

Summary report of Hungary under the Protocol on Water and Health

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 Three.

YES NO IN PROGRESS

If targets have been revised, please provide details here.

Hungary ratified the Protocol in 2001. The Protocol was published in the official journal in 2005 (Government Decree 213/2005 (X.5.), http://njt.hu/cgi_bin/njt_doc.cgi?docid=96061.135522). Targets were set in 2008, with target dates (where specified) between 2010-2015. In 2010, the targets were revised as part of the reporting process, and amended in the areas where initially targets were not formulated precisely, or target dates were not defined.

By the current reporting cycle, most target dates have expired. The current reporting exercise was launched through a meeting of the Special Committee on Water and Health. The experts (both governmental and non-governmental) involved in the reporting process were also asked to identify problem areas and potential targets belonging to their area of expertise. The current suggestions will be discussed in the upcoming meeting of the Special Committee, then the draft targets will be forwarded to the Government for approval.

2. Were they 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.

The targets were published on the dedicated website of the Special Committee on Water and Health (<http://viz.wesper.hu>). They were submitted electronically to the UNECE Secretariat.

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.

The Government Decree 213/2005 (X.5.) on the ratification the Protocol appointed the ministers responsible for health and environment to lead the national implementation. Implementation of the Protocol began in 2007, coordinated by the Minister of Health and the Minister of Environment and Water. In the current government structure, the areas covered by the Protocol are shared - on the national level - between the Minister of Human Resources, the Minister of Interior, the Minister of Prime Minister's Office the Minister of National Development, and the Minister of Agriculture. The ministers act through the ministries (setting

the legal framework, legislation) and their national/ regional institutional system (implementation). The health related aspects of the Protocol on the national level belong to the Ministry of Human Resources and its background institutions, the National Public Health Centre and the National Centre of Epidemiology. On a local level, health related tasks belong to the local public health authorities, which were previously (until 2010) also under the direction of the Ministry of Human Resources (and its predecessors). After the governmental reorganization, the regional infrastructure was integrated into the county government offices.

The water related task (the coordination of operative water management tasks, the flood control and the inland water control) that belongs to the Ministry of Interior broadened in 2014 with water quality protection, which previously belonged to the Ministry of Rural Development.

The network of Disaster Management Inspectorates consisting of one national and twelve regional offices under the Ministry of Interior acts as the water authority on the local scale. The Inspectorates carry out the authorization and official supervision of protection of water as an environmental element. The water related monitoring tasks are executed by the network of laboratories of the government offices under the Prime Minister's Office.

Due to the above detailed complex and joint responsibilities in water and health, it was indispensable to establish an intersectorial body, mandated to coordinate the implementation of the Protocol on the operational level. The Special Committee on Water and Health was established under the Public Health Interministerial Committee in 2007. The Special Committee originally involved representatives of the Ministry of Health, Ministry of Environment and Water, Ministry of Local Governments, Ministry of Agriculture and Rural Development, local public health offices and non-government organizations, such as the Hungarian Waterworks Association and the Hungarian Pool and Spa Association. The main leading role traditionally lies with the health sector; the Special Committee is chaired by the National Public Health Centre. Under the current government structure, it includes experts from the following government organizations: Ministry of Human Resources, State Secretariat of Health; Ministry of Interior, Department of Water Management and Department of Water Utilities; Ministry of Agriculture (responsible for environment protection). Since 2012, there are new actors in the water sector: water utility investments are coordinated by the Ministry of National Development, while the financial regulation lies with the Hungarian Energy and Public Utility Regulatory Authority.

4. Which existing national and international strategies and legislation were taken into account?

Please briefly mention the most relevant national and international strategies and instruments that were taken into account when setting targets (only a limited number of references are required under this question; indicatively, five references are considered appropriate, but the number will depend on your national situation).

The ratification of the Protocol overlapped in time with the accession of Hungary to the European Union. Many of the targets set are therefore in line with the obligations under the *acquis communautaire*. The key legislative elements of relating to water and health are the water framework directive (2000/60/EC), the drinking water directive (98/83/EC), the bathing water directive (2006/7/EC) and the urban wastewater directive (91/271/EEC). These obligations initiated major national operative programmes assisting the implementation of the legal requirement, but at the same time forwarding targets under the Protocol. Apart from EU

obligations, two national programmes provided a framework for target setting in the respective areas. The National Environmental Health Action Programme was the umbrella of development in various aspects of environmental health including air quality, drinking and bathing water quality. The National Environmental Remediation Programme was a national scale initiative for the identification, prioritization and remediation of contaminated (mainly industrial) sites.

In the on-going revision process, the following national strategies are taken additionally into account:

- 2nd National Climate Change Strategy
- Kvassay Jenő Plan (National Water Strategy)
- 2nd River Basin Management Plan (RBMP2)
- Outcomes of the assessment of equitable access to water and sanitation

5. Was cost-benefit analysis of targets set performed, and if so how?

Alternatively, please explain to what extent financial implications were taken into account when setting targets.

Cost-benefit analysis was not part of the target setting process. However, the availability of resources for the implementation of targets was taken into account when defining targets under a given target area. The European Union secured funds for meeting the obligations under the EU legislation after the accession. The major infrastructural developments (i.e. the Drinking Water Quality Improvement Programme, the National Wastewater Collection and Treatment Implementation Programme, River Basin Management Planning (the latter is an obligation under the Water Framework Directive, and requires detailed financial and cost-benefit analysis in the environmental target setting process)) were financed by national operative programmes using mainly EU funds. The National Environmental Health Action Plan and the National Environmental Remediation Programme had dedicated national funding. In other target areas, where resources for implementation were not foreseen to become available, targets were set accordingly. Targets in these areas were less ambitious or involved mainly legislative or data acquisition tools.

6. 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?

Hungary – in addition to its obligation under the Protocol – is committed to ensuring public participation, being party to various international treaties, such as the Aarhus Convention and of the treaties establishing the European Union. In the target setting process, the public involvement was mostly through professional associations, such as the Hungarian Water Utility Association and the Hungarian Pool and Spa Association. These organizations have internal information on the challenges and deficiencies of the sector, thus their involvement in defining targets and the potential means of improvements is indispensable. Non-government organizations (e.g. human rights or environmental protection societies) also provided a complementary viewpoint.

The general public is rather expected to seek information than to provide input for the target setting process. Information on water and health related topics is available from the website of various ministries and their background institutions. The strategies listed in point 5. were prepared with wide public and stakeholder involvement.

Both drinking water quality and bathing water quality information is published on the website of the National Public Health Centre (okk.antsz.hu) as searchable maps. Supporting information (such as bathing water profiles, explanation on drinking water quality parameters, etc.) is also available.

7. Provide information on the process by which this report has been prepared, including information on which public authorities had the main responsibilities, which other stakeholders were involved, etc.

The report request from the Secretariat was sent to the Ministry of Interior, Ministry of Agriculture and the Ministry of Human Resources. The Special Committee was notified and met to discuss the reporting process. The coordination was assigned – in accordance with the previous practice – to the National Public Health Centre. The Special Committee at its meeting identified the responsible body for each section of the report. Subsequently written data request was sent by the Chief Medical Officer to the involved ministries and other organizations:

Ministry of Interior

Ministry of Agriculture

Hungarian Energy and Public Utility Regulatory Authority

National Centre for Epidemiology

Hungarian Water Utility Association

The organizations mainly relied on previously compiled and analysed data, such as for example:

- Drinking water quality reports from the water utilities companies and public health offices
- Bathing water quality reports from the laboratories
- Surface and subsurface quality data from the Water Directorates
- Water use data from yearly statistical reports
- Communicable disease reports.

If data was not available, it was requested from the responsible organizations. Contributions were sent to the National Public Health Centre for the compilation of the report. The report was submitted through the Ministry of Human Resources for Government approval.

All stakeholders providing data for the report were also invited to give suggestions for priorities or potential future targets in their area of expertise. The proposals will be summarized and presented to the Special Committee at its next meeting for further development. Recommendations and priorities of the recently developed national strategies will be also used for the revision of targets and target dates under the Protocol.

8. Report any particular circumstances that are relevant for understanding the report, e.g., whether there is a federal and/or decentralized decision-making structure, or whether financial constraints are a significant obstacle to implementation (if applicable).

The regulation and control of the water sector is fall within the competencies of various ministries and institutions and was subject to several reorganizations in the past years. During the preparation of the report, the latest reorganization was still ongoing, affecting several data

providers. This was a challenge not only in the preparation of the report, but also in the coordination of the implementation.

