing seasons 2020 and 2021 affected by weakened personnel capacities of the Regional Public Health Authorities that were partially transferred to address the issues related to the COVID-19 pandemic.

4. Reducing the health risks associated with bathing water quality significantly contributes to meeting Global Sustainable Development Goal no. 3 Quality of Health and Life of the Agenda 2030.

5. Slovak Republic has set one national target in this area.

III. Access to drinking water (art. 6, para. 2 (c))

For each target set in this area:

1. Please describe the current target and target date. Please provide information on the background (including the baseline/starting point and reference to existing national and international legislation) and justification for the adoption of the target.

2. Please describe the actions taken (e.g., legal/regulatory, financial/economic, informational/educational and management measures) to reach the target (see also article 6, paragraph 5, of the Protocol).

3. Please assess the progress achieved from the baseline towards meeting the target as well as any challenges encountered.
4. Please describe how the target set under this area contributes to fulfilling global and regional commitments, in particular the 2030 Sustainable Development Agenda.
5. If you have not set a target in this area, please explain why.

National target No. 2 – Increasing the supply of safe drinking water from public water supply systems – set in accordance with Art. 6 pt. 2 letter a), b), c), e), f), l), m), n); pt. 5 letter a), b), c), d); Art. 7 pt. 3 and 4 of the Protocol

1. The reason for target setting was interest in the society to increase number of inhabitants supplied with healthy and safe drinking water and to prevent diseases, where drinking water is the factor of transmission; in the time of target setting, 87% of inhabitants in Slovakia were supplied with public water supplies.

2. In fulfilment and attaining of the above-mentioned target European financial sources were used in framework of Operational Program Quality of Environment for the years 2014 – 2020 (under Ministry of Environment), Integrated Regional Operational Program 2014 – 2020 (under Ministry of Agriculture and Rural Development of the Slovak Republic), as well as Operational Program Human Resources (under Ministry of Interior of the Slovak Republic). In case of small villages also from Rural Development Program of the SR 2014 – 2020 (under Ministry of Agriculture and Rural Development of the Slovak Republic). Operational Program Slovakia 2021-2027 (under Ministry of Investments, Regional Development and Informatization of the Slovak Republic) is prepared for adoption for the years 2021 – 2027. At national level, public resources from Environmental fund were used for the construction of public water supplies.

Plan of development of public water supplies for the territory of the Slovak Republic for the years 2016 – 2021 set out construction realization priorities for missing water economy infrastructure. Plan proposes realization of construction of public water-supplies in municipalities without water supply, increase number of inhabitants supplied from public water supplies and to secure trouble free supply of inhabitants with healthy and safe drinking water without negative impacts on environment and health. In the sense of this material, the targets are gradually fulfilled, new public water supplies are built and those in the process of construction are being finished.

For the future period updated Plan of development of public water supplies for the territory of the Slovak Republic for the years 2021 – 2027 sets out construction of public water-supplies in municipalities without water supply with the aim to increase the number of inhabitants supplied with public water-supplies and in this way to secure trouble free supply of inhabitants with healthy and safe drinking water.

Government of the SR adopted resolution no. 521 from 23 October 2019 on the document Financing of development of public water supply (with the emphasis on municipalities up to 2,000 inhabitants) and public sewerage systems (with the emphasis on municipalities in agglomerations with up to 2,000 equivalent inhabitants) in the Slovak Republic for the years 2020 – 2030, based on which every year financial resources will be allocated in the sum of 50.0 million EUR for construction of public water supplies and public sewerage systems from Environmental fund. Based on this material, individual calls from Environmental fund were accommodated, with the goal to support mainly construction of public water supplies, which are in the process of construction for a long time, with the aim to finish them and start to operate them.

3. Fulfilment of the above-mentioned national target is dependent on financial resources from individual operational programs. Progress attained in fulfilment of the target is shown in the tables 1 and 2.

Tab. 1: Development of supply of inhabitants with drinking water in the SR for the years 2018 – 2020.

Indicator	2018	2019	2020*
Total number of inhabitants [thousands]	5 445,08	5 452,26	5 460,14
Number of inhabitants supplied with the water from public water supplies [thousands]	4 859,93	4 882,5	4 903,61
Proportion of inhabitants supplied with the water from public water supplies [%]	89,25	89,55	89,81
Specific consumption of water for households [l/inhab./day]	78,0	78,4	*
Capacity of water resources [l/s]	33 714,4	33 659,9	*
Length of water network [km]	30 329,80	30 757,9	30 987,78

* for the year 2020, not all data is processed yet

Tab. 2: Connection to public water-supplies in individual regions of the SR.

Region	Proportion of inhabitants connected to public watersupplies from the total number of inhabitants [%]		
	2018	2019	2020
Bratislava region	98,35	98,53	98,61
Tnava region	89,70	90,08	90,44
Trenčín region	91,56	91,69	91,90
Nitra region	91,94	92,29	92,56
Žilina region	91,44	91,83	92,07
Banská Bystrica region	87,64	87,68	87,66
Prešov region	81,48	81,92	82,11
Košice region	84,95	85,26	85,85

In the sense of the table 3, the highest percentage of inhabitants connected to public water supply is in Bratislava region, the smallest number of inhabitants connected to public water-supply is in Prešov region. In comparison with the year 2017, the number of inhabitants supplied with drinking water has raised by 67 484, which is an increase by 0,87 %. Number of municipalities with public water supply has raised from 2 413 (83,49 %) in 2017 to 2 428 municipalities in 2019 (84,01 %). Mentioned data show gradual improvement of situation in supply of inhabitants with drinking water from public water supply.

Negative trend is the decrease of specific consumption of drinking water for households - to less than 80 liters for inhabitant per day, as well as the loss of water in the pipe network (23,9 % in the year 2019), which needs to be reduced to acceptable level corresponding with European trends.

Tab. 3 Increasing the supply of safe drinking water from public water supply systems.

Percentage of population with access to drinking water	Basic value (2005)	Value reported in the previous reporting cycle (2011)	Value reported in the previous reporting cycle (2014)	Value reported in the previous reporting cycle (2017)	Current value in (2020)
of total	85.3% (4.5941 million of inhabitants)	86.9% (4.7238 million of inhabitants)	87.7% (4.753 million of inhabitants)	88.9% (4.836 million of inhabitants)	89.8% (4.9063 million of inhabitants)
municipal				There is not a separate statistics for the rural areas and towns.	

4. Increase of the number of inhabitants supplied with drinking water from public water supplies fulfils global targets of Global Sustainable Development Goals of the Agenda 2030, mainly the target no. 6 Clean Water and Sanitation, especially partial objective no. 6.1 focused on just access to drinking water for all.

At the Slovak level, fulfilment of the target contributes towards securing of trouble-free supply of inhabitants with healthy and safe drinking water without negative impacts on environment and health.

5. Slovak Republic has set one national target in this area.

IV. Access to sanitation (art. 6, para. 2 (d))

For each target set in this area:

1. Please describe the current target and target date. Please provide information on the background (including the baseline/starting point and reference to existing national and international legislation) and justification for the adoption of the target.
2. Please describe the actions taken (e.g., legal/regulatory, financial/economic, informational/educational and management measures) to reach the target (see also article 6, paragraph 5 of the Protocol).
3. Please assess the progress achieved from the baseline towards meeting the target as well as any challenges encountered.
4. Please describe how the target set under this area contributes to fulfilling global and regional commitments, in particular the 2030 Sustainable Development Agenda.
5. If you have not set a target in this area, please explain why.

National target no. 5: Improvement of sewerage, wastewater treatment and discharge of urban wastewater – set in accordance with Art. 6, pt. 2 letter d), e), f), g), h), i); pt. 5 letter a), b), c); Art. 7 pt. 3 and 4 of the Protocol

1. The aim is the social interest of increasing the number of population connected to public sewerage, meeting the needs of inhabitants and protecting the environment. Sewerage and wastewater treatment is essential for water protection and its sustainable management.

Discharges of untreated or insufficiently purified wastewater negatively affect the quality and condition of the waters under the source of pollution. Therefore, one of the most significant measures targeted at improving such a situation is to ensure the sewerage,

treatment and discharge of urban wastewater in accordance with the requirements of *Directive 91/271/EEC* concerning urban wastewater treatment.

2. For fulfilling and achieving the above-mentioned goal European funding was used under *the Operational Program Quality of the Environment 2014-2020* (under the Ministry of Environment of the Slovak Republic), *the Integrated Regional Operational Program 2014 – 2020* (under the Ministry of Agriculture and Rural Development of the Slovak Republic), as well as *the Operational Program Human Resources* (under the Ministry of Interior of the Slovak Republic). In case of small municipalities also from *Rural Development Program for Slovakia 2014-2020* (under the Ministry of Agriculture and Rural Development of the Slovak Republic). At the national level, public resources from *the Environmental Fund* were used for the construction of public sewerage systems, as well as funds of towns and villages, private water companies and loans. *The Public Sewer System Development Plan in Slovakia for 2016-2021* is the basic framework document for guiding the preparation, planning and implementation of municipal sewerage networks and wastewater treatment plants. It documents the current state of disposal and treatment of urban wastewater according to sewerage systems, positive and negative aspects in the field of public sewerage systems concerning sewerage and wastewater treatment, the level of compliance with the criteria set in *Directive 91/271/EEC* and national legislation. The Government of the Slovak Republic adopted Resolution no. 521 on 23 October 2019 related to the document *the Financing of the development of public water supply (with an emphasis on municipalities with up to 2,000 inhabitants) and public sewerage systems (with an emphasis on municipalities in agglomerations with up to 2,000 equivalent inhabitants) in the Slovak Republic for the years 2020 – 2030*, on the basis of which funds of 50.0 million EUR will be allocated every year for the construction of public water supply and public sewerage systems from the Environment Fund. Based on this material, individual calls of the Environmental Fund were modified, which aims mainly to support the construction of public sewerage systems, which construction has started and is unfinished for over a long period with the objective of their completion and launch. For the upcoming period, *the Public Sewer System Development Plan in Slovakia for 2021-2027* presume the construction of public sewerage systems in municipalities without sewerage systems in order to increase the number of population connected to public sewerage and thus to ensure wastewater treatment in accordance with the *Directive 91/271/EEC* and national legislation on wastewater treatment. For the years 2021 – 2027, *the Operational Program Slovakia 2021 – 2027* (under the Ministry of Investments, Regional Development and Informatization of the Slovak Republic) is being prepared for approval.

3. In municipalities where public sewerage is not built or finished, measures for the protection of groundwater and surface water are implemented and these are the obligation of the wastewater producer that should accumulate wastewater in the cesspit and ensure its disposal by transport to wastewater treatment plant and to submit wastewater disposal documents from maximum last two years when requested by municipality or state water authority. Wastewater disposal may only be carried out by a public sewerage operator, a municipality or a person authorised under a special regulation for the relevant wastewater treatment plant. The municipality or body of the state water administration may request the submission of documents on wastewater disposal pursuant to *Act no. 364/2004 Coll. On Waters*, § 35 para. 4, effective from 15 March 2018, at the earliest from 15 September 2020. By 15 September 2020, it may request the production of documents related to import of wastewater carried out after 15 September 2018. In the light of the above-mentioned operational programs, further projects have been prepared to implement the connection of the inhabitants to public sewerage system, which resulted in an increase in the connection of the number of inhabitants to the public sewerage system as in the table 4 and table 5.

Tab. 4: Development of the situation in sewerage and treatment of municipal wastewater in the Slovak Republic for the years 2018 – 2020.

Indicator:	2018	2019	2020*
Total number of inhabitants [thousands]	5 445,08	5 452,26	5 460,14
Number of inhabitants connected to public sewerage system [thousands]	3 724,40	3 769,40	3 805,98
Number of inhabitants connected to public sewerage system [%]	68,40	69,13	69,70
Number of inhabitants connected to public sewerage system and water treatment plant [thousands]	3 699,15	3 746,42	3 783,07
Number of inhabitants connected to public sewerage system and water treatment plant [%]	67,94	68,71	69,29
Amount of wastewater discharged to watercourses [mil.m ³]	414,82	426,7	*
- of which is purified wastewater [mil.m ³]	409,24	422,	*
- of which is purified wastewater [%]	98,65	99,06	*
Length of sewerage network [km]	14 415	14 604	14 857
Number of wastewater treatment plants	705	713	*

* not all data processed for the year 2020

Tab. 5: Proportion of inhabitants connected to public sewerage system with wastewater treatment plant from the total population in particular regions of the Slovak Republic.

Region	Proportion of inhabitants connected to public sewerage system with wastewater treatment plant from the total population [%]		
	2018	2019	2020
Bratislava region	91,17	91,64	91,78
Trnava region	68,84	69,86	70,79
Trenčín region	66,62	66,29	68,38
Nitra region	54,95	56,68	56,93
Žilina region	70,08	71,37	72,02
Banská Bystrica region	59,82	60,09	60,23
Prešov region	68,61	69,44	69,41*
Košice region	64,26	64,81	65,15

* in the Prešov region, the percentage of connected inhabitants in the wastewater system is a few hundredths smaller than in 2019, probably due to the inaccuracy of the deduction in 2019

In the Slovak Republic, the number of inhabitants living in houses connected to public sewerage system as well as the volume of purified wastewater (Table. 4) is gradually

increasing. As of 31 December 2020, the proportion of inhabitants connected to the public sewerage system was 69.70% of the total population.

Trenčín region, Nitra region, Banská Bystrica region and Košice region lag behind the nationwide average in the proportion of inhabitants out of the total population connected to public sewerage system with a wastewater treatment plant in regions of the Slovak Republic. **As of 31 December 2020, at the district level, the situation is most unfavourable in the districts of Gelnica, Trebišov and Komárno, where the proportion of the population connected to the public sewerage system is 34 - 40 %. The proportion of inhabitants connected to the public sewerage system below 50 % is in the districts of Nové Zámky, Levice, Turčianske Teplice, Krupina, Poltár, Revúca, Rimavská Sobota, Veľký Krtíš, Žarnovica, Košice - okolie district and Sobrance. The achievement of the mentioned national objective depends mainly on the available funds.**

4. The increase **in the population** connected to public sewerage system and water treatment system fulfills Global Sustainable Development Goal of the Agenda 2030, in particular goal no. 6 Clean Water and Sanitation and especially partial objectives 6.3, 6.5 and 6.6. The implementation of the *Directive 91/271/EEC* concerning the treatment of urban wastewater is part of the commitment of the Slovak Republic as an EU Member State – the implementation of the EU's policy in the field of environmental protection and management, it also contributes to the objectives of the *UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes* and regional *Convention on Cooperation for the Protection and Sustainable Use of the Danube River* and it is also an essential part of bilateral cooperation on transboundary waters.

5. Slovak Republic has set one national target in this area.

V. Levels of performance of collective systems and other systems for water supply (art. 6, para. 2 (e))

For each target set in this area:

1. Please describe the current target and target date. Please provide information on the background (including the baseline/starting point and reference to existing national and international legislation) and justification for the adoption of the target.
2. Please describe the actions taken (e.g., legal/regulatory, financial/economic, informational/educational and management measures) to reach the target (see also article 6, paragraph 5 of the Protocol).
3. Please assess the progress achieved from the baseline towards meeting the target as well as any challenges encountered.
4. Please describe how the target set under this area contributes to fulfilling global and regional commitments, in particular the 2030 Sustainable Development Agenda.
5. If you have not set a target in this area, please explain why.

National target No. 2 – Increasing the supply of safe drinking water from public water supply systems – set in accordance with Art. 6 pt. 2 letter a), b), c), e), f), l), m), n); pt. 5 letter a), b), c), d); Art. 7 pt. 3 and 4 of the Protocol

1. The reason for target setting was interest in the society to increase number of inhabitants supplied with healthy and safe drinking water and to prevent diseases, where drinking water is the factor of transmission; in the time of target setting, 87% of inhabitants in Slovakia were supplied with public water supplies.

2. In fulfilment and attaining of the above-mentioned target European financial sources were used in framework of Operational Program Quality of Environment for the years 2014 – 2020 (under Ministry of Environment), Integrated Regional Operational Program 2014 – 2020 (under Ministry of Agriculture and Rural Development of the Slovak Republic), as well as Operational Program Human Resources (under Ministry of Interior of the Slovak Republic). In case of small villages also from Rural Development Program of the SR 2014 – 2020 (under Ministry of Agriculture and Rural Development of the Slovak Republic). Operational Program Slovakia 2021-2027 (under Ministry of Investments, Regional Development and Informatization of the Slovak Republic) is prepared for adoption for the years 2021 – 2027. At national level, public resources from Environmental fund were used for the construction of public water supplies.

Plan of development of public water supplies for the territory of the Slovak Republic for the years 2016 – 2021 set out construction realization priorities for missing water economy infrastructure. Plan proposes realization of construction of public water-supplies in municipalities without water supply, increase number of inhabitants supplied from public water supplies and to secure trouble free supply of inhabitants with healthy and safe drinking water without negative impacts on environment and health. In the sense of this material, the targets are gradually fulfilled, new public water supplies are built and those in the process of construction are being finished. For the future period updated Plan of development of public water supplies for the territory of the Slovak Republic for the years 2021 – 2027 sets out construction of public water-supplies in municipalities without water supply with the aim to increase the number of inhabitants supplied with public water-supplies and in this way to secure trouble free supply of inhabitants with healthy and safe drinking water.

Government of the SR adopted resolution no. 521 from 23 October 2019 on the document Financing of development of public water supply (with the emphasis on municipalities up to 2,000 inhabitants) and public sewerage systems (with the emphasis on municipalities in agglomerations with up to 2,000 equivalent inhabitants) in the Slovak Republic for the years 2020 – 2030, based on which every year financial resources will be allocated in the sum of 50.0 million EUR for construction of public water supplies and public sewerage systems from Environmental fund. Based on this material, individual calls from Environmental fund were accommodated, with the goal to support mainly construction of public water supplies, which are in the process of construction for a long time, with the aim to finish them and start to operate them.