9. Please describe whether and, if so, how emerging issues relevant to water and health (e.g., climate change) were taken into account in the process of target setting.

Hungary is highly vulnerable to climate change. Therefore a national target area was dedicated to water management in climate change adaptation (see Part III, Section XXI).

Part Two

Common indicators¹

I. Quality of the drinking water supplied

A. 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 this indicator?

The rationale of this question is to understand the population coverage of the water quality data reported under sections B and C 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).

Drinking water quality and monitoring in Hungary is regulated by Government Decree 201/2001. (X. 25.), implementing the EU Drinking Water Directive (98/83/EC, DWD). The Decree requires all water supplies to perform regular monitoring of the supplied water at the point of consumption. The number of required samples depends on the volume of the supplied water; small supplies are monitored less frequently, but at least once a year. Public and private supplies are both covered by the decree; however, individual (single household) supplies are exempt from the monitoring requirements. The quality of the supplied water is controlled by the public health authorities (public health departments of the county or district government offices). Large supplies (serving more than 5000 inhabitants) are supervised by the county offices, while smaller supplies by the district offices. The public health authorities also perform water quality monitoring; the sample number is approximately 10% of the suppliers' self-control samples. All water quality tests are done by accredited (private or state) laboratories.

Water quality data is reported directly by the laboratory to the Information System on Water for Human Use (HUMVI) every 3 months. Data is validated by the water supplier or the public health authority. Only validated data is used for analysis at the national level. More information on the HUMVI system is given under Part Three.

¹In 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.

Approximately 95% of the population is served by public utility water supplies, and approximately 3% by small institutional or private supplies. The population using individual wells is estimated to be 2%. The former two categories theoretically both report to the national database, and thus the quality information is included in the tables below. However, private supplies do not always fully meet the reporting requirements. Thus the population coverage of the reported data is between 95% and 98%

2. Do the water supply systems reported here supply the urban population only or both the urban and rural populations?

The reported data covers both urban and rural supplies, with the exception of very secluded areas (e.g. individual farms using individual wells).

3. Specify where the samples/measurements are taken (e.g., treatment plant outlet, distribution system or point of consumption).

The reported data is based on regular compliance monitoring at the point of consumption. Nitrite is also measured and reported at the point of supply.

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

4. In the reports, the standards for compliance assessment signify the national standards. If national standards for reported parameters deviate from the WHO guideline values, provide information on the values (standards) used for calculation.

Compliance is assessed against the parametric values defined by the EU legislation. The EU parametric values are (with few exceptions) in line with the WHO guideline values. For some chemical parameters (arsenic, boron and fluoride), temporary (higher) parametric values applied until December 2012, due to the derogation granted by the European Commission. The transitional parametric value was 50 µg/l for arsenic until May 2012 and 20 µg/l between May and December 2012. For boron, parametric value was 5 and 3 mg/l in the above periods. Fluoride parametric value was 1.7 mg/l. As of December 2012, the legislative values (10 µg/l arsenic, 1 mg/l boron, 1.5 mg/l fluoride) apply. Lead parametric value has changed in the EU in 2013; 10 µg/l replaced the previous (transitional) 25 µg/l. For trihalomethanes, the national legislation defines a stricter limit value (50 µg/l), and a national acceptable range applies to total hardness (50-350 mg/l).

B. Bacteriological quality

Indicator to be used: WatSan_S2: The percentage of samples that fail to meet the national standard for E. coli and the percentage of samples that fail to meet the national standard for Enterococci.

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

<i>WatSan_S2</i> (2005)	<i>Baseline value</i> (2005)	<i>Value reported in the previous reporting cycle</i> (2012)	<i>Current value</i> (2015)
E. coli	1.13%	0.58%	0.7%
Enterococci	3.29%	1.65%	1.6%

The bacteriological water quality was practically unchanged in the past 5 years. Small supplies usually have higher incident rates of bacterial non-compliance than large supplies. While the overall percentages of non-compliance are relatively low, the aim is to achieve drinking water that is completely free from fecal contamination. Most of the non-compliance incidents are due to failures of the distribution system, thus significant improvement can only be achieved by major reconstructions. Though not represented by the fecal indicator data, many water supplies are affected by recurrent microbiological problems due to secondary contamination in the deteriorated distribution systems or sometimes due to operational failures at the treatment work (presence of *Pseudomonas*, elevated heterotrophic bacterial count or microscopic organisms).

C. Chemical quality

Indicator to be used: *WatSan_S3*. All countries shall monitor and report on the percentage of samples that fail to meet the national standard for chemical water quality with regard to the following:

- (a) Fluoride;
- (b) Nitrate and nitrite;²
- (c) Arsenic;
- (d) Lead;
- (e) Iron.

Parties shall also identify up to five additional physico-chemical parameters that are of special concern in their national or local situation (e.g., pesticides).

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

<i>Substance</i>	<i>Baseline value</i> (2005)	<i>Value reported in the previous reporting cycle</i> (2012)	<i>Current value</i> (2015)
Fluoride	0.86%	0.19%	0.2%
Nitrate	1.48%	0.87%	0.4%
Nitrite	-	0.4 % (ex- waterworks 6.9%)	0.9% (ex-waterworks: 3.7%)

² As defined in the WHO Guidelines for drinking-water quality.

<i>Substance</i>	<i>Baseline value (2005)</i>	<i>Value reported in the previous reporting cycle (2012)</i>	<i>Current value (2015)</i>
Arsenic	41.0%	32.7%	11.6%
Lead	0.9%	1.24%	2.7%
Iron	10.9%	10.4%	9.5%
Additional physico-chemical parameter 1: Boron	6.90%	5.49%	6.7%
Additional physico-chemical parameter 2: Manganese	17.1%	16.9%	14.5%
Additional physico-chemical parameter 3: Trihalomethanes	1.43%	1.48%	3.1%
Additional physico-chemical parameter 4: Low hardness	7.52%	6.43%	5.7%
Additional physico-chemical parameter 5: Chemical oxygen demand	0.92%	1.04%	1.5%

As a result of the Drinking Water Quality Improvement Programme, chemical quality of the drinking water improved significantly, especially regarding the five national priority parameters: arsenic, boron, fluoride, nitrate and nitrite, which were the main focus of the Programme. It also contributed to the reduction of iron and manganese non-compliance as these two are very often co-occur with arsenic and the oxidative arsenic removal technologies also remove these compounds. The apparently elevated figures for lead do not represent an actual increasing trend: it is partly due to the stricter parametric value, and partly to a national initiative for targeted monitoring of potentially affected buildings (mainly child-care facilities) performed by the public health authorities. The reduction of nitrite non-compliance (which was the result of the Nitrite Action started in 2007) was temporarily halted by the new infrastructural developments: though technologies to remove ammonium from geological sources were installed in many water supplies, the operational optimization of the new treatment plants is still in progress, thus temporarily localised incidents of nitrite non-compliance occur. This also accounts for the apparent increase of disinfection by-products. The Drinking Water Quality Improvement Programme and chemical water quality are further discussed in Part Three.

II. Reduction of the scale of outbreaks and incidence of infectious diseases potentially related to water

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

- (a) For reporting outbreaks, please indicate if the numbers reported are related to all exposure routes or only related to water (i.e., for which there is epidemiological or microbiological evidence for water to have facilitated infection);
- (b) For reporting incidents:

- (i) Please report cases per 10,000 persons;
- (ii) Please differentiate between zero incidents (0) and no data available (-);
- (iii) If possible, please distinguish between autochthonous and imported cases.

Please consider extending the list of water-related diseases to cover other relevant pathogens (e.g., enteric viruses, Cryptosporidium, Giardia, Legionella).

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

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

	<i>Incidence (case-based surveillance)</i>			<i>Number of outbreaks (event-based surveillance)</i>		
	<i>Value reported in the previous reporting cycle Baseline (2008)</i>	<i>Value reported in the previous reporting cycle (2011)</i>	<i>Current value (2014)</i>	<i>Baseline (2008)</i>	<i>Value reported in the previous reporting cycle (2011)</i>	<i>Current value (2014)</i>
Cholera	0	0	0	0	0	0
Bacillary dysentery (shigellosis)	0.08	0.04	0.008	1	3 (household)	2 (household)
Enterohaemorrhagic E. coli.	.	.	0.02	0	0	0
Viral hepatitis A	0.17	0.08	1.58	8	5 (4 community, 1 household)	91 (55 community, 5 institutional, 31 household)
Typhoid fever	0.001*	0.001*	0.001*	0	0	0
Cryptosporidiosis	0.01	0.01 [#]	0.008	0	0	1 (household)
Giardiasis	0.14	0.09 [#]	0.06	2 (household)	1 (household)	1 (household)
Legionellosis	0.03 [#]	0.04	0.03	-	-	-

*imported cases

includes imported cases

The National Communicable Disease Reporting System is a combined case-based and event-based surveillance, where laboratories and clinicians (general practitioners, specialists and hospitals) are legally required to report cases and events. The system also allows for linking cases to outbreaks. However, the source of infection is only investigated for outbreaks, and not all the outbreak investigations are successful in determining the source of infection. The number of confirmed water-related outbreaks is very low, generally less than one per year.