3. Fulfilment of the above-mentioned national target is dependent on financial resources from individual operational programs. Progress attained in fulfilment of the target is shown in the tables 1 and 2.

Tab. 1: Development of supply of inhabitants with drinking water in the SR for the years 2018 – 2020.

Indicator	2018	2019	2020*
Total number of inhabitants [thousands]	5 445,08	5 452,26	5 460,14
Number of inhabitants supplied with the water from public water supplies [thousands]	4 859,93	4 882,5	4 903,61
Proportion of inhabitants supplied with the water from public water supplies [%]	89,25	89,55	89,81
Specific consumption of water for households [l/inhab./day]	78,0	78,4	*
Capacity of water resources [l/s]	33 714,4	33 659,9	*
Length of water network [km]	30 329,80	30 757,9	30 987,78

* for the year 2020, not all data is processed yet

Tab. 2: Connection to public water-supplies in individual regions of the SR.

Region	Proportion of inhabitants connected to public watersupplies from the total number of inhabitants [%]		
	2018	2019	2020
Bratislava region	98,35	98,53	98,61
Trnava region	89,70	90,08	90,44
Trenčín region	91,56	91,69	91,90
Nitra region	91,94	92,29	92,56
Žilina region	91,44	91,83	92,07
Banská Bystrica region	87,64	87,68	87,66
Prešov region	81,48	81,92	82,11
Košice region	84,95	85,26	85,85

In the sense of the table 3, the highest percentage of inhabitants connected to public water supply is in Bratislava region, the smallest number of inhabitants connected to public water-supply is in Prešov region. In comparison with the year 2017, the number of inhabitants supplied with drinking water has raised by 67 484, which is an increase by 0,87 %. Number of municipalities with public water supply has raised from 2 413 (83,49 %) in 2017 to 2 428 municipalities in 2019 (84,01 %). Mentioned data show gradual improvement of situation in supply of inhabitants with drinking water from public water supply.

Negative trend is the decrease of specific consumption of drinking water for households - to less than 80 liters for inhabitant per day, as well as the loss of water in the pipe network (23,9 % in the year 2019), which needs to be reduced to acceptable level corresponding with European trends.

4. Increase of the number of inhabitants supplied with drinking water from public water supplies fulfils global targets of Global Sustainable Development Goals of the Agenda 2030, mainly the target no. 6 Clean Water and Sanitation, especially partial objective no. 6.1 focused on just access to drinking water for all.

At the Slovak level, fulfilment of the target contributes towards securing of trouble-free supply of inhabitants with healthy and safe drinking water without negative impacts on environment and health.

5. Slovak Republic has set one national target in this area.

VI. Levels of performance of collective systems and other systems for sanitation (art. 6, para. 2 (e))

For each target set in this area:

1. Please describe the current target and target date. Please provide information on the background (including the baseline/starting point and reference to existing national and international legislation) and justification for the adoption of the target.

2. Please describe the actions taken (e.g., legal/regulatory, financial/economic, informational/educational and management measures) to reach the target (see also article 6, paragraph 5, of the Protocol).
3. Please assess the progress achieved from the baseline towards meeting the target as well as any challenges encountered.
4. Please describe how the target set under this area contributes to fulfilling global and regional commitments, in particular the 2030 Sustainable Development Agenda.
5. If you have not set a target in this area, please explain why.

National target no. 5: Improvement of sewerage, wastewater treatment and discharge of urban wastewater – set in accordance with Art. 6, pt. 2 letter d), e), f), g), h), i); pt. 5 letter a), b), c); Art. 7 pt. 3 and 4 of the Protocol

1. The aim is the social interest of increasing the number of population connected to public sewerage, meeting the needs of inhabitants and protecting the environment. Sewerage and wastewater treatment is essential for water protection and its sustainable management.

Discharges of untreated or insufficiently purified wastewater negatively affect the quality and condition of the waters under the source of pollution. Therefore, one of the most significant measures targeted at improving such a situation is to ensure the sewerage, treatment and discharge of urban wastewater in accordance with the requirements of *Directive 91/271/EEC* concerning urban wastewater treatment.

2. For fulfilling and achieving the above-mentioned goal European funding was used under *the Operational Program Quality of the Environment 2014-2020* (under the Ministry of Environment of the Slovak Republic), *the Integrated Regional Operational Program 2014 – 2020* (under the Ministry of Agriculture and Rural Development of the Slovak Republic), as well as *the Operational Program Human Resources* (under the Ministry of Interior of the Slovak Republic). In case of small municipalities also from *Rural Development Program for Slovakia 2014-2020* (under the Ministry of Agriculture and Rural Development of the Slovak Republic). At the national level, public resources from *the Environmental Fund* were used for the construction of public sewerage systems, as well as funds of towns and villages, private water companies and loans. *The Public Sewer System Development Plan in Slovakia for 2016-2021* is the basic framework document for guiding the preparation, planning and implementation of municipal sewerage networks and wastewater treatment plants. It documents the current state of disposal and treatment of urban wastewater according to sewerage systems, positive and negative aspects in the field of public sewerage systems concerning sewerage and wastewater treatment, the level of compliance with the criteria set in *Directive 91/271/EEC* and national legislation. The Government of the Slovak Republic adopted Resolution no. 521 on 23 October 2019 related to the document *the Financing of the development of public water supply (with an emphasis on municipalities with up to 2,000 inhabitants) and public sewerage systems (with an emphasis on municipalities in agglomerations with up to 2,000 equivalent inhabitants) in the Slovak Republic for the years 2020 – 2030*, on the basis of which funds of 50.0 million EUR will be allocated every year for the construction of public water supply and public sewerage systems from the Environment Fund. Based on this material, individual calls of the Environmental Fund were modified, which aims mainly to support the construction of public sewerage systems, which construction has started and is unfinished for over a long period with the objective of their completion and launch. For the upcoming period, *the Public Sewer System Development Plan in Slovakia for 2021-2027* presume the construction of public sewerage systems in municipalities without sewerage systems in order to increase the number of population connected to public sewerage and thus to ensure wastewater treatment in accordance with the

Directive 91/271/EEC and national legislation on wastewater treatment. For the years 2021 – 2027, the Operational Program Slovakia 2021 – 2027 (under the Ministry of Investments, Regional Development and Informatization of the Slovak Republic) is being prepared for approval.

3. In municipalities where public sewerage is not built or finished, measures for the protection of groundwater and surface water are implemented and these are the obligation of the wastewater producer that should accumulate wastewater in the cesspit and ensure its disposal by transport to wastewater treatment plant and to submit wastewater disposal documents from maximum last two years when requested by municipality or state water authority. Wastewater disposal may only be carried out by a public sewerage operator, a municipality or a person authorised under a special regulation for the relevant wastewater treatment plant. The municipality or body of the state water administration may request the submission of documents on wastewater disposal pursuant to Act no. 364/2004 Coll. On Waters, § 35 para. 4, effective from 15 March 2018, at the earliest from 15 September 2020. By 15 September 2020, it may request the production of documents related to import of wastewater carried out after 15 September 2018. In the light of the above-mentioned operational programs, further projects have been prepared to implement the connection of the inhabitants to public sewerage system, which resulted in an increase in the connection of the number of inhabitants to the public sewerage system as in the table 4 and table 5.

Tab. 4: Development of the situation in sewerage and treatment of municipal wastewater in the Slovak Republic for the years 2018 – 2020.

Indicator:	2018	2019	2020*
Total number of inhabitants [thousands]	5 445,08	5 452,26	5 460,14
Number of inhabitants connected to public sewerage system [thousands]	3 724,40	3 769,40	3 805,98
Number of inhabitants connected to public sewerage system [%]	68,40	69,13	69,70
Number of inhabitants connected to public sewerage system and water treatment plant [thousands]	3 699,15	3 746,42	3 783,07
Number of inhabitants connected to public sewerage system and water treatment plant [%]	67,94	68,71	69,29
Amount of wastewater discharged to watercourses [mil.m ³]	414,82	426,7	*
- of which is purified wastewater [mil.m ³]	409,24	422,	*
- of which is purified wastewater [%]	98,65	99,06	
Length of sewerage network [km]	14 415	14 604	14 857
Number of wastewater treatment plants	705	713	*

* not all data processed for the year 2020

Tab. 5: Proportion of inhabitants connected to public sewerage system with wastewater treatment plant from the total population in particular regions of the Slovak Republic.

Region	Proportion of inhabitants connected to public sewerage system with wastewater treatment plant from the total population [%]		
	2018	2019	2020
Bratislava region	91,17	91,64	91,78
Trnava region	68,84	69,86	70,79
Trenčín region	66,62	66,29	68,38
Nitra region	54,95	56,68	56,93
Žilina region	70,08	71,37	72,02
Banská Bystrica region	59,82	60,09	60,23
Prešov region	68,61	69,44	69,41*
Košice region	64,26	64,81	65,15

* in the Prešov region, the percentage of connected inhabitants in the wastewater system is a few hundredths smaller than in 2019, probably due to the inaccuracy of the deduction in 2019

In the Slovak Republic, the number of inhabitants living in houses connected to public sewerage system as well as the volume of purified wastewater (Table. 4) is gradually increasing. As of 31 December 2020, the proportion of inhabitants connected to the public sewerage system was 69.70% of the total population.

Trenčín region, Nitra region, Banská Bystrica region and Košice region lag behind the nationwide average in the proportion of inhabitants out of the total population connected to public sewerage system with a wastewater treatment plant in regions of the Slovak Republic. **As of 31 December 2020, at the district level, the situation is most unfavourable in the districts of Gelnica, Trebišov and Komárno, where the proportion of the population connected to the public sewerage system is 34 - 40 %. The proportion of inhabitants connected to the public sewerage system below 50 % is in the districts of Nové Zámky, Levice, Turčianske Teplice, Krupina, Poltár, Revúca, Rimavská Sobota, Veľký Krtíš, Žarnovica, Košice - okolie district and Sobrance. The achievement of the mentioned national objective depends mainly on the available funds.**

4. The increase **in the population** connected to public sewerage system and water treatment system fulfills Global Sustainable Development Goal of the Agenda 2030, in particular goal no. 6 Clean Water and Sanitation and especially partial objectives 6.3, 6.5 and 6.6. The implementation of the *Directive 91/271/EEC* concerning the treatment of urban wastewater is part of the commitment of the Slovak Republic as an EU Member State – the implementation of the EU's policy in the field of environmental protection and management, it also contributes to the objectives of the *UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes* and regional *Convention on Cooperation for the Protection and Sustainable Use of the Danube River* and it is also an essential part of bilateral cooperation on transboundary waters.

5. Slovak Republic has set one national target in this area.

VII. Application of recognized good practices to the management of water supply (art. 6, para. 2 (f))

For each target set in this area:

1. Please describe the current target and target date. Please provide information on the background (including the baseline/starting point and reference to existing national and international legislation) and justification for the adoption of the target.
2. Please describe the actions taken (e.g., legal/regulatory, financial/economic, informational/educational and management measures) to reach the target (see also article 6, paragraph 5, of the Protocol).
3. Please assess the progress achieved from the baseline towards meeting the target as well as any challenges encountered.
4. Please describe how the target set under this area contributes to fulfilling global and regional commitments, in particular the 2030 Sustainable Development Agenda.
5. If you have not set a target in this area, please explain why.

National target No. 2 – Increasing the supply of safe drinking water from public water supply systems – set in accordance with Art. 6 pt. 2 letter a), b), c), e), f), l), m), n); pt. 5 letter a), b), c), d); Art. 7 pt. 3 and 4 of the Protocol

Increasing % of the population supplied with safe drinking water from public water supply - set in accordance with Art. 6 (2) (a | a), b), c), e), f), l), m), n); point 5 (a) a), b), c), d); Art. 7 points 3 and 4 of the Protocol. The target No. 2 is set at local level. The deadline for achieving the target is 2020.

Responsibility for the implementation of the target is water companies and municipalities, Ministry of Environment of the Slovak Republic within its scope (legislative aspects , implementation of EU directives, conceptual and planning documents, financial support for the implementation of projects within the financial resort options). - Increasing the percentage of inhabitants supplied with healthy and safe drinking water by the public water system

- Improving quality and health and safety of water
- Monitoring pesticides in water

Legislative measures:

- No. 355/2007 Coll. on the Protection, Promotion and Development of Public Health as amended
- No. 442/2002 Coll. on Public Water Systems and Sewage Systems as amended
- Regulation of the Ministry of Health of the Slovak Republic No. 242/2017 Coll. laying down the Details on Drinking Water Quality, Monitoring Programme and Risk Management in Drinking Water Supply.
- Measures stated in the Programme of Measures of the Water Plan of Slovakia related to ensuring the quality and quantity of drinking water

1. The reason for target setting was interest in the society to increase number of inhabitants supplied with healthy and safe drinking water and to prevent diseases, where drinking water is the factor of transmission; in the time of target setting, 87% of inhabitants in Slovakia were supplied with public water supplies.

2. In fulfilment and attaining of the above-mentioned target European financial sources were used in framework of Operational Program Quality of Environment for the years 2014 – 2020 (under Ministry of Environment), Integrated Regional Operational Program 2014 – 2020 (under Ministry of Agriculture and Rural Development of the Slovak Republic), as well as

Operational Program Human Resources (under Ministry of Interior of the Slovak Republic). In case of small villages also from Rural Development Program of the SR 2014 – 2020 (under Ministry of Agriculture and Rural Development of the Slovak Republic). Operational Program Slovakia 2021-2027 (under Ministry of Investments, Regional Development and Informatization of the Slovak Republic) is prepared for adoption for the years 2021 – 2027. At national level, public resources from Environmental fund were used for the construction of public water supplies.

Plan of development of public water supplies for the territory of the Slovak Republic for the years 2016 – 2021 set out construction realization priorities for missing water economy infrastructure. Plan proposes realization of construction of public water-supplies in municipalities without water supply, increase number of inhabitants supplied from public water supplies and to secure trouble free supply of inhabitants with healthy and safe drinking water without negative impacts on environment and health. In the sense of this material, the targets are gradually fulfilled, new public water supplies are built and those in the process of construction are being finished.

For the future period updated Plan of development of public water supplies for the territory of the Slovak Republic for the years 2021 – 2027 sets out construction of public water-supplies in municipalities without water supply with the aim to increase the number of inhabitants supplied with public water-supplies and in this way to secure trouble free supply of inhabitants with healthy and safe drinking water.

Government of the SR adopted resolution no. 521 from 23 October 2019 on the document Financing of development of public water supply (with the emphasis on municipalities up to 2,000 inhabitants) and public sewerage systems (with the emphasis on municipalities in agglomerations with up to 2,000 equivalent inhabitants) in the Slovak Republic for the years 2020 – 2030, based on which every year financial resources will be allocated in the sum of 50.0 million EUR for construction of public water supplies and public sewerage systems from Environmental fund. Based on this material, individual calls from Environmental fund were accommodated, with the goal to support mainly construction of public water supplies, which are in the process of construction for a long time, with the aim to finish them and start to operate them.

3. Fulfilment of the above-mentioned national target is dependent on financial resources from individual operational programs. Progress attained in fulfilment of the target is shown in the tables 1 and 2.

Tab. 1: Development of supply of inhabitants with drinking water in the SR for the years 2018 – 2020.

Indicator	2018	2019	2020*
Total number of inhabitants [thousands]	5 445,08	5 452,26	5 460,14
Number of inhabitants supplied with the water from public water supplies [thousands]	4 859,93	4 882,5	4 903,61
Proportion of inhabitants supplied with the water from public water supplies [%]	89,25	89,55	89,81
Specific consumption of water for households [l/inhab./day]	78,0	78,4	*
Capacity of water resources [l/s]	33 714,4	33 659,9	*
Length of water network [km]	30 329,80	30 757,9	30 987,78

* for the year 2020, not all data is processed yet

Tab. 2: Connection to public water-supplies in individual regions of the SR.

Region	Proportion of inhabitants connected to public watersupplies from the total number of inhabitants [%]		
	2018	2019	2020
Bratislava region	98,35	98,53	98,61
Trnava region	89,70	90,08	90,44
Trenčín region	91,56	91,69	91,90
Nitra region	91,94	92,29	92,56
Žilina region	91,44	91,83	92,07
Banská Bystrica region	87,64	87,68	87,66
Prešov region	81,48	81,92	82,11
Košice region	84,95	85,26	85,85

In the sense of the table 3, the highest percentage of inhabitants connected to public water supply is in Bratislava region, the smallest number of inhabitants connected to public water-supply is in Prešov region. In comparison with the year 2017, the number of inhabitants supplied with drinking water has raised by 67 484, which is an increase by 0,87 %. Number of municipalities with public water supply has raised from 2 413 (83,49 %) in 2017 to 2 428 municipalities in 2019 (84,01 %). Mentioned data show gradual improvement of situation in supply of inhabitants with drinking water from public water supply.

Negative trend is the decrease of specific consumption of drinking water for households - to less than 80 liters for inhabitant per day, as well as the loss of water in the pipe network (23,9 % in the year 2019), which needs to be reduced to acceptable level corresponding with European trends.

4. Increase of the number of inhabitants supplied with drinking water from public water supplies fulfils global targets of Global Sustainable Development Goals of the Agenda 2030, mainly the target no. 6 Clean Water and Sanitation, especially partial objective no. 6.1 focused on just access to drinking water for all.

At the Slovak level, fulfilment of the target contributes towards securing of trouble-free supply of inhabitants with healthy and safe drinking water without negative impacts on environment and health.

5. Slovak Republic has set one national target in this area.

VIII. Application of recognized good practice to the management of sanitation (art. 6, para. 2 (f))

For each target set in this area:

1. Please describe the current target and target date. Please provide information on the background (including the baseline/starting point and reference to existing national and international legislation) and justification for the adoption of the target.

2. Please describe the actions taken (e.g., legal/regulatory, financial/economic, informational/educational and management measures) to reach the target (see also article 6, paragraph 5, of the Protocol).
3. Please assess the progress achieved from the baseline towards meeting the target as well as any challenges encountered.
4. Please describe how the target set under this area contributes to fulfilling global and regional commitments, in particular the 2030 Sustainable Development Agenda.
5. If you have not set a target in this area, please explain why.

National target no. 5: Improvement of sewerage, wastewater treatment and discharge of urban wastewater – set in accordance with Art. 6, pt. 2 letter d), e), f), g), h), i); pt. 5 letter a), b), c); Art. 7 pt. 3 and 4 of the Protocol

1. National targets:

- improved situation in the sector of waste water collection and treatment
- implementation of Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy
- implementation of the Council Directive 91/271/EEC of 21 May 1991 concerning urban waste water treatment
- nutrient reduction in harmony with requirements of Council Directive 91/271/EEC concerning urban waste water treatment

2. Application of the Standards for Water Quality in Public Waterworks and Public Sewerage

- using of techniques which lead to achievement of targets set up in Council Directive 91/271/EEC concerning urban waste water treatment
- Water Management Plan of Slovakia include own Programme of Measures, in which are presented measures focused on protection of water quality and quantity

3. Please assess the progress achieved from the baseline towards meeting the target as well as any challenges encountered.

Tab. 6. Progress achieved in sanitation (years 2005 - 2020).

	Basic value (2005)	Year 2011	Year 2014	Current value (2020)
Total percentage of population with access to improved sanitation	Number of inhabitants connected to public sewerage system: 3,0755 mil. (57.09%) of that in houses connected to sewerage system with WWTP: 2,9714 mil. (55.16%)	Number of inhabitants connected to public sewerage system: 3,3473 mil. (61.58%) of that in houses connected to sewerage system with WWTP: 3,26 mil. (59.98%)	Number of inhabitants connected to public sewerage system: 3,5061 mil. (64.67%) of that in houses connected to sewerage system with WWTP: 3,4531 mil. (63.69%)	Number of inhabitants connected to public sewerage system: 3,8051 mil. (69.69%) of that in houses connected to sewerage system with WWTP: 3,7823 mil. (69.27%)
Number of waste water treatment plants	468	616	692	724
Length of sewerage networks (km)	7 690	11 211	12 565	14 858,40

4. Document *the Vision and Strategy of Development of Slovakia until 2030* is a basic implementation document for national priorities fulfilment of *the Agenda 2030 (UN)* in the Slovak Republic. At the same time it fulfils the role of the *National Strategy of Regional Development of the Slovak Republic* in sense of law No. 539/2008 Coll. concerning regional development. There are three integrated development programmes which contain definitions of priorities and development objectives of Slovakia and identify measures, including:

- increasing of number of municipalities connected to public sewerage in less developed regions; to extend and to increase hydraulic capacity of sewerage in agglomerations larger than 2,000 PE

- support of sewerage network construction and waste water treatment plants in agglomerations into the 2,000 PE which are located in protected areas of water resources.
- Document *the Development plan of public waterworks and public sewerages for the Slovak Republic for years 2021–2027* defines development objectives of public sewerages until year 2027. Implementation of these objectives supports fulfilment of objectives of the *Strategy of environmental policy of the Slovak Republic until year 2030*. That means: agglomerations with more than 2,000 PE will manage sewerage and treatment of waste water at a 100% until year 2030; agglomerations with lower number of PE at a 50%.
- Document *the Concept of Water Policy of the Slovak Republic for years 2021–2030, with perspective on 2050* is in the process of finalisation.
- Concerning sewerage network there are defined problems which have to be solved soon (legislative, conception, methodics). There are: water handling from surface run off, storm water overflows, regulation of run off from urban area, re-use of treated waste water, elimination of risk substances and substances of particular concern from waste water, climate change impact, enlarging and renovation of sewerage infrastructure, energy demandingness and climatic neutrality of waste water treatment plants (WWTPs), sludge handling from WWTPs etc.

Approval of this document is planned during year 2022.

Another conception and policy documents of the Slovak Republic:

- *Action plan for environment and health od inhabitants of the Slovak Republic (NEHAP V),*
- *Water Management Plan of the Slovak Republic: Administrative Danube River Basin Management Plan and Administrative Wisla River Basin Management Plan and its Programme of Measures,*
- *National Programme of the Slovak Republic for administration of EU Directive 91/271/EEC on urban waste water treatment as amended by the act of the Commission 98/15/EC and Regulation of the European Parliament and Council 1882/2003/EC*
- *Operational Programme Quality of Environment*
- *More green Slovakia - Strategy of environmental policy of the Slovak Republic until year 2030 (Envirostrategy 2030),*
- *H2ODNOTA JE VODA* (translation: water is value) – Action plan for management of impact of drought and water scarcity,
- *the Convention on the protection and use of transboundary watercourses and international lakes,*
- *Protocol on Water and Health to the Convention on the protection and use of transboundary watercourses and international lakes,*
- *Convention on cooperation for the protection and sustainable use of the Danube river*
- *Common declaration of the water management ministers of the Visegrad Group and Bulgaria and Romania.*

5. Slovak Republic has set one national target in this area.

IX. Occurrence of discharges of untreated wastewater (art. 6, para. 2 (g) (i))

For each target set in this area:

1. Please describe the current target and target date. Please provide information on the background (including the baseline/starting point and reference to existing national and international legislation) and justification for the adoption of the target.
2. Please describe the actions taken (e.g., legal/regulatory, financial/economic, informational/educational and management measures) to reach the target (see also article 6, paragraph 5, of the Protocol).
3. Please assess the progress achieved from the baseline towards meeting the target as well as any challenges encountered.
4. Please describe how the target set under this area contributes to fulfilling global and regional commitments, in particular the 2030 Sustainable Development Agenda.
5. If you have not set a target in this area, please explain why.

National target no. 5: Improvement of sewerage, wastewater treatment and discharge of urban wastewater – set in accordance with Art. 6, pt. 2 letter d), e), f), g), h), i); pt. 5 letter a), b), c); Art. 7 pt. 3 and 4 of the Protocol

1. National targets:

- improved situation in the sector of waste water collection and treatment
- implementation of Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy
- implementation of the Council Directive 91/271/EEC of 21 May 1991 concerning urban waste water treatment - there is stated, that waste water treatment plants have to be built with appropriate treatment.

2. The Plan of Development of Public Sewerage allows/ensures treatment of waste water in agglomerations below 2 000 p.e. In certain conditions - support from EU funds. This one is used seldom, because main national target is waste water treatment in agglomerations above 2 000 p.e. (obligation from European Union: Accession Treaty). 1st Water Management Plan of Slovakia and 2nd Water Management Plan of Slovakia include own Programme of Measures, which are split on basic measures and additional measures. Treatment of untreated waste water from agglomerations below 2 000 p.e. belongs to additional measures.

Objective is to settle infringement to the Slovak Republic concerning *EU Directive 91/271/EEC on urban waste water treatment*.

In relation to this topic, proposal of amendment of *the Governmental regulation No. 269/2010 Coll., which sets up requirements for achievement of good water status*, is in the process now. This amendment will complete and specify permit process for construction and operation control of small waste water treatment plants up to 50 PE (entitled domestic waste water treatment plants - DWWTPs).

Law No. 364/2004 Coll. in wording of its amendments (Water Law) and *Law No. 442/2002 Coll. in wording of its amendments (Law on public waterworks and public sewerage)* regulate reduction of waste water discharges. All waste waters producers who have septic tanks are obliged to connect properties to public sewerage in municipality until 31 December 2021, if this form exists and it is possible from technical point of view and costs are not unreasonably high.

Water Law regulates also others conditions for waste water management for everybody who accumulates waste water in septic tank. This person is obliged make safe waste water elimination by transfer to the waste water treatment plant. Municipality or state water authority may ask for papers concerning waste water export for maximum previous 2 years. Company/person who manages waste waters export is obliged on request to give certificate to person who asked for export. There were set up fines and penalties. Who is not able to declare elimination of waste waters (as described above) on request of municipality or state water authority, may pay fines from 500 up to 3,000 euros.

Owner of the domestic waste water treatment plant (DWWTP) manages its maintenance. Or he awards a contract with producer company of DWWTP, which will manage service. DWWTP's owner is obliged submit the results of monitoring of waste water to the state water authority (parameters are specified in permit).

Maintenance of septic tank ensures its owner, that means owner of construction or owner of piece of land where waste water are produced.

Tab. 7. Progress achieved in the sector of waste water treatment (years 2005 - 2020).

	Basic value (2005)	Year 2011	Year 2014	Current value (2020)
water discharged to watercourses altogether (m ³)	443 mil.	414,6 mil.	436,6 mil	459,9 mil.
of that treated wastewater (m ³)	428,2 mil	406,5 mil.	430,1 mil.	455,7 mil.
untreated water (m ³)	15,1 mil.	8,1 mil.	6,5 mil.	4,2 mil.
untreated water (%)	3.41	1.95	1.49	0.91

4. Document *the Vision and Strategy of Development of Slovakia until 2030* is a basic implementation document for national priorities fulfilment of *the Agenda 2030 (UN)* in the Slovak Republic. At the same time it fulfils the role of the *National Strategy of Regional Development of the Slovak Republic* in sense of law No. 539/2008 Coll. concerning regional development. There are three integrated development programmes which contain definitions of priorities and development objectives of Slovakia and identify measures, including:

- increasing of number of municipalities connected to public sewerage in less developed regions;
- to extend and to increase hydraulic capacity of sewerage in agglomerations larger than 2,000 PE
- support of sewerage network construction and waste water treatment plants in agglomerations
- into the 2,000 PE which are located in protected areas of water resources.

Document *the Development plan of public waterworks and public sewerages for the Slovak Republic for years 2021–2027* defines development objectives of public sewerages until year 2027. Implementation of these objectives supports fulfilment of objectives of the *Strategy of environmental policy of the Slovak Republic until year 2030*. That means: agglomerations with more than 2000 PE will manage sewerage and treatment of waste water at a 100% until year 2030; agglomerations with lower number of PE at a 50%.

Document *the Concept of Water Policy of the Slovak Republic for years 2021–2030, with perspective on 2050* is in the process of finalisation.

Concerning sewerage network there are defined problems which have to be solved soon (legislative, conception, methodics).There are: water handling from surface run off, storm water overflows, regulation of run off from urban area, re-use of treated waste water, elimination of risk substances and substances of particular concern from waste water, climate change impact, enlarging and renovation of sewerage infrastructure, energy demandingness and climatic neutrality of waste water treatment plants (WWTPs), sludge handling from WWTPs etc.

Approval of this document is planned during year 2022.

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- *Convention on cooperation for the protection and sustainable use of the Danube river*
- *Common declaration of the water management ministers of the Visegrad Group and Bulgaria and Romania.*

5. Slovak Republic has set one national target in this area.

X. Occurrence of discharges of untreated storm water overflows from wastewater collection systems (art. 6, para. 2 (g) (ii))

For each target set in this area:

1. Please describe the current target and target date. Please provide information on the background (including the baseline/starting point and reference to existing national and international legislation) and justification for the adoption of the target.
2. Please describe the actions taken (e.g., legal/regulatory, financial/economic, informational/educational and management measures) to reach the target (see also article 6, paragraph 5, of the Protocol).
3. Please assess the progress achieved from the baseline towards meeting the target as well as any challenges encountered.
4. Please describe how the target set under this area contributes to fulfilling global and regional commitments, in particular the 2030 Sustainable Development Agenda.
5. If you have not set a target in this area, please explain why.

National target no. 5: Improvement of sewerage, wastewater treatment and discharge of urban wastewater – set in accordance with Art. 6, pt. 2 letter d), e), f), g), h), i); pt. 5 letter a), b), c); Art. 7 pt. 3 and 4 of the Protocol

1. National targets are described in §6 of the Governmental Order No. 269/2010 which sets up requirements from good water status. Before the Governmental Order No. 269/2016 came into force sewer system was mostly combined. In new constructed sewerage systems areas mainly separate sewer system is built. Rainfall tanks with satisfactory capacity are built in the process of waste water treatment plants reconstructions.

Storm water overflows issue in Slovakia is transposed in next legal provisions:

Law No. 442/2002 Coll. on public waterworks and public sewerage and its amendments is focused on technical requirements on sewerage system, construction needs without negative impact on environment and ensurance of capacity for continuous waste water discharges and treatment, with regard to various climat seasonal conditions. This law also includes references to another technical requirements concerning waste water discharges, which are published in other legal provisions. Rain water pollution is not directly mentioned, but references are related to the best technical norms and requirements which make provision for various climat seasonal conditions during construction of sewerage systems.

Water law No. 364/2004 Coll. in wording of its amendments – waste water from storm water overflows buildings may be discharged into surface water during storm rainfall - based on permit. There is necessary to manage measures for mitigation of negative impact of waste water on recipient during construction and operation of sewerage system – in harmony with *Governmental Regulation No. 269/2010. Coll.* Local condition should be taken into account.

2 .Implementation the §6 of the Governmental Order No. 269/2010 which sets up requirements from good water status into practice.

Reduction of storm water overflows is managed through projects which are focused on:

- increasing of: WWTP hydraulic capacity and collection systems (sewerage network);
- reduction of rain water inflow into sewerage network and construction of split sewerage network;
- construction of premises with cribbles for pollution catching
- reconstruction of damaged canalization
- reduction of ballast water amount; collateral effect is decrease of number of storm water overflows

3. Evidence is not available yet.

4. Document ***the Vision and Strategy of Development of Slovakia until 2030*** is a basic implementation document for national priorities fulfilment of *the Agenda 2030 (UN)* in the Slovak Republic. At the same time it fulfils the role of the *National Strategy of Regional Development of the Slovak Republic* in sense of law No. 539/2008 Coll. concerning regional development. There are three integrated development programmes which contain definitions of priorities and development objectives of Slovakia and identify measures, including:

- increasing of number of municipalities connected to public sewerage in les developed regions; to extend and to increase hydraulic capacity of sewerage in agglomerations larger than 2,000 PE
- support of sewerage network construction and waste water treatment plants in agglomerations into the 2,000 PE which are located in protected areas of water resource

Document ***the Development plan of public waterworks and public sewerages for the Slovak Republic for years 2021–2027*** defines development objectives of public sewerages until year 2027. Implementation of these objectives supports fulfilment of objectives of the *Strategy of environmental policy of the Slovak Republic until year 2030*. That means: agglomerations

with more than 2,000 PE will manage sewerage and treatment of waste water at a 100% until year 2030; agglomerations with lower number of PE at a 50%.

Document *the Concept of Water Policy of the Slovak Republic for years 2021–2030, with perspective on 2050* is in the process of finalisation.

Concerning sewerage network there are defined problems which have to be solved soon (legislative, conception, methodics). There are: water handling from surface run off, storm water overflows, regulation of run off from urban area, re-use of treated waste water, elimination of risk substances and substances of particular concern from waste water, climate change impact, enlarging and renovation of sewerage infrastructure, energy demandingness and climatic neutrality of waste water treatment plants (WWTPs), sludge handling from WWTPs etc.

Approval of this document is planned during year 2022.

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- *Protocol on Water and Health to the Convention on the protection and use of transboundary watercourses and international lakes,*
- *Convention on cooperation for the protection and sustainable use of the Danube river*
- *Common declaration of the water management ministers of the Visegrad Group and Bulgaria and Romania.*

5. Slovak Republic has set one national target in this area.

XI. Quality of discharges of wastewater from wastewater treatment installations (art. 6, para. 2 (h))

For each target set in this area:

1. Please describe the current target and target date. Please provide information on the background (including the baseline/starting point and reference to existing national and international legislation) and justification for the adoption of the target.
2. Please describe the actions taken (e.g., legal/regulatory, financial/economic, informational/educational and management measures) to reach the target (see also article 6, paragraph 5, of the Protocol).
3. Please assess the progress achieved from the baseline towards meeting the target as well as any challenges encountered.

4. Please describe how the target set under this area contributes to fulfilling global and regional commitments, in particular the 2030 Sustainable Development Agenda.
5. If you have not set a target in this area, please explain why.

National target no. 5: Improvement of sewerage, wastewater treatment and discharge of urban wastewater – set in accordance with Art. 6, pt. 2 letter d), e), f), g), h), i); pt. 5 letter a), b), c); Art. 7 pt. 3 and 4 of the Protocol

1. Please describe the current target and target date. Please provide information on the background (including the baseline/starting point and reference to existing national and international legislation) and justification for the adoption of the target.

- improved situation in the sector of waste water collection and treatment
- implementation of Water Framework Directive 2000/60 EC with objective to reach good water status
- implementation of the Council Directive 91/271/EEC of 21 May 1991 concerning urban waste water treatment
- implementation of others European Union relevant directives focused on pollution reduction (mainly Directive 2013/39/EU on priority substances in the field of water policy).

2. Please describe the actions taken (e.g., legal/regulatory, financial/economic, informational/educational and management measures) to reach the target (see also article 6, paragraph 5, of the Protocol).

- Water Act no 364/2004 Coll., as amended
- Government Order no 269/2010 Coll prescribing the requirements for the achievement of good water status, as amended

3. Improvement of discharged waste water quality and following improvement of surface water quality and relevant ecosystems.