Considering HAV infections, the two single food-related HAV-outbreaks identified in 2015 were not linked to water. The frequency of HAV infection and household outbreaks is higher in some seriously deprived areas, where the access to safe drinking water, and sanitation and hygiene practices are below the national average.

Legionellosis and protozoa are a growing concern, though the reported numbers do not represent the estimated burden of disease. More information on the reporting system is given in Part Three.

III. Access to drinking water

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

<i>Percentage of population with access to drinking water</i>	<i>Baseline value (2008)</i>	<i>Value reported in the previous reporting cycle (2010)</i>	<i>Current value (2013)</i>
Total	93.98 %	94.91 %	94.5 %
Urban	95.92 %	98.79 %	96.0 %
Rural	89.82 %	92.62 %	90.7 %

Please specify if the above data is based on national estimates or estimates provided by the WHO/United Nations Children's Fund (UNICEF) Joint Monitoring Programme (JMP) for Water Supply and Sanitation.

If national estimates are provided, please specify how access is defined and estimated in your country.

JMP definitions and categories are available at <http://www.wssinfo.org/definitions-methods/watsan-categories>.

The reported figures represent the percentage of the population served by public water utilities on premises. The JMP report was "100% improved" for both the urban and rural population.

IV. Access to sanitation

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

<i>Percentage of population with access to sanitation</i>	<i>Baseline value (2008)</i>	<i>Value reported in the previous reporting cycle (2010)</i>	<i>Current value (2013)</i>
Total	71.28 %	72.50 %	75.1 %
Urban	84.38%	87.30 %	85.9 %
Rural	41.11 %	44.37 %	48.0 %

Please specify if the above data is based on national estimates or estimates provided by JMP for Water Supply and Sanitation.

If national estimates are provided, please specify how access is defined and estimated in your country.

JMP definitions are available at <http://www.wssinfo.org/definitions-methods/watsan-categories>.

The reported figures represent the percentage of the population connected to a centralized public sewage system. The JMP report was “100% improved” for both the urban and rural population.

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

Water quality

The assessment of newest data on the quality of surface water and groundwater (2013-15 period) will be performed only after the finalization of this present report. Thus for these indicators, the latest available data is basically from 2008-2012 period (RBMP2). Targets set in this area (relating to EU obligations) were updated taking into account the available funds for the implementation of mitigation measures: 16,1% and 42,3% river waters, 12,2% and 78,3% of lake waters, 53% and 91,4% of groundwater should reach at least „good” status by 2021 and 2027 respectively. (But all mitigation measures will be implemented by 2027 ensuring rich good status for all water bodies by 2027.)

Table 3

Ecological status of surface water

(% water bodies)

<i>Percentage of surface water classified as of</i>	<i>Baseline value (2007)*</i>	<i>Value reported in the previous reporting cycle (2010) **</i>	<i>Current value (2012) ***</i>
High status	2 % (8 %)	0 % (6 %)	1 %

Good status	15 % (44 %)	14 % (46 %)	8 %
Moderate status	48 % (41 %)	65 % (45 %)	40 %
Poor status	29 % (7 %)	17 % (3 %)	27 %
Bad status	6 % (0 %)	4 % (0 %)	10 %
Total number of water bodies classified	670 (**)	195 (426)***	933
Total number of water bodies in the country	1082	1082	1078

Ecological status based on biological, hydromorphological and physical-chemical parameter; in brackets only by physico-chemical assessment

* Covering sampling period of approximately 2004-2007, based mostly on non-WFD compatible monitoring results. Assessment results were published in 1st River Basin Management Plan 2009 (RBMP1).

** Water bodies monitored in 2010. In the previous report, draft, preliminary data was reported, as the WFD status assessment was still ongoing for the RBMP2 process.

*** Covering sampling period of approximately 2008-2012, based on WFD compatible monitoring results. Assessment results were published in RBMP2.

The results of the assessment from 1st and 2nd RBMP' periods are not fully comparable, because delineation of water bodies, typology, assessment methods were improved during the preparation of the RBMP2.

Table 4

Chemical status of surface water

(% water bodies)

<i>Percentage of surface water classified as of</i>	<i>Baseline value (2007)*</i>	<i>Value reported in the previous reporting cycle (2010)**</i>	<i>Current value (2012) ***</i>
Good status	51%	nc****	46 %
Poor status	49 %	nc****	8 %
Total number of water bodies classified	59*	165**	577
Total number of water bodies in the country	1082	1082	1078

* Because of the lack of monitoring data, 94,5% of the surface water bodies were not assessed during 1st river basin management process. Data covers the sampling period of approximately 2004-2007, based mostly on non-WFD compatible monitoring results and only a limited number of parameters (heavy metals)

Assessment results were published in RBMP1

** Water bodies monitored in 2010. In the previous report, draft, preliminary data was reported, as the WFD status assessment was still ongoing for the RBMP2 process.

*** Covering sampling period of approximately 2008-2012, based on WFD compatible monitoring results. Assessment results was published in RBMP2

**** The data reported for 2010 was not correctly calculated, thus it was deleted now.

Table 5

Status of groundwaters

(% groundwater bodies)

<i>Percentage of groundwater classified as of</i>	<i>Baseline value (2007)*</i>	<i>Value reported in the previous reporting cycle (2010) **</i>	<i>Current value (2012) ***</i>
Good status			
quantity status	85.4 %	85.4 %	80.0 %
chemical status	79.5 %	79.5 %	79.5 %
Poor status			
quantity status	14.6 %	14.6 %	20.0 %
chemical status	20.5 %	20.5 %	20.5 %
Total number of water bodies classified	185	185	185
Total number of water bodies in the country	185	185	185

* Covering sampling period of approximately 2004-2007. Assessment results were published in RBMP1 2009

** The assessment of the groundwater status was ongoing in 2013 due to the timetable of WFD river basin management planning. Before approval of the new assessment results, the earlier status data were official

*** Covering sampling period of approximately 2008-2012, based on WFD compatible monitoring results. Assessment results were published in RBMP2 2015

Water use

Water exploitation index at the national and river basin levels for each sector (agriculture, industry, domestic): mean annual abstraction of freshwater by sector divided by the mean annual total renewable freshwater resource at the country level, expressed in percentage terms.

Table 6

<i>Surface water* Water exploitation index</i>	<i>Baseline value (2006)</i>	<i>Value reported in the previous reporting cycle (2010)</i>	<i>Current value** (2013)</i>
Agriculture	0.24 %	0.20 %	0.30 %
Industry ^a	0.04 %	0.03 %	0.09 %
Domestic use ^b	0.20 %	0.24 %	0.21 %
Other uses***	0.21 %	0.21 %	0.02 %
Energy cooling **	3.00 %	3.14 %	2.5 %

a The figure includes abstractions for manufacturing industry

b The figure refers only to public supply

* Hungary used the definition of OECD (EUROSTAT/OECD JOINT QUESTIONNAIRE ON INLAND WATERS) for the calculation of water exploitation index.

Accordingly, fresh surface water means: “Water which flows over, or rests on the surface of a land mass, natural watercourses such as rivers, streams, brooks, lakes, etc., as well as artificial watercourses such as irrigation, industrial and navigation canals, drainage systems and artificial reservoirs. For purposes of these tables bank filtration (induced infiltration of river water through bankside gravel strata (by pumping from wells sunk into the gravel strata to create a hydraulic gradient) with the intention of improving the water quality) is included in fresh surface water.”