Actual *Water Management Plan of Slovakia* evaluates progress in comparison with previous planning cycle.

4. Document *the Vision and Strategy of Development of Slovakia until 2030* is a basic implementation document for national priorities fulfilment of *the Agenda 2030 (UN)* in the Slovak Republic. At the same time it fulfils the role of the *National Strategy of Regional Development of the Slovak Republic* in sense of law No. 539/2008 Coll. concerning regional development. There are three integrated development programmes which contain definitions of priorities and development objectives of Slovakia and identify measures, including:

- increasing of number of municipalities connected to public sewerage in less developed regions; to extend and to increase hydraulic capacity of sewerage in agglomerations larger than 2,000 PE
- support of sewerage network construction and waste water treatment plants in agglomerations into the 2,000 PE which are located in protected areas of water resource

Document *the Development plan of public waterworks and public sewerages for the Slovak Republic for years 2021–2027* defines development objectives of public sewerages until year 2027. Implementation of these objectives supports fulfilment of objectives of the *Strategy of environmental policy of the Slovak Republic until year 2030*. That means: agglomerations with more than 2,000 PE will manage sewerage and treatment of waste water at a 100% until year 2030; agglomerations with lower number of PE at a 50%.

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Concerning sewerage network there are defined problems which have to be solved soon (legislative, conception, methodics).There are: water handling from surface run off, storm water overflows, regulation of run off from urban area, re-use of treated waste water, elimination of risk substances and substances of particular concern from waste water, climate change impact, enlarging and renovation of sewerage infrastructure, energy demandingness and climatic neutrality of waste water treatment plants (WWTPs), sludge handling from WWTPs etc. Approval of this document is planned during year 2022.

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- *National Programme of the Slovak Republic for administration of EU Directive 91/271/EEC on urban waste water treatment as amended by the act of the Commission 98/15/EC and Regulation of the European Parliament and Council 1882/2003/EC*
- *Operational Programme Quality of Environment*
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- *the Convention on the protection and use of transboundary watercourses and international lakes,*
- *Protocol on Water and Health to the Convention on the protection and use of transboundary watercourses and international lakes,*
- *Convention on cooperation for the protection and sustainable use of the Danube river*
- *Common declaration of the water management ministers of the Visegrad Group and Bulgaria and Romania.*

5. Slovak Republic has set one national target in this area.

XII. Disposal or reuse of sewage sludge from collective systems of sanitation or other sanitation installations (art. 6, para. 2 (i))

For each target set in this area:

1. Please describe the current target and target date. Please provide information on the background (including the baseline/starting point and reference to existing national and international legislation) and justification for the adoption of the target.
2. Please describe the actions taken (e.g., legal/regulatory, financial/economic, informational/educational and management measures) to reach the target (see also article 6, paragraph 5, of the Protocol).
3. Please assess the progress achieved from the baseline towards meeting the target as well as any challenges encountered.
4. Please describe how the target set under this area contributes to fulfilling global and regional commitments, in particular the 2030 Sustainable Development Agenda.
5. If you have not set a target in this area, please explain why.

National target no. 5: Improvement of sewerage, wastewater treatment and discharge of urban wastewater – set in accordance with Art. 6, pt. 2 letter d), e), f), g), h), i); pt. 5 letter a), b), c); Art. 7 pt. 3 and 4 of the Protocol

1. Please describe the current target and target date. Please provide information on the background (including the baseline/starting point and reference to existing national and international legislation) and justification for the adoption of the target.

- improved situation in the sector of waste water collection and treatment
- implementation of Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy
- implementation of Council Directive 86/278/EEC of 12 June 1986 on the protection of the environment, and in particular of the soil, when sewage sludge is used in agriculture

2. Please describe the actions taken (e.g., legal/regulatory, financial/economic, informational/educational and management measures) to reach the target (see also article 6, paragraph 5, of the Protocol).

Legislation:

- Water Act no 364/2004 Coll., as amended
- 1st Water Management Plan of Slovakia and its Programme of Measures
- 2nd Water Management Plan of Slovakia and its Programme of Measures

Approval of third *Water Management Plan of Slovakia* is under process now:

- Governmental Order No. 279/2011 Coll. (which contains Programme of Measures, purpose of its achievement of environmental objectives)
- Waste Law No. 223/2001 Coll., as amended
- Law on application of sewage sludge into soil No. 188/2003 Coll, as amended
- Programme of Waste Management of the Slovak Republic

Education:

- Education of state administration,
- Education programmes,
- Implementation of good agriculture practice,
- Rural Development Programme - this programme will strength competition in branch of agriculture, forestry and food industry by financing of professional trainings, courses and consultation services. The objective is increasing of professionalism of individual persons in agriculture, elaborators and recipients of aid from EU funds.

3. Please assess the progress achieved from the baseline towards meeting the target as well as any challenges encountered.

Tab. 8 Disposal/reuse of sewage sludge (years 2007 – 2020).

year	Sludge production - dry mass - (t)							
	total	Recovery				disposal		temporarily stored in WWTPs
		application into agricultural soil	application into forest soil	compost and other recovery	energy recovery (after biological handling)	burn	landfills	
2007	55 305	0	0	42 315	0	0	3 590	9 400
2008	57 810	0	0	38 368	0	0	8 676	10 766
2009	58 582	0	0	47 056	0	0	2 696	8 830
2010	54 760	923	0	47 140	0	0	16	6 681
2011	58 718	358	0	50 111	0	0	2 306	5 943
2012	58 706	1 254	0	46 446	3 196	0	1 615	6 195
2013	57 433	518	0	45 261	5 008	0	1 666	4 980
2014	56 875	0	0	36 524	16 038	0	1 073	3 240
2015	56 242	0	0	34 689	16 913	0	1 709	2 932
2016	53 054	0	0	34 695	10 975	68	2 359	4 957
2017	54 517	0	0	34 416	12 238	0	2 636	5 227
2018	55 929	0	0	32 982	11 677	0	2 451	8 819
2019	54 832	0	0	32 217	12 932	0	2 296	7 387
2020	55 519	0	0	36 562	11 928	0	2 302	4 727

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- increasing of number of municipalities connected to public sewerage in less developed regions; to extend and to increase hydraulic capacity of sewerage in agglomerations larger than 2,000 PE
- support of sewerage network construction and waste water treatment plants in agglomerations into the 2,000 PE which are located in protected areas of water resource

Document *the Development plan of public waterworks and public sewerages for the Slovak Republic for years 2021–2027* defines development objectives of public sewerages until year 2027. Implementation of these objectives supports fulfilment of objectives of the *Strategy of environmental policy of the Slovak Republic until year 2030*. That means: agglomerations with more than 2,000 PE will manage sewerage and treatment of waste water at a 100% until year 2030; agglomerations with lower number of PE at a 50%.

Document *the Concept of Water Policy of the Slovak Republic for years 2021–2030, with perspective on 2050* is in the process of finalisation.

Concerning sewerage network there are defined problems which have to be solved soon (legislative, conception, methodics). There are: water handling from surface run off, storm

water overflows, regulation of run off from urban area, re-use of treated waste water, elimination of risk substances and substances of particular concern from waste water, climate change impact, enlarging and renovation of sewerage infrastructure, energy demandingness and climatic neutrality of waste water treatment plants (WWTPs), sludge handling from WWTPs etc.

Approval of this document is planned during year 2022.

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- *Convention on cooperation for the protection and sustainable use of the Danube river*
- *Common declaration of the water management ministers of the Visegrad Group and Bulgaria and Romania.*

5. Slovak Republic has set one national target in this area.

XIII. Quality of wastewater used for irrigation purposes (art. 6, para. 2 (i))

For each target set in this area:

1. Please describe the current target and target date. Please provide information on the background (including the baseline/starting point and reference to existing national and international legislation) and justification for the adoption of the target.
2. Please describe the actions taken (e.g., legal/regulatory, financial/economic, informational/educational and management measures) to reach the target (see also article 6, paragraph 5, of the Protocol).
3. Please assess the progress achieved from the baseline towards meeting the target as well as any challenges encountered.
4. Please describe how the target set under this area contributes to fulfilling global and regional commitments, in particular the 2030 Sustainable Development Agenda.
5. If you have not set a target in this area, please explain why.

This is not relevant for Slovakia (treated waste water is not used for irrigation due to the water sufficiency).

XIV. Quality of waters which are used as sources for drinking water (art. 6, para. 2 (j))

For each target set in this area:

1. Please describe the current target and target date. Please provide information on the background (including the baseline/starting point and reference to existing national and international legislation) and justification for the adoption of the target.
2. Please describe the actions taken (e.g., legal/regulatory, financial/economic, informational/educational and management measures) to reach the target (see also article 6, paragraph 5, of the Protocol).
3. Please assess the progress achieved from the baseline towards meeting the target as well as any challenges encountered.
4. Please describe how the target set under this area contributes to fulfilling global and regional commitments, in particular the 2030 Sustainable Development Agenda.
5. If you have not set a target in this area, please explain why.

National target No. 8: Surveillance of cyanobacteria expansion in water reservoirs – set in accordance with Art. 6 pt. 2 letter k) of the Protocol

1. The target was set for monitoring purposes of selected locations (water reservoirs used for bathing and water supply purposes) and collecting information on current cyanobacterial occurrence, frequency of proliferation, detection of the presence of cyanotoxins in water and in cyanobacteria biomass. Cyanobacteria are an essential part of water environment; the natural balance of the aquatic habitat is more frequently disrupted and the bacteria overgrowth occurs with the increasing number of water reservoirs threatened by eutrophication. Some types of cyanobacteria produce toxins that accumulate in the water and pose many health risks to the human body mainly in regard to bathing water and surface water that are used for production of drinking water.

Next target is the determination of species of cyanobacteria water flowers composition in connection with cyanotoxin species that produce possibly changes in species composition for the monitored period. The attention is paid to detection of the presence and proliferation of invasive cyanobacteria species.

2. PHA SR has an elaborated flow chart on visual inspection and monitoring of cyanobacteria overgrowth at selected locations and a flow chart on water quality assessment based on laboratory results. Furthermore, there are annually prepared Instructions on bathing water sampling from natural swimming pools and bio swimming pools used for determination of biological and ecotoxicological indicators for current bathing season, destined for the regional PHA offices. The Instructions set out specific procedures as to occurrence of cyanobacteria, their sampling, laboratory processing and possibility of delivering samples from regions to PHA SR for further analyses.

On its regular meetings of Environment Biology workers, PHA SR carries out lectures on the issue of sampling, cyanobacteria and training of new workers from regional PHA offices in their laboratory setting in accordance with valid legislation and technical norms. PHA SR carries out sampling mainly in selected locations influenced by cyanobacteria growth and provides consultancy activity to regional PHA SR in the field.

The annual cyanobacteria occurrence is monitored in the water reservoirs of Turček, Málinec, Klenovec and Hřiňová that serve to produce drinking water. In all locations in the past, local species of cyanobacteria dominated (genus *Microcystis* spp. and *Woronichinia naegeliana*);

however, for the monitored period there was a change in cyanobacteria species composition – predominance of fibrous species was detected in water reservoir of Hriňová and Turček.

Apart from cyanotoxins microcystins (LR, YR, RR), cyanotoxin cylindrospermopsin is also monitored in surface water and biomass. Its main producers are species *Cylindrospermopsis raciborskii* and *Aphanizomenon flos-aquae*. For the monitored period, microcystine LR was detected 1,1 and 7,7 µg/ in the waters, in biomass were present cyanobacteria in values ranging from 11,3 µg/g do 1553 µg/g. The measured values of cylindrospermopsin in the waters reached values from 0,18 µg/l do 30,9 µg/l, in biomass 35 µg/g and 45 µg/g.

The species *Cylindrospermopsis raciborskii*, *Cuspidothrix issatschenkoi* and *Planktothrix rubescens* belong to the invasion cyanobacteria species monitored in bathing waters of the Slovak Republic. *Cylindrospermopsis raciborskii* originally comes from subtropics; the occurrence in the Slovak Republic is probably related to climate change. It occurs in warm waters in several locations of western and eastern Slovakia as a part of water flowers (monocultural water flower of the species has not been detected yet). For the monitored period the occurrence of the above-mentioned was also detected in Bátovce-Lipovina. At the majority of locations with the confirmed occurrence of the *Cylindrospermopsis raciborskii* and *Cuspidothrix issatschenkoi*, *Planktothrix rubescens* also occurred at the same time. The origin of *Planktothrix rubescens* is in holarctic area, mainly in Norway. In the overgrowth period, it forms striking red coloration of water or snow and ice. In total, it was detected at 3 locations; in the last years it has occasionally occurred in two colder locations Počúvadlo and water reservoir Turček. Due to the changing climatic conditions associated with warming, it is possible to anticipate the increase of locations with the occurrence of invasive species of cyanobacteria that originate in subtropical or tropical areas.

3. In bathing periods of 2019-2021, 95 samples of surface waters and water blooms from natural swimming pools, bathing water and water reservoirs were examined. Cyanobacteria overgrowth in bathing water was detected mainly in locations of Šaštín-Stráže, Vinianske jazero, Bátovce-Lipovina, Ružín, Malé Leváre, Košické jazero. At these locations the problems with the occurrence of water flower appear yearly. It relates to smaller water tanks intensively influenced by breeding and fishing. Water flowers at these locations are simultaneously formed by several taxons; currently prevailing ones are fibrous species with dominance of *Aphanizomenon flos-aquae*. Other species include *A. gracile*, *Cylindrospermopsis raciborskii*, *Limnothrix* spp. and *Cuspidothrix issatschenkoi*.

Water quality has improved in the bathing water of Zemplínska Šírava and Teplý vrch that belonged to the most endangered locations and cyanobacteria for the monitored period were not detected in them or they were recorded only in low abundance.

In addition to surface water, drinking water was also examined for the presence of cyanobacteria and cyanotoxins. Monitoring has shown that water intended for human consumption is not at risk by cyanotoxins; cyanotoxin microcystin was not detected in any drinking water sample. According to the requirements of Decree no. 247/2017 Coll. laying down details on drinking water quality, drinking water quality control, program on monitoring and risk management in drinking water supply, the limit of parameter microcystin LR” in drinking water is set at 1 µg/l.

4. Monitoring of water areas development affected by cyanobacteria expansion significantly contributes to the fulfillment of Sustainable Development Goal no. 3 Good Health and Well-Being of the Agenda 2030.

5. Slovak Republic has set 2 targets in this area.

National target No. 12 – Improving of water resources protection – set in accordance with Art. 4 pt. 2 letter c) of the Protocol

1. Reason for setting the target was the intention to focus on the area of water resources protection. In protected zones, in individual levels of protection, there are restrictions of activities which cannot be carried out there. This way the protection of water resources is also ensured, namely in mountain areas where sources of groundwaters can be found, as well as springs of mineral waters.

2. In 2018, the Ministry of the Environment of the Slovak Republic proposed the Act no. 305/2018 Coll. on protected areas of natural water accumulation and on the amendment of certain laws, which aims to protect not only the Žitný ostrov, but all the ten rarest areas with the largest groundwater reserves in Slovakia. The Ministry of Environment of the SR, the Ministry of Health of the SR and the Ministry of Agriculture and Rural Development of the SR cooperated in preparation of the law based on the existing legal regulations. Act. no. 305/2018 entered into force on 1 January 2019.

Protection of the nature, including wetlands, strengthens the protection of water resources and aquatic ecosystems. Government of the Slovak Republic approved an update of the Wetland Care Program of the Slovak Republic until 2024 and the Action Plan for the Wetlands for 2019 – 2021.

Protection of water-dependent ecosystems is supported, inter alia, by the declaration of selected river areas, either to a national or a European network of protected areas, more information can be found at: <http://www.soprs.sk/natura/index1.php?p=4&lang=sk>.

Organisation of educational and awareness-raising activities also contributes to raising public awareness in the field of water protection and aquatic ecosystems: educational programs for schools, lectures, discussions, exhibitions, competitions, creative workshops etc., as well as regular events on the occasion of the World Water Day (in 2018, 3 950 participants took part in the event; in 2019, the number of participants exceeded 5 220).

3. Act no. 305/2018 Coll. from 16 October 2018 constitutes protected zones of natural accumulation of waters (hereinafter referred to as “protected water management area“), activities prohibited at the areas, and measures to protect surface waters and groundwaters naturally occurring in a protected water management area. It regulates rights and duties of persons in the field of water protection and water conditions, the competence of state administration bodies and municipalities in a protected water management area, and the accountability for breaching the duties stipulated in the Act.

For the protection of groundwaters and surface waters, measures are set in a document Danube River Basin Management Plan, Vistula River Basin Management Plan (Water Plan of the Slovak Republic). Action Plan for Wetlands for 2019 – 2021 will be assessed at the end of 2021.

Difficulties with educational and awareness-raising activities occurred due to pandemic measures in 2020 and 2021, the activities were therefore carried out through web pages.

4. By strengthening the protection of water resources, achievement of Sustainable Development Goals of the Agenda 2030 is supported significantly, namely no. 6 Clean Water and Sanitation, but also no. 3 Good Health and Well-Being and no. 13 Climate Action.

Strengthening the protection of water resources is part of water and nature protection in line with national interests of the country, as well as in accordance with commitments of the Slovak Republic resulting from membership in the EU and in many other international conventions, in the field of waters namely the Convention on cooperation for the protection and sustainable use of the river Danube and the UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes.

5. Slovak Republic has set 2 targets in this area.

XV. Quality of waters used for bathing (art. 6, para. 2 (j))

For each target set in this area:

1. Please describe the current target and target date. Please provide information on the background (including the baseline/starting point and reference to existing national and international legislation) and justification for the adoption of the target.
2. Please describe the actions taken (e.g., legal/regulatory, financial/economic, informational/educational and management measures) to reach the target (see also article 6, paragraph 5, of the Protocol).
3. Please assess the progress achieved from the baseline towards meeting the target as well as any challenges encountered.
4. Please describe how the target set under this area contributes to fulfilling global and regional commitments, in particular the 2030 Sustainable Development Agenda.
5. If you have not set a target in this area, please explain why.