** Data of RBMP2 status assessment (22nd December 2015). Before approval of the assessment results the earlier status data are official

*** Figure refers to services, construction, etc. (the row added to the table by Hungary)

**** Figure refers to abstraction for production of energy (only cooling waters) (the row was added to the table by Hungary)

Table 7

<i>Groundwater* Water exploitation index</i>	<i>Baseline value (2006)</i>	<i>Value reported in the previous reporting cycle (2010)</i>	<i>Current value** (2013)</i>
Agriculture	1.90 %	2.40 %	1.79 %
Industry ^a	2.10 %	1.70 %	2.88 %
Domestic use ^b	15.80 %	14.20 %	18.90 %
Other uses***	2.40 %	2.30 %	2.94 %
Energy cooling ****	1.80 %	1.60 %	0.59 %

a The figure includes abstractions for manufacturing industry

b The figure refers only to public supply

* See above, in this case “groundwater” does not contain bank filtration waters

** Data of RBMP2 status assessment (22nd December 2015). Before approval of the assessment results the earlier status data are official

*** Figure refers to services, construction, etc. (the row was added to the table by Hungary)

**** Figure refers to abstraction for production of energy (only cooling waters) (the row was added to the table by Hungary)

Part Three

Targets and target dates set and assessment of progress

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

Target 1: To supply 96% of the population with chemically compliant drinking water.

Target date: 2015. National level target. Intermediate target: To supply 80% of the population with chemically compliant water by 2010.

Baseline situation: Drinking water quality in Hungary is regulated by Government Decree 201/2001 (X.25) implementing the EU Directive 98/83/EC. At the time of accession to the EU, over 15% of the population was supplied by drinking water that was non-compliant with the parametric values of arsenic, boron, fluoride, nitrite or nitrate, and over 30% was non-compliant for some chemical indicator parameters (iron, manganese, ammonium, hardness). All of the listed problems are related to (deep) groundwater sources, and the contaminants (except nitrate) are of geological origin. The primary target therefore was to achieve full compliance with the national and EU requirements in the public utility supplies by 2015. The most relevant task (both in the scale of the problem and its health risk) was the arsenic exceedance in drinking water, which affected over 1.5 million people (mostly in South and South-East Hungary).

Actions and progress: The first Drinking Water Quality Improvement Programme – financed mainly from EU funds – was launched in 2007. It’s main priority was the reduction of arsenic, boron and fluoride in the supplied water and the prevention of nitrite formation in the water treatment plant or the distribution system by the removal of ammonium from the source water. The eligibility requirements, timing, and governmental organization of the Programme was modified several times, as the low incentive of the local governments and the water suppliers, the lack of the funds for the contribution required for the application, and other (mainly organizational) challenges hindered the progress of the Programme.

The derogation granted in the *acquis communautaire* for nitrite (until 2006) and for arsenic, boron and fluoride (until 2009) was extended until December 2012, but following this period, the legal parametric values applied for all water supplies, though many of them still could not meet the

requirements due to the delays in the improvement projects. The local public health authorities took immediate actions, and in many communities the suppliers were able to lower the arsenic concentration by intermittent measures (e.g. scaling up or modifying existing technology or using wells with lower concentration). Where such interventions were not possible, the population was supplied by water from alternate sources (mainly from community size, containerized arsenic removing devices or water delivery trucks).

The improvement projects accelerated after 2012 and most of them were finalized by the end of 2015. The number of affected water supplies was reduced by 60% (see Figure 1), and further improvement is expected in 2016 as the new technologies start operation. Similar reduction was observed in the ammonium non-compliance, which subsequently reduces the risk of nitrite formation in the distribution system.

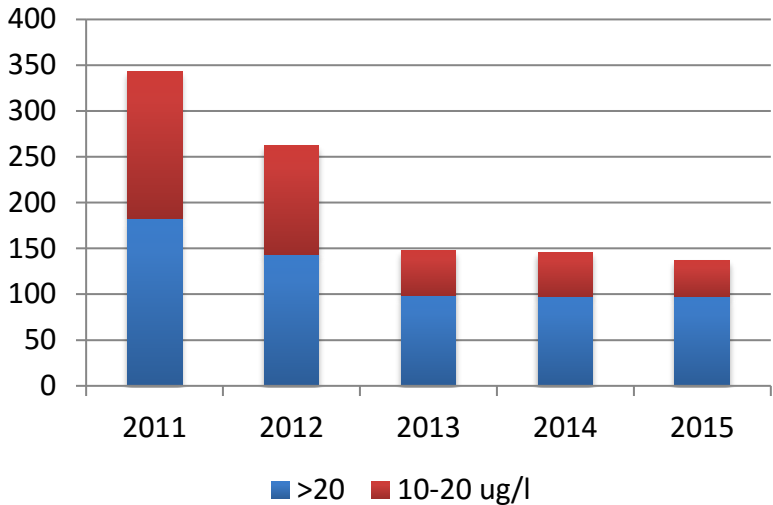


Figure 1

The intermediate target was reached by 2012. A further challenge is that some water utility operators have difficulties adapting the operation to the new water treatment technologies. As a result, increased frequency of microbiological non-compliance and disinfection by-product formation were observed. Good operational practices will soon overcome these transitional problems and the final target is expected to be met by 2017. The target date shall be revised accordingly.

Target 2: To reduce microbiological non-compliance in small water supplies (served population less than 5000). (Numerical target and target date was not set.)

Baseline situation: According to the National Drinking Water Database, the incidence of microbiological non-compliance in small water supplies is significantly higher than in large supplies (e.g. 5% vs 2% of the samples contain coliform bacteria). Though no numerical target or target date were defined, this was recognized as a problem area. The situation is expected to improve as a result of the extension of water safety planning to the small water supplies as well (see section VII.). However, in the process of the revision of the targets a more defined target will be proposed towards this goal.

Further priority themes for future target setting in this target area are the secondary contamination of drinking water in the distribution system, and the quality of small private and individual wells.

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

Target: general target to reduce and prevent water related infections.

Target date: continuous.

Background situation: The number of recognized water related infections is low, therefore numerical target was not defined. The aim is to maintain low (close to zero) level of water related outbreaks. Epidemics are generally attributed to public health factors, and thus their prevention mainly involves public health interventions. Rapid detection of the outbreaks, prevention of its escalation and the statistical analysis of the means of transmission are the task of the epidemiological authorities.

Actions and progress towards the target: The information system supporting these tasks was launched in 2015 under the existing platform of the Office of the Chief Medical Officer (OSZIR). The data providers (clinicians and laboratories) can access the system directly and upload the information electronically via online forms or through electronic interface. Data content of the report is defined in the Act 47 of 1997 on Handling and Protection of *Health Data* and Related Personal *Data* and the Decree of the Ministry of Human Resources 1/2014. The efficiency of outbreak detection and investigation is largely relies on the training of the local public health officers. The National Centre for Epidemiology organizes a 3-day epidemiology training session for epidemiologist working on the district or county level.

Further achievement towards the prevention of water related infections was the introduction of the first national regulation on the environmental monitoring and risk management of *Legionella* (Decree of the Minister of Human capacities 49/2015 (XI.6.)). Though the reported incidence rates of legionellosis are low, previous research on environmental prevalence of indicated high rate of colonization in premise plumbing and spas. The regulation focuses on high risk environments, such as hospitals, hotels, spas and cooling towers. Monitoring and risk assessment requirements and intervention values are defined for all risk environments. The implementation of the regulation is supported by the publication of a best practice guidance document of the National Public Health Centre describing the tools for *Legionella* risk assessment and mitigation. Other guidance materials were also published recently: on the infection control of water environments in health-care settings (dental care, dialysis centres) and on the prevention of multiresistant pathogen infections by the National Centre for Epidemiology and on the best operational practices for healthy environment in health-care facilities by the National Public Health Centre.

Though the target date and consequently its implementation is continuous, more defined targets and target dates are planned in the revision process. One potential target is the connection of the Information System of Water for Human Use and the National Communicable Disease Reporting System, as the databases operate under the same platform. Connection of the databases will allow for the analysis of potential relationship of drinking water non-compliance and water related infection. The prevention of infections in institutional settings (mainly health-care facilities) is also a priority area.

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

Target 1: Comprehensive assessment of the population without access and of the possible solutions. Target date: 2008. National level target.

Baseline situation: The Fundamental Law of Hungary states the right to healthy drinking water for all Hungarian citizens. The provision of drinking water is the responsibility of the state or the local municipality. Public utility water supply is available in all municipalities of Hungary, and the connection rate is estimated to be close to the technically achievable maximum (95%). Though it is known that the rest of the population relies on private, institutional or individual supplies, the share of the different types of supply was unknown. The data available on the population without access was incomplete. The revision of the regulation of the sector was deemed necessary.

Actions and progress towards the target: The assessment was not carried out as planned in 2008, and the implementation of the target was conferred to a later date. The progress was greatly assisted by the development of the policy document with a “No One Left Behind” approach, and even more significantly, by the publication of the Scorecard on Equitable Access to Water and Sanitation. In 2014 and 2015, a self-assessment exercise on national level was carried out using the Scorecard. The assessment was coordinated by the National Public Health Centre, and involved a wide range of government institution (Office of the Commissioner for Fundamental Rights, Ministry of Interior, Hungarian Central Statistical Office, Ministry of National Development, Hungarian Energy and Public Utility Regulatory Authority as the main contributors) and non-government organizations (mainly civil societies working with people in poverty and ethnic groups). The main findings were that in spite of the high service coverage, access to drinking water is still a challenge for socially and financially marginalized groups and remote farm areas without public supply. This population is not represented in the official statistics and relies heavily on NGO activities for the improvement of their situation.

Recent development programmes were launched to reduce inequalities. The “Farm Programme” was designed to improve infrastructure in rural areas, including water supply and individual environmental-friendly sanitation systems. The National Social Inclusion Strategy targets those marginalized groups whose access to drinking water is, in many cases, unresolved, through a complex social, health promotion, educational, and housing programme.

The target was achieved, though later than the planned date. The assessment also revealed that systematic data on the size of the population using private wells and the number of people excluded from the water service (as a result of non-payment) is not available, and data acquisition was identified as a future task. The Kvassay Jenő Plan includes the target of providing “everyone equitable access to safe and adequate drinking water”, and the “high-quality water utility service and precipitation water management with acceptable consumer costs” is among its priority areas. The RBMP2 gives similar provisions. The actions towards these goals are potential targets under the Protocol.

Target 2: Elaboration of a social financial assistance system for water fees to ensure the right to water for all. Target date: 2010. National level target.

Baseline situation: The full cost recovery principle is a basic provision under the Water Framework Directive, but the legislation also requires the minimization of costs. Though there is a government subsidy for water costs above the national average, it is on a municipal and not

a household level. Therefore it was deemed necessary to develop a social financial assistance system to ensure affordability for all.

Actions and progress towards the target: The Water Utility Act regulates the financial management and cost calculation of water utilities. The data is reported by the water supply operators to the Hungarian Energy and Public Utility Regulatory Authority. The Authority provides recommendations to the Minister of National Development, who is officially responsible for setting water tariffs. The tariff system does not include socially differentiated elements for reducing inequality.

The Hungarian Government lays emphasis on the reduction of household costs. As a part of this programme, water tariffs were immobilized in 2012, and nominal and actual water fees were centrally reduced in 2013 and 2014. However, the benefit of these incentives increases with water consumption, and they do not focus on equity issues. The Water Utility Act defines “protected users” (based on the social status or disability), who can apply for deferred payment and technical support. On the local level, local governments may provide housing aid as part of the social benefit system.

Though there were many achievements towards affordable water services in the recent years, most of these are not focusing on reducing inequality, thus the target was not yet met. In the National Water Strategy, development of a “water tariff policy and structure, and financial assistance system and differentiated contribution to ensure affordable and sustainable financing in the water sector” is identified as a priority, which is in line with the proposed target. New target date shall be defined.

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

For each target set in this area:

Target: Collection and treatment of communal sewage by biological treatment, nitrogen and phosphorous removal in incremental step:

1. in agglomerations over 10000 PE on sensitive areas, target date: end of 2008,
2. in agglomerations over 15000 PE, target date: end of 2010,
3. in agglomerations between 2000-15000 PE, target date: end of 2015.

National level target

Baseline situation: Sanitation and wastewater treatment is the responsibility of the state or the municipalities, according to the Hungarian legislation.

Safe treatment of communal wastewater is one of the priorities of environmental protection. It is also an obligation under the 91/271/EEC Directive. Remaining targets and target dates in access to sanitation are unchanged since the last report.

Actions and progress towards the target:

In agglomerations 2000-15000 PE on both the sensitive and other areas by Dec 31, 2015 the affected settlements have collecting sewage system and at least secondary (biological) treatment, or have ongoing projects.

The ratio of household connected to a collecting sewerage system increased to 75% in 2013. Accessibility in the rural areas was 48%, while in urban areas is significantly bigger (almost twice), 85,9% in 2013.

As a result of the intensive development (e.g. launch of the Budapest Central Wastewater Treatment Plan) in the area after joining the EU, 96.5 % of the collected wastewater was released into the receiving water body after treatment by 2010. The ratio of sewage undergoing tertiary treatment also increased significantly (17.5% in 2002, 38.3% in 2008, 72% in 2010), reaching 72.04% in 2013. As an effect of the above development, the discrepancy between households connected to public drinking water supply and those connected to a collecting sewerage system decreased from 19.68% to 19.4%, thus reaching the EU average of 20%.

The length of separated and combined sewers (receiving rainwater as well) was 41.000 km in 2008, 39.020 km in 2010 and reached 51.620 km in 2013.

Volume of the collected and treated wastewater, 2009–2013

(1000 m³)

Year	Collected wastewater	Treated wastewater	Treatment		
			Only mechanical	Biological	Tertiary treatment
2009	423 267.20	414 745.43	892.87	123 189.40	290 663.16
2010	629 836.88	619 128.32	11 443.10	170 357.59	437 322.62
2013	481 224.08	476 003.15	3 190.04	129 897.71	342 915.40

Additional targets were identified in the revision of the regulation under the new legal framework, Water Utility Act (WUA, Act CCIX of 2011). Multiphase implementation is planned to be completed by 2017, and aims to ensure a high quality, economically sustainable sewage treatment, independent of the region or the financial status of the population.

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

and

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

Target: No target was set to date.

Baseline situation: Water utilities (drinking water supply and wastewater treatment) require an official authorization procedure for operation. The companies operating the services are either owned or contracted by the body responsible for the supply (the municipality or state). Since 2012, legal framework of the water utility services changed, because of the integration in the sector, which is expected to last until 2017.

Progress related to the target area: Act CCIX of 2011 on Water Utility settled the official supervision of the water utilities to the Hungarian Energy and Public Utility Regulatory Authority. The Ministry of Interior coordinates the operative water management, and the water management control and water authorities belong to the Ministry of Interior.

	1992	2008	2010	2013
Length of drinking water mains (without the connecting pipelines) (km)	55 309	57 240	58 132	86 826
Connected households (pcs)	3,45 million	3,9 million	4,03 million	4,18 million
Volume of supplied drinking water (m³)	775 million	564 million	564,5 million	557,6 million
Employees at the water utilities companies (person)	55 000	18 500	18 203	18 953

Future goal is to reduce water loss on the distribution system through the reconstruction of deteriorated pipelines and to eliminate lead pipes in the connection pipelines.

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

Target: The proposed target in this area was to introduce water safety planning in the operation of large water supplies (serving at least 5000 people). Target date was not defined. National level target.

Baseline situation: The drinking water regulation was amended in 2009 by introducing the obligation for the water supplies serving more than 5000 people or supplying more than 1000 m³/day water to develop a water safety plan (WSP). The requirement came into force in a rolling fashion depending on the size of the supply: deadline for the submission of the WSP to the Chief Medical Officer's Office for approval was July 1, 2012, for supplies serving 100 000 or more people, it is July 1, 2013, for those serving 50000-100 000 people, and July 1, 2014 for the ones serving 5000-50000.

Actions and progress towards the target: The legal obligation for developing water safety plan for large supplies was met approximately by the deadline by the water suppliers. The water safety plans were first authorized by the Office of the Chief Medical Officer. In 2013, a new dual auditing and authorization system was introduced in the regulation. The WSPs are audited by the National Public Health Centre (both format and contents, especially technical and risk prioritization aspects), and approved by the local public health authority (who is the supervising body on the local level and performs the sanitary inspections). At the same time, the obligation was extended to all supplies, including small ones by a July 2017 deadline.

By the end of 2014, over 200 water supplies (of 1500 in Hungary) operated under a water safety plan, and 62% of the entire population was supplied by water from these services.

Future proposed target under the Protocol is (1) to provide the entire population using public supplies by drinking water from safely managed services by 2017 and (2) to develop an online tool for the risk assessment of small and very small supplies by 2017.

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

Target: No targets were set to date in this programme area, as sector representatives identified issues of higher priorities.

Baseline situation: New collecting sewage systems and wastewater treatment investments are established in accordance with the Best Available Technology.

Proposed targets may be directed towards the introduction of sanitation safety plans.

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

Target 1: No untreated sewage shall be dumped from settlements over PE 2000.