National target No. 7: Mapping of enteroviruses occurrence in bathing water – set in accordance with Art. 6 pt. 2 letter k) of the Protocol

1. The target was set due to the absence of relevant data on enteroviruses occurrence in bathing waters in the Slovak Republic.
2. In the selected recreation areas, the coherence between microbiological and biological revitalization of bathing water used for swimming and circulation of enteroviruses was monitored. Within the task, 26 natural swimming pools – Ivanka pri Dunaji, Zlaté piesky, Kuchajda, Veľký Draždiak, Vajnorské jazero, Slnčné jazerá – Senec, Zelená voda, Kunovská priehrada, Gazarka, Rovinka, Nové Košariská, Liptovská Mara, Malé Leváre, Plavecký Štvrtok, Ružiná, Teplý vrch, Dolnohodrušské jazero, Veľké Richňavské jazero, Počúvadlianske jazero, Veľké Kolpašské jazero, Vindšachtské jazero, Pod Bukovcom, Ružin, Vinianske jazero, Zemplínska Šírava, Veľká Domaša and 5 artificial swimming pools – Tatralandia Liptovský Mikuláš and thermal baths Bešeňová, Podhájska, Veľký Meder and Dunajská Streda were monitored.

Sampling of surface and pool water to monitor the occurrence of enteroviruses during the summer bathing season was carried out by the workers of PHA SR in Bratislava and the environmental hygiene departments of regional PHA in Banská Bystrica and Košice. The samples were analyzed by the laboratories of PHA SR in Bratislava, virological laboratories of regional PHA in Banská Bystrica and regional PHA in Košice. The sample examination was carried out according to the recommended standard methodologies of World Health Organization. Upon delivery to the laboratory the water samples were treated by concentration method, a two-phase separation method using PEG and Dextran. By this method, the eluates from interphase (IF) and lower phase (SF) that were treated with chloroform, were obtained. Processed and labeled samples - SF and IF eluate were frozen at - 20 °C and sent to PHA SR in Bratislava. Detection of enterovirus RNA by method RT (Reverse Transcription) and Nested PCR was performed by the National Reference Center for Enteroviruses SZU, which is working on standardization of the PCR method for the determination of enteroviruses in bathing water.

Microbiological water quality was monitored in the indicators *Escherichia coli*, Intestinal enterococci and beyond the scope of legislation also in the indicator Coliform bacteria, *Staphylococcus aureus*, genus *Salmonella*, presence of other pathogenic and conditionally

pathogenic microorganisms, *Pseudomonas aeruginosa*, *Legionella*, Cultivated organisms at 37 °C/ 36 ± 1 °C and also other present microorganisms were identified.

In surface water, biological analysis was carried out while monitoring the occurrence, multiplicity and species diversity of cyanobacteria, algae, alternatively other organisms. Indicators of producers, consumers and amoebae determined by cultivation were microscopically checked in the water of artificial swimming pools.

3. In the years 2018-2019, the samples taken in the previous two years were processed and prepared for PCR analyses. Simultaneously the complex background documentation for the report elaboration, focused on search for potential coherence between the occurrence of enteroviruses and microbiological and biological revival of selected waters was prepared (in accordance with Decree of the Ministry of Health of the Slovak Republic no. 308/2012 Coll. on water quality, water quality control and on requirements for operation, furnishing of facility areas and premises at the natural swimming pool and at the artificial swimming pool and the Decree of the Ministry of Health of the Slovak Republic no. 309/2012 Coll. on the requirements for bathing water, as amended).

4. Mapping the occurrence of enterovirus in waters and bathing water significantly contributes to the fulfillment of Sustainable Development Global Goal no. 3 Good Health and Well-Being of the Agenda 2030.

The results of the enterovirus occurrence monitoring will serve as a basis for amendment of legislation related to monitoring the quality of bathing water.

5. Slovak Republic has set 2 targets in this area.

National target No. 8: Surveillance of cyanobacteria expansion in water reservoirs – set in accordance with Art. 6 pt. 2 letter k) of the Protocol

1. The target was set for monitoring purposes of selected locations (water reservoirs used for bathing and water supply purposes) and collecting information on current cyanobacterial occurrence, frequency of proliferation, detection of the presence of cyanotoxins in water and in cyanobacteria biomass. Cyanobacteria are an essential part of water environment; the natural balance of the aquatic habitat is more frequently disrupted and the bacteria overgrowth occurs with the increasing number of water reservoirs threatened by eutrophication. Some types of cyanobacteria produce toxins that accumulate in the water and pose many health risks to the human body mainly in regard to bathing water and surface water that are used for production of drinking water.

Next target is the determination of species of cyanobacteria water flowers composition in connection with cyanotoxin species that produce possibly changes in species composition for the monitored period. The attention is paid to detection of the presence and proliferation of invasive cyanobacteria species.

2. PHA SR has an elaborated flow chart on visual inspection and monitoring of cyanobacteria overgrowth at selected locations and a flow chart on water quality assessment based on laboratory results. Furthermore, there are annually prepared Instructions on bathing water sampling from natural swimming pools and bio swimming pools used for determination of biological and ecotoxicological indicators for current bathing season, destined for the regional PHA offices. The Instructions set out specific procedures as to occurrence of cyanobacteria, their sampling, laboratory processing and possibility of delivering samples from regions to PHA SR for further analyses.

On its regular meetings of Environment Biology workers, PHA SR carries out lectures on the issue of sampling, cyanobacteria and training of new workers from regional PHA offices in their laboratory setting in accordance with valid legislation and technical norms. PHA SR

carries out sampling mainly in selected locations influenced by cyanobacteria growth and provides consultancy activity to regional PHA SR in the field.

The annual cyanobacteria occurrence is monitored in the water reservoirs of Turček, Málinec, Klenovec and Hriňová that serve to produce drinking water. In all locations in the past, local species of cyanobacteria dominated (genus *Microcystis* spp. and *Woronichinia naegeliana*); however, for the monitored period there was a change in cyanobacteria species composition – predominance of fibrous species was detected in water reservoir of Hriňová and Turček.

Apart from cyanotoxins microcystines (LR, YR, RR), cyanotoxin cylindrospermopsin is also monitored in surface water and biomass. Its main producers are species *Cylindrospermopsis raciborskii* and *Aphanizomenon flos-aquae*. For the monitored period, microcystine LR was detected 1,1 and 7,7 µg/ in the waters, in biomass were present cyanobacteria in values ranging from 11,3 µg/g to 1553 µg/g. The measured values of cylindrospermopsin in the waters reached values from 0,18 µg/l to 30,9 µg/l, in biomass 35 µg/g and 45 µg/g.

The species *Cylindrospermopsis raciborskii*, *Cuspidothrix issatschenkoi* and *Planktothrix rubescens* belong to the invasion cyanobacteria species monitored in bathing waters of the Slovak Republic. *Cylindrospermopsis raciborskii* originally comes from subtropics; the occurrence in the Slovak Republic is probably related to climate change. It occurs in warm waters in several locations of western and eastern Slovakia as a part of water flowers (monocultural water flower of the species has not been detected yet). For the monitored period the occurrence of the above-mentioned was also detected in Bátorovce-Lipovina. At the majority of locations with the confirmed occurrence of the *Cylindrospermopsis raciborskii* and *Cuspidothrix issatschenkoi*, *Planktothrix rubescens* also occurred at the same time. The origin of *Planktothrix rubescens* is in holarctic area, mainly in Norway. In the overgrowth period, it forms striking red coloration of water or snow and ice. In total, it was detected at 3 locations; in the last years it has occasionally occurred in two colder locations Počúvadlo and water reservoir Turček. Due to the changing climatic conditions associated with warming, it is possible to anticipate the increase of locations with the occurrence of invasive species of cyanobacteria that originate in subtropical or tropical areas.

3. In bathing periods of 2019-2021, 95 samples of surface waters and water blooms from natural swimming pools, bathing water and water reservoirs were examined. Cyanobacteria overgrowth in bathing water was detected mainly in locations of Šaštín-Stráže, Vinianske jazero, Bátorovce-Lipovina, Ružín, Malé Leváre, Košické jazero. At these locations the problems with the occurrence of water flower appear yearly. It relates to smaller water tanks intensively influenced by breeding and fishing. Water flowers at these locations are simultaneously formed by several taxons; currently prevailing ones are fibrous species with dominance of *Aphanizomenon flos-aquae*. Other species include *A. gracile*, *Cylindrospermopsis raciborskii*, *Limnothrix* spp. and *Cuspidothrix issatschenkoi*.

Water quality has improved in the bathing water of Zemplínska Šírava and Teplý vrch that belonged to the most endangered locations and cyanobacteria for the monitored period were not detected in them or they were recorded only in low abundance.

In addition to surface water, drinking water was also examined for the presence of cyanobacteria and cyanotoxins. Monitoring has shown that water intended for human consumption is not at risk by cyanotoxins; cyanotoxin microcystin was not detected in any drinking water sample. According to the requirements of Decree no. 247/2017 Coll. laying down details on drinking water quality, drinking water quality control, program on monitoring and risk management in drinking water supply, the limit of parameter microcystin LR in drinking water is set at 1 µg/l.

4. Monitoring of water areas development affected by cyanobacteria expansion significantly contributes to the fulfillment of Sustainable Development Goal no. 3 Good Health and Well-Being of the Agenda 2030.

5. Slovak Republic has set 2 targets in this area.

XVI. Quality of waters used for aquaculture or for the production or harvesting of shellfish (art. 6, para. 2 (j))

For each target set in this area:

1. Please describe the current target and target date. Please provide information on the background (including the baseline/starting point and reference to existing national and international legislation) and justification for the adoption of the target.
2. Please describe the actions taken (e.g., legal/regulatory, financial/economic, informational/educational and management measures) to reach the target (see also article 6, paragraph 5, of the Protocol).
3. Please assess the progress achieved from the baseline towards meeting the target as well as any challenges encountered.
4. Please describe how the target set under this area contributes to fulfilling global and regional commitments, in particular the 2030 Sustainable Development Agenda.
5. If you have not set a target in this area, please explain why.

This part of the report is not relevant for Slovakia. Slovakia is landlocked country and we do not have any information on either the production or harvesting of shellfish.

XVII. Application of recognized good practice in the management of enclosed waters generally available for bathing (art. 6, para. 2 (k))

For each target set in this area:

1. Please describe the current target and target date. Please provide information on the background (including the baseline/starting point and reference to existing national and international legislation) and justification for the adoption of the target.
2. Please describe the actions taken (e.g., legal/regulatory, financial/economic, informational/educational and management measures) to reach the target (see also article 6, paragraph 5, of the Protocol).
3. Please assess the progress achieved from the baseline towards meeting the target as well as any challenges encountered.
4. Please describe how the target set under this area contributes to fulfilling global and regional commitments, in particular the 2030 Sustainable Development Agenda.
5. If you have not set a target in this area, please explain why.

At the time of last target setting was not considered necessary to define a target in this area.

XVIII. Identification and remediation of particularly contaminated sites (art. 6, para. 2 (I))

For each target set in this area:

1. Please describe the current target and target date. Please provide information on the background (including the baseline/starting point and reference to existing national and international legislation) and justification for the adoption of the target.
2. Please describe the actions taken (e.g., legal/regulatory, financial/economic, informational/educational and management measures) to reach the target (see also article 6, paragraph 5, of the Protocol).
3. Please assess the progress achieved from the baseline towards meeting the target as well as any challenges encountered.
4. Please describe how the target set under this area contributes to fulfilling global and regional commitments, in particular the 2030 Sustainable Development Agenda.
5. If you have not set a target in this area, please explain why.

National target No 9 - The issue of environmental burdens threatening water resources – set in accordance with Art. 4 pt. 2 letter c), Art. 5 pt. b), Art. 6 pt. 2 letter 1), Art. 9 pt. 1 letter b) of the Protocol

1. The target is set at national level in agreement with the State Remediation Programme of Environmental Burdens (2010-2015), updated every 6 years. The target date is 2027 or 2030. The Ministry of the Environment is responsible for implementation. The national targets are defined in agreement with the State Remediation Programme of Environmental Burdens (2016-2021) (prepared in 2015) which constitutes the basic conceptual document addressing remediation of environmental burdens. It contains lists of the most risky locations, which are designed to address the need for research, monitoring or remediation of environmental burdens. Slovak Environment Agency manages and updates the Information System of Environmental Burdens (<http://envirozataze.enviroportal.sk>). The State Remediation Programme of Environmental Burdens for 2022-2027 (prepared in 2021) is currently in approval process.

2. Legislative measures:

- Act No. 569/2007 Coll. on Geological Works (Geological Act)
- Act No. 409/2011 Coll. on certain measures in relation to environmental burdens and on the amendment and supplements to certain acts (currently in amendment)
- Ministry of Environment of the Slovak Republic No. 1/2015-7 of 28 January 2015 on the preparation of risk assessment of contaminated site define the general principle of this analysis Strategy

Measures accepted from August 2018 until 2021:

Within the framework of Operational Programme Quality of Environment for 2014-2020 were realized geological projects Remediation of Selected Environmental Burdens (2) – 5 localities, and Remediation of Selected Environmental Burdens (4) – 7 localities.

Preparation of State Remediation Programme of Environmental Burdens for 2022-2027 started in 2021 in cooperation with the Slovak Environmental Agency. Numerous educational and informational measures as conferences, seminars, informational days and workshops focused on solving the issues about environmental burdens took place also in cooperation with the Slovak Environmental Agency (more details in National target No 11).

3. The achieved progress depends on provided funds. Another more projects were prepared for remediation of environmental burdens within the framework of Operational Programme Quality of Environment. However, the procurement for Remediation of Selected Environmental Burdens (5) and Remediation of Environmental Burdens (locality - Predajná) were canceled in 2021.

4. The elimination of environmental burdens which are threatening water resources significantly contributes to the fulfillment of the global goals of Agenda for Sustainable Development, in particular goal No. 6 Clean water and sanitation – sub-targets 6.1, 6.3, 6.5 and 6.6.

Remediation of environmental burdens in Slovakia contributes to the elimination, reduction or limitation of contamination to the level of acceptable risk with regard to current and future land use (§ 3 r) of Act no. 569/2007 Coll. on geological works (Geological Act) as amended.

5. The targets are gradually met through the implementation of relevant measures.

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

For each target set in this area:

1. Please describe the current target and target date. Please provide information on the background (including the baseline/starting point and reference to existing national and international legislation) and justification for the adoption of the target.

2. Please describe the actions taken (e.g., legal/regulatory, financial/economic, informational/educational and management measures) to reach the target (see also article 6, paragraph 5, of the Protocol).

3. Please assess the progress achieved from the baseline towards meeting the target as well as any challenges encountered.

4. Please describe how the target set under this area contributes to fulfilling global and regional commitments, in particular the 2030 Sustainable Development Agenda.

5. If you have not set a target in this area, please explain why.

National target no. 1: Implementation of the Water Framework Directive – set in accordance with the Art. 3 to 14 of the Protocol

1. The goal of this target is to protect the water in the whole framework by the Directive 2000/60/EC of the European Parliament and of the Council (Water Framework Directive). The target date is 2027. The Water Framework Directive establishes a framework for the protection of surface water and groundwater which will prevent their further deterioration, protect and improve the status of aquatic ecosystems, promote sustainable water use, ensure increased protection of the aquatic environment through measures on decreasing and possibly eliminating emissions. It will contribute to the mitigation of floods and droughts and it will contribute to ensuring sufficient supplies of quality surface water and groundwater necessary for its sustainable, balanced and equitable use.

2. The achievement of the target's goals is ensured on an ongoing basis through implementing the Water Framework Directive, coordinated by European Commission under the Common implementation Strategy (CIS) for the Water Framework Directive (2000/60/EC) and for the Floods directive (2007/60/EC) and the CIS Work Programme for period 2019-2021. They are actualized every three years. 2. The key tool for achieving the goals of the target is the Water Plan of the Slovak Republic: Danube River Basin Management Plan and Vistula River

Basin Management Plan and their Programmes of Measures. The activities taken to reach the targets are listed below.

The most important activities, documents and measures:

- Evaluation of the 2nd River Basin Management Plans and 1st Flood Risk Management Plan
- European Commission approved Strategic Approach to Pharmaceuticals in the Environment, which focus on all phases on the lifecycle from design and production through use to disposal
- Fitness Check on EU water legislation and public consultation on Council Directive 91/271/EHS concerning urban waste water treatment and integration of water policy objectives into the other sector policies
- Evaluation of progress in preparation of the 3rd River Basin Management Plans and 2nd Flood Risk Management Plan
- The new EU Strategy on Adaptation to Climate Change
- Zero Pollution Action Plan: Towards zero pollution for air, water and soil, which include vision for the year 2050 and set an objectives for the year 2030 (e.g. improving water quality by reducing waste, plastic litter at sea (by 50%) and microplastics released into the environment (by 30%))
- Common Agricultural Policy for the period 2023-2027 was approved at the EU level

Further activities and guidelines:

- Technical guidance for deriving environmental quality standards
- Reporting of the Programme of Measures
- Reporting of the Environmental Quality standards
- Concentration of nutrients (supporting of good ecological state)
- Voluntary Groundwater Watch List
- Actualization of Reporting of Directive 2000/60/EC establishing a framework for Community action in the field of water policy, Environmental quality standards and Directive 2007/60/EC on the assessment and management of flood risk
- Water Framework Directive Reporting Guidance 2022 FINAL Draft V4
- Guidance Document No. 37 – Steps for defining and assessing ecological potential for improving comparability of Heavily Modified Water Bodies
- Guidance for implementing environmental quality standards for metals
- Actualization of Directive (EU) 2020/2184 on the quality of water intended for human consumption
- Actualization of List of Priority Substances
- European Parliament legislative resolution on Minimal requirements for water reuse
- Start of covid 19 monitoring in the sewage at the EU level
- Participation in 4th Joint Danube Survey
- Groundwater Guidance 4th edition
- Preparation of revision of Directive 2006/112/EC on the protection of groundwater against pollution and deterioration

Detail information about activities coordinated by the European Commission are published on CIRCAB webpage.

National documents supporting the Water Framework Directive implementation:

- The Public Water Supply System Development Plan for Slovakia for years 2016-2021 and actualized Public Water Supply System Development Plan for Slovakia for years 2021-2027 (more details in National target No 2)
- The Public Sewer System Development Plan for Slovakia for years 2016-2021 and actualized Public Sewer System Development Plan for Slovakia for years 2021-2027 (more details in National target No 5)

3. Water Framework Directive (2000/60/EC) set aims to be met in 2015, however this was too ambitious. The current agreement declares that good status of the water bodies will be achieved by 2027 at the maintaining the same objectives. In the 3rd River Basin Management Plans are listed and explained exceptions from achievement of objectives according to Art. 4.4. The significant effort was made to implement Water Framework Directive. The implementation of other related directives had positive effect, in particular the directive concerning urban waste water treatment, nitrates directive, directive on industrial emissions ect. However, European water remain under considerable pressure from diffuse sources of pollution (agriculture, transport) as well as from point sources of pollution (industry, energy), over-abstraction and hydromorphological changes.

4. The Implementation of the Water Framework Directive contribute to the fulfillment of EU policies and programmes in the field of environmental protection and sustainability. The implementation is also in agreement with Slovakia's national interest as well as with the obligations arising from the EU membership and other international convention. In the field of water it is particularly the Convention on Cooperation for the Protection and Sustainable Use of the Danube River and Convention on the Protection and Use of Transboundary Watercourses and International Lakes.

Implementation of Water Framework Directive contributes to achievement of the global objectives of Agenda for Sustainable Development 2030, particularly goal No. 3 Good Health and Wellbeing, No. 6 Clean Water and Sanitation and No. 13 Climate Action.

The realized activities also meet several objectives set in Strategy of the Environmental Policy of the Slovak Republic until 2030, particularly 2.1 Stopping the loss of biodiversity, 3.2 Protection and restoration of landscape elements on agricultural land, 6.5 Prevention and mitigation of the climate change impacts by protecting ecosystems and their services and 8.3 Water retention in the landscape.

XX. Additional national or local specific targets

In cases where additional targets have been set, for each target:

1. Please describe the current target and target date. Please provide information on the background (including the baseline/starting point and reference to existing national and international legislation) and justification for the adoption of the target.
2. Please describe the actions taken (e.g., legal/regulatory, financial/economic, informational/educational and management measures) to reach the target (see also article 6, paragraph 5, of the Protocol).
3. Please assess the progress achieved from the baseline towards meeting the target as well as any challenges encountered.
4. Please describe how the target set under this area contributes to fulfilling global and regional commitments, in particular the 2030 Sustainable Development Agenda.
5. If you have not set a target in this area, please explain why.

National Target No. 10: Raising of public awareness in relation to natural healing waters and natural mineral waters – set in accordance with Art. 6 pt. 2 letter n), Art. 9 and Art. 10 of the Protocol

1. The target has been set in order to meet the ever-increasing public demand on information regarding natural healing waters and natural mineral waters. The information is to be published on national level by the Inspectorate of Spa and Springs (IKŽ) – a specialised organisational body institute by the Ministry of Health of the Slovak Republic (MoH SR).

2. At the webpage of the Ministry of Health of the Slovak Republic, Inspectorate of Spa and Springs (IKŽ) continuously, according to its staff and time capacity, publishes information and data on its activities in order to raise public awareness, for instance on permissions to use natural healing resources or natural mineral waters, on permits to operate natural healing spas and spa treatments, on payments for utilising natural healing resources and natural mineral resources. The online information also lists valid legislation, definitions of basic terminology, competences and scope of the Ministry of Health of the Slovak Republic, as well as of the State Spa Commission, which is established as a first-level administrative body in this section. A list of accredited laboratories authorised to perform analyses of natural healing waters and natural mineral waters are published, as well as information on obligations of resources users, i.e. natural and legal persons licensed by the Ministry of Health of the Slovak Republic to use natural healing resources and natural mineral resources, as well as information on safeguarding professional supervision over usage and protection of natural healing resources and natural mineral resources through a professionally qualified person – a balneotechnician. All of the above-mentioned information is continuously updated.

In 2018 – 2019, due to GDPR, the bookmark Usage Permits was deleted from the part of Health Care / Inspectorate of Spa and Springs of the MoH SR webpage, and a new bookmark was created: Users of Natural Healing Resources and Natural Mineral Resources. From the bookmark Operation Permits, actual copies of the permissions were deleted.

- <https://www.health.gov.sk/?ikz-vyuzivatelia-prirodných-zdrojov>
- <https://www.health.gov.sk/?povolenie-na-prevadzovanie-prirodných-liecebnych-kupelov-a-kupelnych-liecebni>

Updated information on protection zones of the natural medicinal resources and natural mineral resources – and on recognised natural healing and mineral waters, can be found at the following links:

- <https://www.health.gov.sk/?ikz-ochranne-pasma>
- <https://www.health.gov.sk/?ikz-prirodne-zdroje>

3. In connection to the effectivity of Act no. 18/2018 Coll. on the protection of personal data and on amendments of certain laws, through which the Slovak legal system has been harmonised with the Regulation (GDPR), and to its third part the Directive (EU) 2016/680 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data by competent authorities for the purposes of the prevention, investigation, detection or prosecution of criminal offences or the execution of criminal penalties, and on the free movement of such data, and repealing Council Framework Decision 2008/977/JHA has been transposed, a certain amount of the published information had to be evaluated and deleted from the MoH SR webpage, namely the permits to use natural healing resources or natural mineral resources, and the permits to operate natural healing spa and spa treatments. The mentioned information has been substituted by information on users of the natural healing resources and natural mineral resources (structured as follows: location, user, source, capture, current usage, permitted sampling

quantity, water temperature, commercial name – in case of packed natural mineral water) and information on operators of natural healing spas and spa treatments (structured as follows: 1. operator <=> indications and 2. indications <=> operators). For the purpose to efficiently inform the public, the provided content suffices the need.

Also the information on protection zones of natural healing resources and natural mineral resources is continuously updated by providing valid decrees of the Ministry of Health of the Slovak Republic for the following locations: Červený Kláštor (251/2017 Coll.), Kamienka (325/2017 Coll.), Legnava (114/2019 Coll.; 4/2020 Coll.), Martin (3/2020 Coll.), Bardejov (2/2020 Coll.), Piešťany (41/2020 Coll.), as well as on recognised natural healing waters and natural mineral waters (Trenčianske Teplice, borehole SB-4A, year 2021).

IKŽ participates in raising public awareness of natural healing waters and natural mineral waters through participation in lectures, presentations, professional seminars and conferences in the area of water and environment, or it organises such events as their main organizer or co-organiser.

In 2020, namely due to the situation and measures taken as a response to the COVID-19 pandemic, a significant number of seminars and conferences did not take place. The situation remains the same also in 2021.

4. Raising public awareness concerning natural healing waters and natural mineral waters contributes to meeting the global target no. 3 Good Health and Well-Being of the Agenda 2030.

5. Slovak Republic has set 3 targets in this area.

National Target No. 11: Raising of public awareness concerning protection of water and aquatic ecosystems and further educational activities – set in accordance with Art. 6 pt. 2 letter n), Art. 9 and Art. 10 of the Protocol

1. Reason for setting the target is to raise public awareness and to further educational activities in any of the areas concerning the protection and management of water, aquatic ecosystems and seas.

2. Measures taken from August 2018 until present

2.1 IKŽ (Inspectorate of Spa and Springs)

IKŽ co-participates in raising public awareness with regards to natural healing waters and natural mineral waters as it is presented in terms of achieving the National target No. 10.

2.2 Ministry of Environment of the Slovak Republic

a) Making information available to the public

The Slovak Environment Agency (SAŽP) regularly makes information on implementation of EU directives available to the public, more precisely – directives relevant to the area of waters which had been presented by the Slovak Republic to the European Commission. These reports are published through an application at the Enviroportal (<https://www.enviroportal.sk/spravy/spravy-o-zp/spravy-ek/index>).

In 2018 – 2020, the following reports of the Slovak Republic concerning the area of waters were presented to the European Commission and were likewise made available to the public:

- Lists of bathing waters of the Slovak Republic for 2018, 2019 and 2020 bathing seasons
- National programmes of the Slovak Republic for implementation of the Council Directive 91/271/EEC concerning urban wastewater treatment (ref. year 2017 and ref. year 2019)

- Surveys according to Art. 15 of the Council Directive 91/271/EEC on urban wastewater treatment (UWWTD Data Request 2017 and UWWTD Data Request 2019)
- Reports of the Slovak Republic on the quality of bathing water in 2018, 2019, 2020
- Reports on the outcomes of substance monitoring from the first list of monitored substances in the Slovak Republic (Watch List 2018, Watch List 2019, Watch List 2020)
- Report on the progress achieved in implementing of measures entailed in the Water Plan of the Slovak Republic
- Additional monitoring programme and a preliminary programme of measures for newly identified substances according to the Directive 2008/105/EC in the Slovak Republic
- Preliminary flood risk assessment in the Slovak Republic – 2018 update
- Report on the status of implementation of the Council Directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources in the Slovak Republic, 2020

In 2018 – 2020, in order to raise public awareness in the area of water protection, the following updated publications and reports were published at the Enviroportal (<https://www.enviroportal.sk/spravy/kat21>).

- Report on the state of the environment 2019 (<https://www.enviroportal.sk/spravy/detail/10661>)
- Brochure Environment of the Slovak Republic in 2019 – Key Facts (<https://www.enviroportal.sk/spravy/detail/11101>)
- Environment of the Slovak Republic in 2019 in a Nutshell (<https://www.enviroportal.sk/spravy/detail/10421>)

6 key indicators in the area of Water are updated continuously (Usage of Water, Wastewaters, Water Quality in Natural Swimming Pools, Quality of Surface Waters, Quality of Groundwaters, Drinking Water). The indicators are updated annually and made available to the public through the Enviroportal (<https://www.enviroportal.sk/indicator/103?langversion=sk>)

Env¹Dat Database (<https://www.enviroportal.sk/envidat>) is a supporting mechanism for the provision of cross-cutting and comprehensive assessment of the environment on national level for the lay and professional public, as well as for public officials. The database currently entails approximately 277 indicators structured into 14 areas including waters.

b) Conferences, seminars

- International conference EIA/SEA in water management (2018),
- International conference Protection of Water Sources (2019),
- Seminars for employees of the state water administration aimed at legislation amendments in the area of water management (2018, 2019)

c) Media campaign

Informative media campaign “Water, Our Wealth“ namely for elementary and secondary grammar schools students (<https://www.facebook.com/search/top?q=voda%20%20na%C5%A1e%20bohatstvo>).

d) Educational, awareness and other activities

- Ecological Footprint – educational program for schools – there is currently 921 schools enrolled in the program: <https://www.ekostopa.sk/>

- To a Hike with NATURA – a school program aimed at biodiversity mapping: <https://snaturou2000.sk/>
- World Wetlands Day – a lecture, film screening and a discussion on wetlands (approximately 100 students from a Secondary Vocational School of Information Technologies)
- “Green Oasis“ call – a call to decorate the surroundings (participation: 63 kindergartens, elementary schools and inhabitants of villages and towns)
- Film festival and a festival of sustainable development Ekotopfilm – Envirofilm – support of and presentation of film-making tackling the topics of protection of nature and the environment (annual event, due to the COVID-19 pandemic, online in 2020) www.ekotopfilm.sk
- Professional magazine - ENVIROMAGAZÍN – published annually in a 2-month interval: www.enviromagazin.sk
- Activities of the Environmental Educations Centre of the Slovak Environment Agency (SAŽP) Dropie (165 educational and awareness activities in 2018 – 2020: <https://dropie.sazp.sk/>; interactive educational trail: <http://naucnechodniky.eu/naucny-chodnik-pribeh-krajiny/>; revitalisation of 60 small-area wetlands; World Water Day and a Water Festival; Educational tools)

e) Activities specifically focused on environmental pressures (correlating with the National target No. 9)

- Project within the Operational Programme *Quality of Environment – 3INFOAKTIVITY* (educational, informative and awareness activities aimed at the area of environmental pressures with regards to groundwater pollution; there is 200 activities planned until 2023 within the project),
- In 2018 – 2020, two conferences tackling the topic of contaminated sites took place: <http://contaminated-sites.sazp.sk>,
- Seminars on environmental pressures in 2018 and 2019 (190 participants), also a seminar on the mentioned topic as an off-program activity of the ENVIROFILM – EKOTOP film festival,
- Two business meetings (2018, 2019) dedicated to a problem of the Information System of Environmental Pressures for employees of the Slovak Environmental Inspectorate, Ministry of the Environment of the Slovak Republic and for members of the committee on assessment and approval of final reports with a risk analysis of polluted areas (participation: 27 people),
- Workshops on environmental pressures for geological public, intended for a target group of persons with a professional proficiency to perform geological works – a geological survey of the environment, according to Act No. 569/2007 Coll. and a Decree No. 51/2008 Coll. (eight 3-day workshops, more than 450 professionals present),
- Excursions for students, doctoral students and university teachers realised with lectures in environmental studies, geology, as well as in geography and in environmental educational programs chemistry, biology and others,
- Publication of textbooks of lectures from conferences Contaminated Sites (2018, 2019, 2020),
- Processing of an electronic publication *Progress in the Solution of Environmental Pressures in Slovakia – third part currently in progress (Progress in the Solution of Environmental Pressures in Slovakia/3)*,

- Leaflet publication for the public containing basic information on management of environmental pressures; more leaflets with key information for the public are to be published soon,
- Printed version and a version on a USB key of the abridged State Program for Remediation of Environmental Pressures 2016 – 2021 has been published,
- *Methodical Manual for a Geological Survey of the Environment in a Polluted Area is to be published*, which is to support eligible professionals of geological assignments, submitters of geological work and also competent public authorities,
- Environmental education in the area of environmental pressures: ENVIRÓZA (a school program focusing on mapping of selected environmental pressures for the II. degree of elementary schools and secondary grammar schools) with an off-program activity Photopressure (Fotozáťaž): www.enviroza.sk,
- Methodical days – trainings for kindergarten, elementary and secondary grammar school teachers focused on environmental education programs including environmental pressures (altogether, 259 teachers and environmental education workers have been trained):
<https://www.sazp.sk/projekty-eu/infoaktivita/kalendar-udalosti-hap5-environmentalne-zataze/>.