Target date: 2015. National level target.

Target 2: No new combined sewer systems shall be laid and the existing ones should be

transformed into separated systems on a continuous basis.

Target date: Continuous. National level target.

Baseline situation: Before 2009, almost 50% of the collected wastewater was released without treatment to the receiving body.

Actions and progress towards the target: In 2013, only 0.2% of the wastewater collected through public collecting systems is released into the receiving water bodies after only mechanical treatment (practically untreated). The increase of the treatment to almost 100% is the effect of the opening of the Central Wastewater Treatment Plant of Budapest and the ongoing trial operation of the South-Buda main sewer under the Danube.

The Ministry of Interior coordinates the operative water management and the water authorities belong to the Ministry of Interior. The water authorities determine the discharge threshold limit values according to the regulations (water quality, individual and technological limits) and consider the capacity and water quality of the recipient (environmental quality limits).

Target 1 was met to target date; the progress towards Target 2 is continuous. Future priority is the improvement of emission quality.

X. Occurrence of discharges of untreated storm water overflows from wastewater collection systems to waters within the scope of the Protocol (art. 6, para. 2 (g) (ii))

There was no target set in this target area. Hungary does not collect data of storm water overflows. In the field of municipal rainwater-management there are some measures planned in the Kvassay Jenő Plan - National Water Strategy (NWS) in order to achieve the modern water-management targets.

XI. Quality of discharges of wastewater from wastewater treatment installations to waters within the scope of the Protocol (art. 6, para. 2 (h))

No target was set to date.

Baseline situation: In Hungary, the general legal framework exists to ensure that pollutant discharge into surface water is subject to official authorization, and the dischargers are obliged to check their wastewater treatment technologies and to assess if requirements of the permits are met. The water authorities determine the discharge threshold limit values according to the regulations (water quality, individual and technological limits) and considering the capacity and water quality of the recipient (environmental quality limits), in line with the possibilities of best available techniques.

If the emission by the user of the environment exceeds the allowed limit or, in line with the relevant legislation, the authority orders more strict requirements the discharger has to develop and implement an approved pollution reduction program and keep to a given schedule. This ensures that the amount of wastewater discharge decreases both on individual (licensed) level and nationally. The licences are regularly revised by the authority and are usually valid for 5 years. The pollution reduction programs need to be integrated into the program of measures of the River Basin Management Plans.

The legal regulations oblige the users of the environment to monitor their discharges in a self-control system and to provide data to the water authorities on a regular basis.

The modification of the Government Decree 314/2005 (XII. 25.) has been done in order to make it compatible with the new industrial emission directive of the EU. As a result of the modification (among other water quality-related legislative acts), the requirements of the Water Framework Directive regarding hazardous substances will be included in the requirements of integrated environmental permits, thus ensuring further reduction of contamination.

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

No target was set to date.

Baseline situation: Agricultural utilisation of sewage sludge requires an official license, based on a soil protection plan. The soil and plant protection directorate of the county government offices issue the licence as the competent soil authority under the Ministry of Agriculture and government offices.

Compliance with the licence is regularly controlled by the authorities. Data on sewage sludge utilisation is reported annually. Every 3 years, a report is prepared for the European Commission under the 86/278/EC Directive on sewage sludge usage.

Disposal or reuse of sludge from the municipal wastewater treatment plants will be a key issue in the future, while the landfill will be further decrease due to the changing legislation. The large volume of the produced sludge requires the development of a sewage sludge treatment and disposal action plan by the municipalities responsible for the operation of the wastewater treatment plants.

Year	Total sewage sludge (t dry weight/year)
2008	266 658
2010	236 043
2013	193 664

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

See: Chapter XII.

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

Target 1: Detailed investigation of surface waters assigned as drinking water resources or to prepare protection measures for compliance with Water Framework Directive target.

Target date: 2009. National level target.

Target 2: Detailed protection plans to have to be prepared and implemented.

Target date: end of 2015. National level target.

Baseline situation: Almost 80% of groundwater extraction serves the purpose of drinking water supply (94% of drinking water is provided from groundwater, mainly from gravelly sandy and karstic aquifers) in Hungary. In most areas groundwater quality is suitable for drinking water supply; in some cases of deep groundwater treatment is necessary, other types need disinfection only.

In the gravelly-sandy aquifers of the basins the dissolved solid content of waters is less than 1µg/l. At some places iron, manganese and ammonium can be detected, in some areas arsenic content of the deep groundwater causes problems in utilisation.

Karstic waters have a low dissolved solid content and are highly suitable for drinking water supply, however they can be polluted from the surface more easily.
(See details in chapter I. on the drinking water and chapter XVIII. on the remediation of polluted sites)

The National Drinking Water Source Protection Program started in 1997 in case of operating and in 1994 in case of perspective drinking water resources, with the aim to protect vulnerable drinking water sources from contamination by human activities and to preserve the natural (good) quality of waters in wells of water works and the sources to be used for drinking water supply in the future (perspective drinking water sources). The requirements of drinking water source protection are set out in Government Decree 123/1997 (VII. 18.).

Actions taken: The scope of Government Decree 123/1997. (VII. 18.) covers the sources of water used for drinking water supply, the utilisation of mineral- and medicinal waters, both exploited and designated for future uses, further the facilities serving the treatment, storage and distribution of water for such uses serving at least 50 persons on a daily average. Protection is ensured by the designation of protection zones around water abstraction facilities and the introduction and enforcement of restrictions within the protection zones and the establishment and operation of a monitoring system.

According to the Water Framework Directive the protection of drinking water sources have to be subject of special attention in the River Basin Management Plans. Measures for the protection of drinking water sources were therefore included to the RBMP.

Financial support for the designation of protective zones and the implementation of the necessary measures serving the protection of water quality has been ensured from state budget and until 2007 from the Environment and Energy Operational Programme (EEOP) and other EU funds. Several operators prepared the diagnostic from their own resources.

At present 1952 public water sources are recorded, out of which 19 are surface water resources and 1933 are ground water resources. 846 ground water resources are situated in areas sensitive to pollution from the surface (vulnerable drinking water sources); for approximately 200 of these ground water resources the vulnerability of geological formation is uncertain, and further investigation is needed. More than 70 are recorded as perspective groundwater sources based on their favourable hydro-geological conditions.

Progress achieved towards the target:

The number of surface and ground water resources both operational and perspective having official decisions on protective zones are as follows:

440 in the 2007-2009 cycle,

553 in the 2009-2012 cycle,

668 in the 2012-2015 cycle.

315 water resources are secured and 3 are under progress out of 318 operating sensitive drinking water sources, and 58 sensitive perspective water sources are secured from national budget.

The diagnostic of all 71 sensitive perspective water sources are finished.

EEOP financed projects for the calculation of the protective zones, elaboration of the measures for vulnerable public and perspective drinking water sources:

	2009	2012	2015
EEOP funded projects for securing sensitive operating and perspective water resources	36 operating and perspective	61 operating	64 operating
		13 perspective	13 perspective

The target was partially achieved. Diagnostic works for the remaining operating drinking water sources are to be scheduled to the amount of the available funds. The new target date shall be defined accordingly.

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

Target: Status assessment of the identified bathing waters under the River Basin Management Plan, design and implementation of action plans to reduce contamination.

Target date: 2015. National level target.

Baseline situation: Hungary has 76 freshwater bodies, which are used for bathing. In 2015, 256 bathing waters were identified. 246 were open in the bathing season, 212 of which are on lakes, and 34 on rivers. Majority of the lakeside bathing sites are on the three largest bathing lakes (138 on Balaton, 9 on Velence Lake, and 6 on Tisza Lake). The rest are on dead-legs and pit-mines. Bathing waters are regulated by Government Decree 78/2008 (IV.3.), which

implements EU Directive 2006/7/EC.

The bathing water quality monitoring is based on sanitary inspection and fecal indicator measurements. Measurements are performed by accredited laboratories contracted by the beach operators. The identification and control of bathing waters is the task of the local public health authorities. They define the bathing season and the monitoring programme for the bathing water. They also develop a bathing water profile for each beach, which includes the potential sources and risk factors of contamination, including the risk of cyanobacterial growth. Water quality data on the national level is compiled and assessed by the National Public Health Centre.