2.3 Public Health Authority of the Slovak Republic and Regional Public Health Authorities of the Slovak Republic

Significantly important means contributing to the spread of information on public health are, among others, the following information systems: Information System on Drinking Water and Information System on Bathing Waters Quality. These information systems enable information sharing among public health bodies, as well as sharing of selected information to the public. Outputs from the systems are used for preparation of statements for other departments of the PHA SR, as well as for other ministries and public bodies, for the public and the media. The outputs are also used in national annual reports and reports for the European Commission.

a) Regularly published information (evaluation reports) at the webpage of the Public Health Authority of the Slovak Republic:

- “*Report on Water Quality Intended for Human Consumption*” – the report concerns a period of 3 consecutive calendar years and is elaborated every 3 years. It is submitted to the European Commission which assesses drinking water quality within the EU. The last report covering years 2017 – 2019 was published and submitted in March 2021:
https://www.uvzsr.sk/index.php?option=com_content&view=category&layout=blog&id=156&Itemid=65
- “*World Water Day 2019 – Analyses Report of the Public Health Authority of the Slovak Republic*” – assessment of analyses results in the indicators Nitrates and Nitrites performed at the Public Health Authority of the Slovak Republic within the World Water Day 2019:
https://www.uvzsr.sk/index.php?option=com_content&view=article&id=3756:svetovy-de-vody-2019-vysledky-analyz-nuvz-sr&catid=158:svetovy-de-vody
- „*Assessment of the World Water Day 2019*” – processing the results of water sample analyses from individual sources in the indicators Nitrates and Nitrites within the Slovak Republic during the World Water Day 2019 and processing of information on performed activities of the PHA SR and all regional PHAs which entails advice and consultation on the health safety of drinking water, placement and protection of

own water resources, the possibility of treating used water from wells for drinking purposes and other issues related to water and its importance for human health: https://www.uvzsr.sk/index.php?option=com_content&view=category&layout=blog&id=158&Itemid=65

- In 2020 and 2021, the activity was not carried out due to unfavorable epidemiological situation caused by the emergence and spread of COVID-19.
- “*Preparedness of Natural Bodies of Water and Artificial Swimming Pools to a Bathing Season*” – the report is published annually before the bathing season begins (it lasts approximately from June 15 – September 15),
- “*Update of the State of Natural and Artificial Swimming Pools during the Bathing Season*” – reports are published on a weekly basis during the bathing season
- “*Report on Monitoring of the Hygienic Situation of Natural Bodies of Water and Artificial Swimming Pools during the Bathing Season*” – the report is published annually after the bathing season ended,
- “*Report of the Slovak Republic on Quality of Waters Intended for Bathing*” – the report is published annually after the bathing season ended, it is submitted to the European Commission which then assesses the situation during a bathing season at locations with the statute of bathing water:
http://www.uvzsr.sk/index.php?option=com_content&view=article&id=2599&Itemid=66

b) Information materials

In order to raise awareness of the public in the area of drinking water, the following information materials have been elaborated:

- For the reason of published disinformation concerning drinking water from public water supplies in the Slovak Republic (published at a portal dealing with information on waters), the Public Health Authority of the Slovak Republic published a „*Statement on the published disinformation concerning the quality of drinking water*“ which contains information on satisfactory quality of drinking water in the Slovak Republic and on its suitability for daily use. The statement also describes the process of water supply and control of the quality of drinking water.
https://www.uvzsr.sk/index.php?option=com_content&view=article&id=4829%3Astanovisko-uvz-sr-knzverejnym-informaciam-onkvalite-pitnej-vody&catid=161%3Ainformane-materialy-pre-verejnos&Itemid=65
- Given the increased interest in visits of locations with no continuous housing and without access to public water supply, the Public Health Authority of the Slovak Republic realised a number of controls of water quality from selected wells which are used for drinking by tourists during their hikes. Results of the water sample analyses were published at the PHA SR webpage under the following name: “*The Public Health Authority of the Slovak Republic controlled and analysed waters from wells in the vicinity of Bratislava*“.
https://www.uvzsr.sk/docs/info/pitna/kontrola_studni_v_okoli_Bratislavy.pdf
- After results of the ISGlobal study were published (Institute for Global Health in Barcelona) regarding results of trihalomethanes in drinking water in European water supply systems and possible health impacts for consumers due to their over-limit presence, it was necessary to publish the following material for the general public: “*Drinking water in the Slovak Republic meets the requirements for trihalomethane content and health safety*“. The material further explains general information on trihalomethanes, but also on their presence in drinking water in the Slovak Republic in such concentrations that do not pose a risk of damage to human health.

https://www.uvzsr.sk/index.php?option=com_content&view=article&id=4010%3Auvz-sr-pitna-voda-na-slovensku-spa-poiadavky-pre-obsah-trihalometanov-anzdravotnu-bezpenos&catid=161%3Ainformane-materialy-pre-verejnos&Itemid=65

- After a successfully organised debate named “*Drinking Water and Health*“ for students of 2 selected elementary schools in spring 2019, a national campaign called „*I like water*“ was organised on the occasion of a World Water Day for students of a second degree of elementary schools. Educational presentations (“*Drinking Water and Health*“, “*Interesting Facts about Water*“), videos on correct hand-washing, campaign logo, knowledge quiz with an answer sheet and a diploma for participants were a part of the campaign.

https://www.uvzsr.sk/index.php?option=com_content&view=article&id=3808%3Auvz-sr-onpitnej-vode-sme-sa-porozpravali-so-iakmi-zakladnej-koly&catid=161%3Ainformane-materialy-pre-verejnos&Itemid=65

- There is an “*Updated list of exceptions for using the water that does not meet indicator limits of drinking water quality*“ regularly published at the PHA SR webpage.

https://www.uvzsr.sk/index.php?option=com_content&view=article&id=3672:aktualny-zoznam-vynimiek-v-slovenskej-republike-na-pouitie-vody-ktora-nesपालि-ukazovateov-kvality-pitnej-vody&catid=157:ostatne

- Based on analyses results from extraordinary water sample collection in connection to information on potential contamination of bathing water as a result of pollution spread from a former factory Istrochem in Bratislava, a paper named “*Information on Bathing Water Quality at the Natural Swimming Pool Zlaté piesky*“ was published (in 2020 and 2021),

https://www.uvzsr.sk/docs/info/kupaliska/PK_ZLATE_PIESKY_ISTROCHEM.pdf

- Through an anonymous online survey, there is a collection and assessment of data on diseases and health problems related to unsatisfactory bathing water quality at natural bodies of water and artificial swimming pools.

https://www.uvzsr.sk/index.php?option=com_content&view=article&id=4393%3Auvz-sr-podete-sa-s-nami-o-vae-skusenosti-pomoe-nam-to-pri-zniovani-zdravotnych-rizik-spojnych-s-kvalitou-vody-na-kupanie&catid=174%3Alanky&Itemid=65
(more information can be found in the activities assessment of the target No. 6).

“*Profile of Water Intended for Bathing*“ is a complex information material for the public. It aims to facilitate understanding of environmental pollution and to assume the development of bathing water quality in a given location. The profiles are published at the PHA SR webpage.

https://www.uvzsr.sk/index.php?option=com_content&view=category&layout=blog&id=168&Itemid=65, as well as at webpages of regional PHA.

Updated information for the public are regularly published at the PHA SR webpage:

- http://www.uvzsr.sk/index.php?option=com_content&view=article&id=2503&Itemid=92
- http://www.uvzsr.sk/index.php?option=com_content&view=article&id=2599&Itemid=66

3. Realisation of information activities contributes to raising environmental awareness, to informing on the necessity of water sources protection, as well as to informing on the importance of available and high-quality water sources for human health.

A number of problems occurred while realising practical activities (such as wetlands revitalisation, planting of biocorridors), stemming from ownership relations of the state to the land and from underestimation of water protection in agricultural landscape. Intense agricultural production remains a priority in the protected zones over protection of the nature.

In connection to realisation of the activities, the COVID-19 pandemic caused a considerable problem which was demonstrated through the limit of person-to-person activities, decreased interaction with target groups, as well as through decreased number of mass events visits.

4. Realisation of the individual measures aimed at informing and raising public awareness in the area of water and health protection contributes to fulfilling Sustainable Development Goals of the Agenda 2030, more precisely of the target no. 3 Good Health and Well-Being, no. 4 Quality Education, no. 6 Clean Water and Sanitation, no. 12 Responsible Consumption and Production, no. 13 Climate Action.

Individual activities also meet a number of goals defined in the EnviroStrategy 2030, e.g.: 2.1 Stopping the loss of biodiversity, 3.2 Protection and restoration of landscape elements on agricultural land, 6.5 Prevention and mitigation of the climate change impacts by protecting ecosystems and their services, 8.3 Water retention in the landscape. The most important point is the contribution to the goal achievement no. 13.2 Heading towards the responsible production, consumption and nature conservation through informal learning and no. 13.3 Improvement of environmental awareness through cultural and natural heritage and tourism.

5. Slovak Republic has set 3 targets in this area.

National target No. 12 – Improving of water resources protection – set in accordance with Art. 4 pt. 2 letter c) of the Protocol

1. Reason for setting the target was the intention to focus on the area of water resources protection. In protected zones, in individual levels of protection, there are restrictions of activities which cannot be carried out there. This way the protection of water resources is also ensured, namely in mountain areas where sources of groundwaters can be found, as well as springs of mineral waters.

2. In 2018, the Ministry of the Environment of the Slovak Republic proposed the Act no. 305/2018 Coll. on protected areas of natural water accumulation and on the amendment of certain laws, which aims to protect not only the Žitný ostrov, but all the ten rarest areas with the largest groundwater reserves in Slovakia. The Ministry of Environment of the SR, the Ministry of Health of the SR and the Ministry of Agriculture and Rural Development of the SR cooperated in preparation of the law based on the existing legal regulations. Act. no. 305/2018 entered into force on 1 January 2019.

Protection of the nature, including wetlands, strengthens the protection of water resources and aquatic ecosystems. Government of the Slovak Republic approved an update of the Wetland Care Program of the Slovak Republic until 2024 and the Action Plan for the Wetlands for 2019 – 2021.

Protection of water-dependent ecosystems is supported, inter alia, by the declaration of selected river areas, either to a national or a European network of protected areas, more information can be found at: <http://www.sopsr.sk/natura/index1.php?p=4&lang=sk>.

Organisation of educational and awareness-raising activities also contributes to raising public awareness in the field of water protection and aquatic ecosystems: educational programs for schools, lectures, discussions, exhibitions, competitions, creative workshops etc., as well as regular events on the occasion of the World Water Day (in 2018, 3 950 participants took part in the event; in 2019, the number of participants exceeded 5 220).

3. Act no. 305/2018 Coll. from 16 October 2018 constitutes protected zones of natural accumulation of waters (hereinafter referred to as “protected water management area“), activities prohibited at the areas, and measures to protect surface waters and groundwaters naturally occurring in a protected water management area. It regulates rights and duties of persons in the field of water protection and water conditions, the competence of state administration bodies and municipalities in a protected water management area, and the accountability for breaching the duties stipulated in the Act.

For the protection of groundwaters and surface waters, measures are set in a document Danube River Basin Management Plan, Vistula River Basin Management Plan (Water Plan of the Slovak Republic). Action Plan for Wetlands for 2019 – 2021 will be assessed at the end of 2021.

Difficulties with educational and awareness-raising activities occurred due to pandemic measures in 2020 and 2021, the activities were therefore carried out through web pages.

4. By strengthening the protection of water resources, achievement of Sustainable Development Goals of the Agenda 2030 is supported significantly, namely no. 6 Clean Water and Sanitation, but also no. 3 Good Health and Well-Being and no. 13 Climate Action.

Strengthening the protection of water resources is part of water and nature protection in line with national interests of the country, as well as in accordance with commitments of the Slovak Republic resulting from membership in the EU and in many other international conventions, in the field of waters namely the Convention on cooperation for the protection and sustainable use of the river Danube and the UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes.

5. Slovak Republic has set 3 targets in this area.

Part three

Common indicators¹

I. Quality of the drinking water supplied

1. Context of the data

1. What is the population coverage (in millions or per cent of total national population) of the water supplies reported under sections 2 and 3 below?

The rationale of this question is to understand the population coverage of the water quality data reported under sections 2 and 3 below.

Please describe the type of water supplies for which data is included in the following tables, and the population share covered by these supplies.

Please also clarify the source of the water quality data provided (e.g., data from regulatory authorities).

In 2020, Slovak Republic had 5.460 mil. inhabitants. Public water supply systems supply 89.81 % (4.904 mil. inhabitants). In 2020, the number of municipalities with public water supply system was 2 433, which represents 84.19 % of municipalities. Provided data are official data from Statistical Authority and Water research Institute.

¹ In order to allow an analysis of trends for all Parties under the Protocol, please use wherever possible 2005 — the year of entry into force of the Protocol — as the baseline year.

2. Please specify from where the water quality samples reported in sections 2 and 3 below are primarily taken (e.g., treatment plant outlet, distribution system or point of consumption).

The rationale of this question is to understand where the samples were primarily taken from for the water quality data reported in sections 2 and 3 below.

Data reported in sections 2 and 3 below were taken from water tap (point of consumption) by Regional Public Health Authorities.

The owners of public water systems or their operators ensure raw water quality control at source and water quality control in the distribution network. Water companies, municipalities or other legal bodies and persons can operate public water systems if they have license for public water system of appropriate category. In case of identification of exceeded limit values of parameters that are defined by limit or highest acceptable limit value the operator is obliged to inform immediately the corresponding Regional Public Health Authority. The extent number and frequency of water quality control depends on the volume of supplied water and number of supplied inhabitants.

Drinking water quality in Slovak Republic is monitored by Public Health Authority of the Slovak Republic and 36 Regional Public Health Authorities in their competency in the framework of performance of state health surveillance. Drinking water quality is monitored in the spot of end user, as a part of specialised roles of public health bodies.

3. In sections 2 and 3 below, the standards for compliance assessment signify the national standards. If national standards for reported parameters deviate from the World Health Organization (WHO) guideline values, please provide information on the standard values.

The rationale of this question is to understand any possible differences between the national standards for microbiological and chemical water quality parameters and the respective WHO guideline values.²

The Slovak Republic transposed and implemented all relevant European Directives on water. Requirements for drinking water quality, applicable to all European Union member states, are given by Drinking Water Directive (2015/1787 amending DWD 98/83/EC).

Ministry of Health Decree no. 247/2017 contains more than 20 additional drinking water quality parameters. In addition to the requirement for drinking water sampling accreditation, scientific and technical expertise in the field of drinking water is incorporated into the legislation, resulting in a revision and adjustment of quality standards. Two new indicators have been introduced into the scope of quality control to verify the development of disinfection by-products (chlorates and haloacetic acid). On the basis of the epidemiological situation and local conditions, it is also possible to include other indicators beyond the set criteria for the monitoring of the quality of DW, for which the Public health Authority of the Slovak Republic can set limit values. For each drinking water supplier, an obligation to create and update a Monitoring Program is required.

In January 2021, a 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) came into force. The requirements of the DWD, which we are currently implementing in our national regulations, have required the amendment of several laws and decrees, which will enter into force in 2022.

² The latest edition of the WHO *Guidelines for Drinking-water Quality* is available at: http://www.who.int/water_sanitation_health/publications/dwq-guidelines-4/en/.

2. Bacteriological quality

4. Please indicate the percentage of samples that fail to meet the national standard for *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.

If possible, please provide segregated data for urban and rural areas in the table below. If this is not possible, please consider reporting by alternative categories available in your country, for example by “non-centralized versus centralized” water supplies or by population number-based categories. If you do so, please indicate the reported categories by renaming the rows in the column “area/category” in the table below accordingly.

If data can be reported neither for urban and rural areas nor for alternative categories, please report total (national) values only.

Please comment on the trends or provide any other important information supporting interpretation of the data.

All national data regarding drinking water quality are based on evidences that don't select urban and rural population. Reported data content urban and rural population together. Areas of drinking water supply are divided into:

a) big areas : 5000-50 000 inhabitants and more than 50 000 inhabitants,

b) small areas: population: 50-500; 500–2 000; 2 000–5 000.

<i>Parameter</i>	<i>Area/category</i>	<i>Baseline value (2005)</i>	<i>Value reported in the previous reporting cycle (2018)</i>	<i>Current value (2021)</i>
<i>E. coli</i>	Total	2,62 %	1,96 %	2,46 %
<i>(limit value = 0 CFU/100ml)</i>	Urban			
	Rural			
Additional parameter 1: Enterococci	Total	3,52 %	2,13 %	2,74 %
<i>(limit value = 0 CFU/100ml)</i>	Urban			
	Rural			
Additional parameter 2: Coliform bacteria	Total	No data	5,36 %	4,72 %
<i>(limit value = 0 CFU/100ml)</i>	Urban			
	Rural			
Additional parameter 3: <i>Clostridium perfringens</i> including spores	Total	No data	1,38 %	1,39 %
	Urban			
	Rural			

<i>Parameter</i>	<i>Area/category</i>	<i>Baseline value (2005)</i>	<i>Value reported in the previous reporting cycle (2018)</i>	<i>Current value (2021)</i>
<i>(limit value = 0 CFU/100ml)</i>				

3. Chemical quality

5. Please report on the percentage of samples that fail to meet the national standard for chemical water quality with regard to the following parameters:

- (a) Arsenic;
- (b) Fluoride;
- (c) Lead
- (d) Nitrate.

6. Please also identify up to three additional chemical parameters that are of priority in the national or local context.

If possible, please provide segregated data for urban and rural areas in the table below. If this is not possible, please consider reporting by alternative categories available in your country, for example by “non-centralized versus centralized” sanitation systems or by population number-based categories. If you do so, please indicate the reported categories by renaming the rows in the column “area/category” in the table below accordingly.

If data can be reported neither for urban and rural areas nor for alternative categories, please report total (national) values only.

Please comment on the trends or provide any other important information supporting interpretation of the data.

All national data regarding drinking water quality are based on evidences that don't select urban and rural population. Reported data content urban and rural population together. Areas of drinking water supply are divided into:

- a) big areas : 5000-50 000 inhabitants and more than 50 000 inhabitants,
- b) small areas: population: 50-500; 500–2 000; 2 000–5 000.

<i>Parameter</i>	<i>Area/category</i>	<i>Baseline value (2005)</i>	<i>Value reported in the previous reporting cycle (2018)</i>	<i>Current value (2021)</i>
Arsenic <i>(limit value = 10 µg/l)</i>	Total	3,2 %	1,16 %	0,64 %
	Urban			
	Rural			
Fluoride	Total	0,14 %	0 %	0,12 %

<i>Parameter</i>	<i>Area/category</i>	<i>Baseline value (2005)</i>	<i>Value reported in the previous reporting cycle (2018)</i>	<i>Current value (2021)</i>
<i>(limit value = 1,5mg/l)</i>	Urban			
	Rural			
Lead	Total	0,35 %	0,33 %	0,86 %
<i>(limit value = 10 µg/l)</i>	Urban			
	Rural			
Nitrate	Total	1,2 %	0,19 %	0,26 %
<i>(limit value = 50mg/l)</i>	Urban			
	Rural			
Additional parameter 1: Iron	Total	No data	2,86 %	3,77 %
<i>(limit value = 0,2 mg/l)</i>	Urban			
	Rural			
Additional parameter 2: Manganese	Total	No data	1,54 %	1,62 %
<i>(limit value = 50 µg/l)</i>	Urban			
	Rural			

<i>Parameter</i>	<i>Area/category</i>	<i>Baseline value (2005)</i>	<i>Value reported in the previous reporting cycle (2018)</i>	<i>Current value (2021)</i>
Additional parameter 3: Nitrite (limit value = 0,5mg/l)	Total	No data	0,06 %	0,02 %
	Urban			
	Rural			

II. Outbreaks and incidence of infectious diseases related to water

In filling out the below table, please consider the following points:

(a) *For reporting outbreaks, please report confirmed water-related outbreaks only (i.e., for which there is epidemiological or microbiological evidence for water to have facilitated infection);*

(b) *For reporting incidents, please report the numbers related to all exposure routes. In your response:*

(i) *Please report cases per 100,000 population;*

(ii) *Please differentiate between zero incidents (0) and no data available (-).*

Please extend the list of water-related diseases, to the extent possible, to cover other relevant pathogens (e.g., enteric viruses, Giardia intestinalis, Vibrio cholerae).

Please indicate how the information is collected (e.g., event-based or incidence-based surveillance).

Please comment on the trends or provide any other important information supporting interpretation of the data.

<i>Disease</i>	<i>Incidence rate per 100,000 population (all exposure routes)</i>			<i>Number of outbreaks (confirmed water-borne outbreaks)</i>		
	<i>Baseline value</i>	<i>Value reported in the previous reporting cycle</i>	<i>Current value</i>	<i>Baseline</i>	<i>Value reported in the previous reporting cycle</i>	<i>Current value</i>
Shigellosis	2018	396	2021	2018	2	2021
Enterohaemorrhagic <i>E. coli</i> infection	2018	10	2021	2018	-	2021
Typhoid fever	2018	0	2021	2018	0	2021
Viral hepatitis A	2018	188	2021	2018	2	2021
Legionellosis	2018	286	2021	2018	6	2021
Cryptosporiosis	2018	2	2021	2018	-	2021

Additional disease 1: Tularemia	2018	0	2021	2018	0	2021
Additional disease 2: Leptospirosis	2018	12	2021	2018	2	2021
Additional disease 3:						

III. Access to drinking water

If possible, please provide segregated data for urban and rural areas in the table below. If this is not possible, please consider reporting by alternative categories available in your country, for example by “non-centralized versus centralized” water supply systems or by population number-based categories. If you do so, please indicate the reported categories by renaming the rows in the table below accordingly.

If data can be reported neither for urban and rural areas nor for alternative categories, please report total (national) values only.

Please comment on the trends or provide any other important information supporting interpretation of the data with regard to access to drinking water.

<i>Percentage of population with access to drinking water</i>	<i>Baseline value (2005)</i>	<i>Value reported in the previous reporting cycle (2017)</i>	<i>Current value (2020)</i>
Total	85.3 % (4.594 mil. Inhabitans)	88,9 % (4.836 mil. Inhabitans)	89,81 % (4.904 mil. Inhabitans)
Urban	<i>Evidence doesn't select urban and rural population extra.</i>		
Rural			

Estimates provided by the WHO/United Nations Children’s Fund (UNICEF) Joint Monitoring Programme (JMP) for Water Supply and Sanitation. *JMP definitions are available at <http://www.wssinfo.org/definitions-methods/watsan-categories>.*

National estimates. *Please specify how “access” is defined and what types of drinking-water supplies are considered in the estimates in your country.*

In particular, please specify if the above percentage on “access to drinking water” refers to access to (tick all applicable):

- Improved drinking water sources (as per JMP definition)
- Supplies located on premises
- Supplies available when needed
- Supplies that provide drinking water free from faecal contamination

National data are long period collected in database and published in annual report "Report and on the state of the environment in 2020". For individual municipalities, the data are given in the Plan for Development of Public Water Supply and Sewerage Systems, which is updated every 6 years.

Definition of drinking water public supply in the Slovak Republic: minimum 50 inhabitants or 10 m³ water/day.

In the sense of WHO/UNICEF definition all inhabitants of the Slovak Republic have access to safe drinking water resources. Rest of inhabitants are used their own wells for supply drinking water.

IV. Access to sanitation

If possible, please provide segregated data for urban and rural areas in the table below. If this is not possible, please consider reporting by alternative categories available in your country, for example by "non-centralized versus centralized" sanitation systems or by population number-based categories. If you do so, please indicate the reported categories by renaming the rows in the table below accordingly.

If data can be reported neither for urban and rural areas nor for alternative categories, please report total (national) values only.

Please comment on the trends or provide any other important information supporting interpretation of the data with regard to access to sanitation.

<i>Percentage of population with access to sanitation</i>	<i>Baseline value (2005)</i>	<i>Value reported in the previous reporting cycle (2017)</i>	<i>Current value (2020)</i>
Total	57,09 % (3.0755 mil. Inhabitans)	67,72% (3.6822 mil. Inhabitans)	69,69% (3.8051 mil. Inhabitans)
Urban	Evidence doesn't select urban and rural population extra.		
Rural			

- Estimates provided by JMP. *JMP definitions are available at <http://www.wssinfo.org/definitions-methods/watsan-categories>.*
- National estimates. *Please specify how "access" is defined and what types of sanitation facilities are considered in the estimates in your country.*

In particular, please specify if the above percentage on "access to sanitation" refers to access to (tick all applicable):

- Improved sanitation facilities (as per JMP definition)
- Facilities not shared with other households
- Facilities from which excreta is safely disposed in situ or treated off site

National data are long period collected in database and published in annual report „Water Management in the Slovak Republic“. Sanitation is performed in harmony with EU

legislative – the Council Directive 91/271/EEC of 21 May 1991 concerning urban waste water treatment (Directive 91/271/EEC).

V. Effectiveness of management, protection and use of freshwater resources

1. Water quality

1. On the basis of national systems of water classification, please indicate the percentage of water bodies or the percentage of the volume (preferably) of water³ falling under each defined class (e.g., for European Union countries and other countries following the European Union Water Framework Directive⁴ classification, the percentage of surface waters of high, good, moderate, poor and bad ecological status, and the percentage of groundwaters/surface waters of good or poor chemical status; for other countries, in classes I, II, III, etc.).

(a) For European Union countries and other countries following the European Union Water Framework Directive classification

(i) Ecological status of surface water bodies

<i>Percentage of surface water classified as:</i>	<i>Baseline value (2007-2008) Water Plan of Slovakia 2009</i>	<i>Value reported in the previous reporting cycle (2009-2012) Water Plan of Slovakia 2015</i>	<i>Current value (2013-2018) Water Plan of Slovakia 2021</i>
High status	27.67	3.64	2.22
Good status	36.08	52.65	39.08
Moderate status	32.90	34.77	49.44
Poor status	2.95	8.28	7.55
Bad status	0.40	0.66	1.7
Total number/volume of water bodies classified	1760	1510	1351
Total number/volume of water bodies in the country	1760	1510	1351

**Results of chemical status assessment without ubiquitous substances*

(ii) Chemical status of surface water bodies

<i>Percentage of surface water bodies classified as</i>	<i>Baseline value (2009)</i>	<i>Value reported in the previous reporting cycle (2015)</i>	<i>Current value (2021)</i>
Good status	95.06	97.55	71,28 (*97.63)

³ Please specify.

⁴ 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.

<i>Percentage of surface water bodies classified as</i>	<i>Baseline value (2009)</i>	<i>Value reported in the previous reporting cycle (2015)</i>	<i>Current value (2021)</i>
Poor status	4.94	2.45	28.72 (*2.37)
Total number/volume of water bodies classified	1760	1510	1351
Total number/volume of water bodies in the country	1760	1510	1351

(iii) *Status of groundwaters*

<i>Percentage of groundwaters classified as</i>	<i>Baseline value (2007-2008)</i>	<i>Value reported in the previous reporting cycle (2009-2012)</i>	<i>Current value (2020)</i>
Good quantitative status	93.3	96.0	90.6
Good chemical status	82.7	85.3	86.7
Poor quantitative status	6.7	4.0	9.4
Poor chemical status	17.3	14.7	13.3
Total number/volume of groundwater bodies classified	75	75 106	
Total number/volume of groundwater bodies in the country	102	101 106	

Information in detail available in 1st Slovak Water Management Plan (2009), 2nd Slovak Water Management Plan (2015) and 3rd Slovak Water Management Plan (2021).

(b) For other countries

(i) *Status of surface waters*

<i>Percentage of surface water falling under class^a</i>	<i>Baseline value (specify year)</i>	<i>Value reported in the previous reporting cycle (specify year)</i>	<i>Current value (specify year)</i>
I			
II			
III			
IV			
V			
Total number/volume of water bodies classified			
Total number/volume of water bodies in the country			

^a Rename and modify the number of rows to reflect the national classification system.

(ii) *Status of groundwaters*

	<i>Baseline value (specify year)</i>	<i>Value reported in the previous reporting cycle (specify year)</i>	<i>Current value (specify year)</i>
<i>Percentage of groundwaters falling under class^a</i>			
I			
II			
III			
IV			
V			
Total number/volume of groundwater bodies classified			
Total number/volume of groundwater bodies in the country			

^a Rename and modify the number of rows to reflect the national classification system.

2. Please provide any other information that will help put into context and aid understanding of the information provided above (e.g., coverage of information provided if not related to all water resources, how the quality of waters affects human health).

2. Water use

3. Please provide information on the water exploitation index at the national and river basin levels for each sector (agriculture, industry, domestic), i.e., the mean annual abstraction of freshwater by sector divided by the mean annual total renewable freshwater resource at the country level, expressed in percentage terms.

	<i>Baseline value (specify year)</i>	<i>Value reported in the previous reporting cycle (specify year)</i>	<i>Current value (specify year)</i>
<i>Water exploitation index</i>			
Agriculture			
Industry ^a			
Domestic use ^b			

^a Please specify whether the figure includes both water abstraction for manufacturing industry and for energy cooling.

^b Please specify whether the figure only refers to public water supply systems or also to individual supply systems (e.g., wells).

Part four

Water-related disease surveillance and response systems

1. In accordance with the provisions of article 8 of the Protocol:

Has your country established comprehensive water-related disease surveillance and early warning systems according to paragraph 1 (a)?

YES NO IN PROGRESS

Has your country prepared comprehensive national or local contingency plans for responses to outbreaks and incidents of water-related disease according to paragraph 1 (b)?

YES NO IN PROGRESS

Do relevant public authorities have the necessary capacity to respond to such outbreaks, incidents or risks in accordance with the relevant contingency plan according to paragraph 1 (c)?

YES NO IN PROGRESS

2. If yes or in progress, please provide summary information about key elements of the water-related disease surveillance and outbreak response systems (e.g., identification of water-related disease outbreaks and incidents, notification, communication to the public, data management and reporting). Please also provide reference to existing national legislation and/or regulations addressing water-related disease surveillance and outbreak response.

We act in accordance with the Act. No.355/2007 Coll. on the protection, promotion and development of public health and amending and supplementing certain acts pursuant to Section 12 (measures to prevent diseases). These are measures to prevent the emergence and spread of communicable diseases, measures to prevent the introduction of communicable diseases, report communicable diseases and suspected serious or rapidly spreading diseases, take samples of biological material from humans and samples of drinking water and bathing water, including sampling food, isolation in the home or in a health care facility, increased health surveillance, medical supervision, quarantine measures, prohibition of the use of water as drinking water, which does not meet the limits of drinking water.

3. Please describe what actions have been taken in your country in the past three years to improve and/or sustain water-related disease surveillance, early warning systems and contingency plans, as well as to strengthen the capacity of public authorities to respond to water-related disease outbreaks and incidents, in accordance with the provisions of article 8 of the Protocol.

Monitoring surveillance of communicable diseases is ongoing throughout their surveillance.

Part five

Progress achieved in implementing other articles of the Protocol

Please provide a short description of the status of implementation of articles 9 to 14 of the Protocol, as relevant.

Suggested length: up to two pages

Article 9:

Government departments of of the Ministry of Health of the Slovak Republic (MoH SR) and Ministry of Environment of the Slovak Republic (MoE SR) are cooperating in harmony with requirements of the Article 9 of the Protocol.

Article 10:

Ministry of Health of the Slovak Republic – documents, brochures and information are public available on web pages MoH SR and web pages of the Public health Authority and Regional Public Health Authorities. In addition, many publications are distributed in printed form.

Ministry of Environment of the Slovak Republic – documents, brochures and information elaborated in both government departments (MoH SR, MoE SR) are public available on their web pages and web pages of their branch institutions e.g in branch of the MoE SR there are web pages of the Water Research Institute, Slovak Hydrometeorological Institute, Slovak Water Management Enterprise, Slovak Environmental Agency. In addition, many publications are distributed in printed form.

Citizens who are interested

Citizens who are interested to obtain some another information, outputs etc. contact relevant departments of ministries by e-mail, letters etc.

Article 11:

Ministry of Environment of the Slovak Republic is involved in long-term international co-operation as follows:

- a) bilateral co-operation on transboundary waters with neighbouring countries under the umbrella of the commissions for co-operation on transboundary waters. Activities cover all relevant aspects of transboundary co-operation, including quality/status and quantity of water;
- b) co-operation in the International Commission for the Protection of the Danube River;
- c) EU Strategy for Danube region;
- d) in the structures of the European Union, special in the Common implementation Strategy for the Water Framework Directive (2000/60/EC) and the Floods Directive (2007/60/EC), in work programmes approved for 3 years.

All these activities are focused on protection and improvement of water quality/status and quantity and water management, mostly implement requirements of the EU directives. Fulfilment of their objectives supports also targets of the Protocol.

Since 2017 branch of the Ministry of Environment of the Slovak Republic (Slovak Hydrometeorological Institute) has started support and co-operation with International Water Assessment Centre (IWAC) in Kazakhstan.

Article 12:

Ministry of Environment of the Slovak Republic co-ordinates activities with another Parties in harmony with Article 12 of the Protocol. Such key long-term activities are mentioned in text related to Article 11, points a),b),c),d) of this Part Five.

Article 13:

Ministry of Environment of the Slovak Republic has incorporated these requirements into bilateral agreements with neighbouring countries concerning co-operation on transboundary waters (part of water protection and management). There exists exchange of information about water management (water quality/status, quantity, measures taken, maintenance of river bed and banks...), warning and forecast systems, planning of structures, projects, co-ordination of some others activities, etc.

Article 14:

Ministry of Environment of the Slovak Republic and Ministry of health of the Slovak Republic are involved into all activities related to its responsibility, as published in article 14 of the Protocol.

Part six

Thematic part linked to priority areas of work under the Protocol

1. Water, sanitation and hygiene in institutional settings

1. In the table below, please provide information on the proportion of schools (primary and secondary) and health-care facilities that provide basic water, sanitation and hygiene (WASH) services.

Basic services refer to the following:

(a) *Basic sanitation service: Improved facilities (according to JMP definition), which are sex-separated and usable at the school or health-care facility;*

(b) *Basic drinking water service: Water from an improved source (according to JMP definition) is available at the school or health-care facility;*

(c) *Basic hygiene service: Handwashing facility with water and soap available to students (schools) or patients and health-care providers (health-care facilities).*

If the above definitions/categories do not apply in your country, please report for alternative categories for which data are available. In this case, please indicate the reported categories by renaming the rows in the table below accordingly.

Please indicate the source of data. If data is not available, please put (-).

<i>Institutional setting</i>	<i>Current value (specify year)</i>
<i>Schools</i>	
Basic sanitation service	
Basic drinking-water service	
Basic hygiene service	
<i>Health-care facilities</i>	
Basic sanitation service	
Basic drinking-water service	
Basic hygiene service	

2. Has the situation of WASH in schools been assessed in your country?

YES NO IN PROGRESS

3. Has the situation of WASH in health-care facilities been assessed in your country?

YES NO IN PROGRESS

4. Do approved policies or programmes include actions (please tick all that apply):

To improve WASH in schools

To improve WASH in health-care facilities

5. If yes, please provide reference to main relevant national policy(ies) or programme(s).

2. Safe management of drinking-water supply

6. Is there a national policy or regulation in your country, which requires implementation of risk-based management, such as WHO water safety plans (WSPs), in drinking water supply?

YES NO IN PROGRESS

The drinking Water Directive proposal (EÚ) 2020/2184 is currently being implemented in Slovak law

7. If yes, please provide reference to relevant national policy(ies) or regulatory documentation.

8. In the table below, please provide information on the percentage of the population serviced with drinking-water under a WSP.

Please indicate the source of data. If data is not available, please put (-).

<i>Percentage of population</i>	<i>Current value (specify year)</i>
Total	

3. Equitable access to water and sanitation

9. Has the equity of access to safe drinking-water and sanitation been assessed?

YES NO IN PROGRESS

10. Do national policies or programmes include actions to improve equitable access to water and sanitation (please tick all that apply):

- To reduce geographical disparities
- To ensure access for vulnerable and marginalized groups
- To keep water and sanitation affordable for all

11. If yes, please provide reference to main relevant national policy(ies) and programme(s).

In Slovak Republic, it is an obligation for every oprator to ensure equitable access to water and sanitation, otherwise the state authorities would not allow to operate such a facilities. There are no further data available to comply theses requirements during operation so far.

Part seven

Information on the person submitting the report

The following report is submitted on behalf of the Slovak Republic in accordance with article 7 of the Protocol on Water and Health.

Health sector

Name of officer responsible for submitting the national report: Ing. Klára Paganová
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Telephone number: +421 2 49 284 383
Name and address of national authority: Public Health Authority of the Slovak Republic
Trnavská cesta 52
826 45 Bratislava
Slovak Republic

Signature: 

Date: 19.4.2022

Environmental sector

Name of officer responsible for submitting the national report: Ing. Dagmar Koláriková
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Telephone number: +421 2 59 806 231
Name and address of national authority: Ministry of Environment of the Slovak Republic
Námestie Ľudovíta Štúra 35/1
812 35 Bratislava
Slovak Republic

Signature: 

Date: 19.4.2022

Submission

1. Parties are required to submit their summary reports to the joint secretariat, using the present template and in accordance with the adopted guidelines on reporting, 210 days before the next session of the Meeting of the Parties. Submission of the reports ahead of this deadline is encouraged, as this will facilitate the preparation of analyses and syntheses to be made available to the Meeting of the Parties.
2. Parties are requested to submit, to the two addresses below, an original signed copy by post and an electronic copy by e-mail. Electronic copies should be available in word-processing software.

Joint Secretariat to the Protocol on Water and Health

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1211 Geneva 10
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