Actions and progress towards the target: The introduction of the new legislation provided a framework for the consolidated water quality monitoring, risk assessment and risk management of bathing waters. However, the monitoring was delegated to accredited laboratories contracted by the operator of the bathing water. Under this system, it was difficult to ensure the timely sampling and reporting of the water quality data, and the ratio of insufficiently monitored bathing waters was high (up to 20%). Though the non-compliant water quality was rare (1-4 bathing waters were classified as poor in the past years), the high percentage of non-classified bathing water hindered the preparation of a reliable national assessment. Through repeated training of the local public health authorities and the development of a guidance note, by the 2015 bathing season the rate of insufficiently monitored bathing waters was reduced below 5%. The public health authorities were also informed on potential and necessary interventions for water quality improvement. As a result, 97% of the classified bathing waters was good or excellent after the 2015 bathing season.

A further challenge is that still many bathers choose non-identified bathing sites of unknown water quality. There is no data on the number of these sites or the bathers visiting them. Though the target was met, there are continuous tasks in the risk mitigation of bathing waters. The identification of the previously not listed, but highly used bathing waters is also a proposed target. This involves the revision of the current legislation. Cyanobacterial blooms also require future attention.

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

Target was not set in this target (sub)area, as waters used for drinking water or bathing were identified as higher priority.

Baseline situation: Aquaculture is often regarded as a pollutant, even though, extensive and semi-intensive aquaculture practices traditionally applied in Hungary may also have positive effects due to their nutrient retention, as shown by many practical water treatment applications based on this principle (pond recirculation, combined intensive-extensive systems, wetland water treatment systems). However, while there are numerous scientific data proving the water treatment effect of such artificial systems, the water quality monitoring data of aquaculture systems are fragmentary and inconclusive in this respect, causing controversies between water management authorities and aquaculture farmers.

Proposed target is to execute a detailed study on the water quality effects of different aquaculture practices, which would help settle the issue and serve as a basis for the determination of aquaculture-related water quality criteria based on scientific evidence.

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

Target 1: Revision of the national regulation.

Target date: 2013.

Target 2: Development of best practice guidance documents for the operators and the bathers. No target date was defined.

Background situation: Hungary is very rich in thermal waters due to its favourable geothermic conditions. Recreational and therapeutic bathing in enclosed waters (pools and spas) has been a popular activity since centuries, and it is one of the main touristic attractions of Hungary. The number of pools is continuously rising, and there is an increasing trend of operating pools in non-dedicated facilities as an additional attractive feature (e.g. in hotels, sport centres or apartment houses). There are approximately 1200 facilities in public use with overall 3000 pools; however, there is no centralized inventory of the facilities. Technology development and innovation in this sector are rapidly expanding. The national legislation dates from over 20 years, and thus it cannot be applied to the regulation of novel treatment technologies, pool types, and attraction features.

Actions and progress towards the target: The revised legislation was drafted with wide stakeholder participation (including pool operators and their professional associations, local and central public health authorities). The government approval of the revision is still in progress. Parallel to the legislative approach, the technical committee of the Hungarian Standards Institution (which includes operators, civil engineers, treatment specialists and public health experts) launched a series of national standards on various aspects of pool design and operation. The best practices of pool design and operation are described in the standards; however, in the absence of legal obligation the pool operators do not necessarily follow them.

The unsafe operation was shown to lead to infections (three legionellosis clusters were associated with spa pools in the recent years). The recently published decree on Legionella (see Section II) covers spa pools, but only the aspect of Legionella risk. It requires monthly monitoring of all pools where aerosol is formed, and defines levels of intervention. The best practice guidance on the implementation of the decree outlines the basics of good operational practices and risk management measures. It also includes a survey form for Legionella risk assessment.

The pools are licensed and controlled by the district and county public health authorities. However, there is no centralized data collection system on water quality like for drinking water or natural bathing water. The local public health offices report yearly on the hygiene conditions and the water quality of the pools, but only aggregated data, which is insufficient for baseline analysis. It is clear that the microbiological quality (especially for therapeutic pools) is often non-compliant, but the scope and focus of the problem can only be revealed through disaggregated data analysis.

The first step of data collection is the compilation of a national pool inventory. This was first attempted in 2008. However, the first inventory (though very thorough and detailed) was static (an Excel database), and shortly became outdated. The Information System of Waters for Human Use includes a pool and spa module, which is suitable for the collection and dynamic updating of the inventory. This will also serve as a basis for disaggregated water quality data collection. The obligation of reporting is also included in the proposed modification of the regulation.

The target on the revision of legislation was not yet met, thus the target date shall be revised. Though the standards of pool design and operation are available, a more comprehensive guidance document is planned, focusing on the public health aspect. The establishment of the national pool and spa inventory and water quality database is also a potential target.

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

Target: The identification and registration of contaminated sites, the reduction or elimination of the risk of contamination and the assistance of reduction or elimination of contamination (under the National Environmental Remediation Program (OKKP)).

Baseline situation: National Environmental Remediation Program (OKKP) started in 1996. The legal framework was set up in 2000. The first countrywide inventory started in 2002. The registry for contaminated sites was only paper based between 2002-2007.

Actions and progress towards the target: A digital database with GIS application tools (FAVI KÁRINFO) has been developed since 2007. The OKKP is a still running countrywide national program with defined state liability issues, targets and ministerial sub-programs. More than 500 remediation measures and action have taken place under state liability since 1996. In the 2007-2014 period, 23 remediation projects were finalised using partially EU development funds. OKKP has a special priority system for setting targets between project proposals.

The OKKP fulfilled its short and medium terms goals, but it needs a new long term strategy for the longer period. There are a lot of new challenges: e.g. chlorinated hydrocarbons, POP's etc. New standards, new technologies, new research and development projects are needed.

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

Target:

1. Diagnosis of the vulnerability and safeguarding of water resources.

Target date: 2007-2015.

2. Accomplishment of diagnosis for 100, and safeguarding of further 200 water resources.

Target date: 2009-2012.

3. Reduction of nitrate pollution from agricultural sources in the planned schedule.

Target date: 2015.

Baseline situation: Hungary as an EU member state is obliged to fulfil the requirements of the Water Framework Directive (2000/60/EC Directive, WFD) and to ensure the reach and maintenance of good ecological and chemical status of surface waters the good chemical and quantitative status of groundwaters at water body level. The acceptance of the RBMP2 of Hungary, which determines the range of necessary measures to be implemented programmatically in order to reach the environmental objectives, is in progress. The complete RBMP and its background documents are available at www.vizeink.hu. The revision of RBMP1 has ended. The RBMP2 was disclosed on 22 December 2015 and published by Government Decision 1155/2016 (III. 31.).

Actions and progress towards the targets: The most important chapter of the River Basin Management Plan is the Action Plan which summarizes the necessary measures needed for reaching the good status of waters – following the timing determined by the plan – at the latest by 2027.

On the whole, in 2015 7.5% of river, 11.6% of lake and 53% of groundwater bodies achieved good status. The deadline of implementing all relevant programs of measures is 2027.

In the long run, the most important task for Hungary regarding the protection of surface and groundwaters is establishing, planning in detail and implementing these measures, which have intersectoral (not only on water management) effects.

The requirements of WFD were adopted through several water related regulations to the Hungarian legal order. The tasks of River Basin Management Plan regarding the contents of the plans are described in the Government Decree 221/2004 (VII. 21.). This decree along with other water related legislation was slightly modified in the period of 2012-15 but these modifications have not changed the essence of the regulations.

The central budget did not enable a separate financial framework for WFD measures thus for this period most of the related measures were those that had been initiated on other legal basis.

The most important ones out of these, which besides protecting the status of waters directly or indirectly also contributed to the protection of the health of the concerned population:

- The development of municipal wastewater system and treatment plants (EU Urban Waste Water Directive)
- Pollution reduction programs (implementation of industrial emission directive, reduction of pollution caused by hazardous substances, etc.)
- Identification of contaminated sites, National Environmental Remediation Program
- Drinking Water Quality Improvement Program (EU Drinking Water Directive)
- Drinking Water Protection Program
- Protection against nitrate pollution of agricultural origin (EU Nitrate Directive)
- Sustainable use of thermal water resources

Besides the nationwide program-level measures further supplementary measures are needed in order to ensure the good status of water resources in accordance with the undertaken timing of the river basin management plans. Primarily concrete projects need to be executed regarding the establishment of water protection zones, riverbed rehabilitation programs, drainage and retention of inland excess water and the solution to the individual wastewater treatment of smaller settlements. These can be financed partly from national budget and mostly from the financial funding of the EU.

Other chapters of this Report give a more detailed review on the most important set of basic measures connected to the “Water and Health” relation. As a supplement other such measures which are decisive regarding the protection and sustainable use of water resources:

Water quality monitoring systems:

In Hungary the status of waters is assessed through a monitoring system, which has been functioning for more decades. It is operated mainly by the authorities of environment and nature integrated in to the Government Offices in 2015 as state responsibility but also the users of the environment have obligations to carry out analysis. The obligations for monitoring are prescribed by legal measures on governmental and ministerial level.

In case of surface waters monitoring covers the identification of biological elements and special hazardous substances which are relevant for ecological and chemical status and also those physical, chemical parameters and hydromorphological characteristics which influence ecological status.

Through surveillance monitoring in the 2008-2013 period (the observing period by the 2nd RBMP) we observed water quality of rivers on 118 locations and of lakes on 26 locations, and one wetland on a monthly basis. In addition to these with less frequent sampling, under so-called operative monitoring programs, monitoring took place on 1134 other locations, from which measurements on 838 spots were met the evaluation criteria. The aim of operative monitoring is to be able to determine more precisely the effects of the sources of special pollution and the efficiency of actions taken.

The monitoring system for observing groundwater status is composed of the so-called regional and the environmental use subsystems. Regional monitoring means the monitoring systems operated by state organizations, which observes the quantitative status of groundwaters and observes and follows the long-term changes of the qualitative status resulting from natural factors and human diffuse impacts (non-point like sources of pollution). The aim of the environmental use monitoring, which is composed of the measurements and observations made by the users of environment, is identifying the effects of point like activities on groundwaters. Regular analysis for determining the chemical and quantitative status of groundwaters take place in about 3200 sampling wells

There are special monitoring systems operating on the protection areas of different legal origin (bathing waters, protected water resources, nature conservation areas) and on significant surface waters (Lake Balaton and Lake Velence).

Reducing the chemical contamination of waters:

According to the WFD priority substances are those chemical pollutants, including pesticides, which may particularly damage the water ecosystem functions or human health. Therefore regarding these substances frequent monitoring and status assessment and, in case thresholds are exceeded, the implementation of basic and supplementary measures are necessary.

In order to control the correspondence to the thresholds the occurrence of priority substances has to be monitored in surface waters or in the biota. The pollution reduction programs, which are necessary for reaching good status in case the thresholds are exceeded, have to be presented in the river basin management plan. The authorities have to consider these environmental quality thresholds during authorization procedures.

The related legal framework was modified in 2015, imission limits became stricter following the changes of relevant EU norms, furthermore new chemicals were included among them the monitoring of some pharmaceutical derivatives in surface waters from 2016.

Under 2009/128/EC Directive on establishing a framework for Community action to achieve the sustainable use of pesticides, every Member State has to develop a National Action Plan. At the end of 2012 the Hungarian National Action Plan on Sustainable Use of Pesticides was accepted. It is important to develop and introduce integrated pest management and safer alternative plant protection technologies in Hungary. The action plan pays attention to the protection of natural habitats, wildlife and the main principles of the Water Framework Directive. The aim of the plan is to reduce the risks of pesticide use, spread its rational and appropriate use against the incorrect utilization, to substitute the need for pesticide with agro-technical methods. The implementation of the action plan is on-going.

Reducing water contamination of agricultural origin:

The Council Directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources was implemented by the Government Decree 27/2006 (II. 7.) in Hungary. The new action programme has been developed following the four-year compulsory revision. The Decree of the Minister of Agriculture and Rural Development 59/2008 (IV. 29.) concerning the content of the action programme required for the protection of waters against pollution caused by nitrates from agricultural sources and the order of

providing data and registration has been modified in December 2012, the new action programme is in effect since 11th January 2013.

Hungary developed and sent to the EU Commission its 2nd national and currently working on the 3rd report on the implementation of the nitrate directive in which the nitrate content of surface and groundwaters, the eutrophication status of surface waters and the efficiency of the action programme are assessed. The Ministry of Rural Development developed a short-term action programme in 2013 in which the size of assigned nitrate sensitive areas raised from 45.7% to approx. 69% (of the area of the country) – especially in order to improve the status of eutrophic surface waters.

According to the Action Plan the National Environmental Information System (OKIR) got renewed. According to the Act LIII of 1995 on the General Rules of Environmental Protection data on environmental impacts and state should be monitored, evaluated and made available to public. Data comes partly from the environmental, natural, water related regional authorities, and partly from the users of the environment should monitor and report according to the regulations. Data are collected in a central computer database, which is connected, to the information system of the Ministry of Agriculture. The users and the regional authorities processing data are able to put the data straight into the system. The data of different environmental sector –nature protection, waste management, air quality protection, surface and ground water protection- are organised into relative independent sector related areas. The Environmental data are in correlated and conglomerate. The environmental data are public, available at <http://web.okir.hu/>.

The important measures of RBMP2 between 2015-18 (which involves 1 241 181 million HUF EU fund between 2014-20) are as follows (in brackets the operative programme and the allocated budget):

- To build or modernise waste water treatment plant (KEHOP and VP: 92 567 million HUF)
- Reduction of nutrient and pesticides from agricultural sources (KEHOP and VP: 285 057 million HUF)
- Reduction or elimination pollution, including the remediation of abandoned contaminated sites (KEHOP and TOP: 112 793 million HUF)
- Restoration of longitudinal interoperability, reduction of kneading and water level control (KEHOP: 20 million HUF)
- Improvement of hydromorphological conditions apart from longitudinal interoperability (KEHOP: 16 461 million HUF)
- Improving water regime conditions and the ecological restoration of low water (KEHOP and VP: 27 621 million HUF)
- Enforce ecological aspects in the implementation of sustainable water use (TOP: 9 487 million HUF)

- Technical support measures helping the efficient use of water in the area of irrigation, industry, power generation and the domestic sphere (VP: 24 873 million HUF)
- Advisory services for agriculture (VP: 7 550 million HUF)
- Measures to protect drinking water sources (protection areas, buffer zones), drinking water quality improvement program (KEHOP: 59 646 million HUF)
- Development of research, knowledge base to reduce uncertainty (KEHOP: 4 800 million HUF)
- Reduction of sediment and pollutants load from soil erosion and/or surface runoff (VP: 218 768 million HUF)
- Prevention and control the spread of invasive, non-native species and diseases (VP and TOP: 47 860 million HUF)
- Prevention and control of the adverse effects of recreation (also including fishing) effects (MAHOP: 105 million HUF)
- Prevention and control of the harmful effects of fishing and other activities that involve removing animals and plants (MAHOP: 945 million HUF)
- Prevention and control of pollution from settlements, built infrastructure and transport (KEHOP, VP AND TOP: 218 855 million HUF)
- Prevention and control of pollution from forestry activities (KEHOP, LIFE AND VP: 5614 million HUF)
- Measures to promote natural water retention (TOP VIP: 17 071 million HUF)
- Prevention and control of the harmful effects of fish farming (MAHOP: 8523 million HUF)
- Reducing the load from agricultural holdings (livestock) (VP: 15 015 million HUF)
- Sediment and nutrient retention prior to introduction into surface recipients (VP: 56 860 million HUF)
- Protect impaired water, wetland and terrestrial habitats against the effects modifying water quality and flow regime, in addition to other measures (KEHOP AND LIFE: 10 689 million HUF)

The clarification of the objectives of the 1st River Basin Management Plan was considered during the 2nd River Basin Management Planning process. Proposed targets under the Protocol will be in line with the above objectives.

XX. The frequency of the publication of information on the quality of the drinking water supplied and of other waters relevant to the targets (Article 6, (2) n)

Target: Setting up a dedicated website for the Hungarian implementation of the Protocol.

Target date: 2008.

Baseline situation: The dedicated website of the Protocol was set up in 2008 as planned. Though further target was not set in this area, the progress towards more sophisticated data acquisition and analysis system was continuous.

Actions and progress towards the target: In 2013, the Office of the Chief Medical Officer (OCMO) received a grant for the development of the Information System of Waters for Human Use (HUMVI). The system is integrated under the existing platform of the OCMO. HUMVI consists of 4 water quality modules: 1. Drinking water, 2. Natural bathing water, 3. Enclosed bathing waters (pools and spas), 4. Mineral and therapeutic waters.

The modules are in different stages of development or use. The drinking water module was already used in 2015 to collect data on the quality of supplied water from the water utility operators and the local public health authorities. All previous systems used sequential data processing and data transfer step, which always inherently prone to human or process errors. HUMVI is an online system using thin client technology. All involved partners (e.g. in case of drinking water, water testing laboratories, water utility operators, local public health authorities, National Public Health Centre and OCMO) have access to the database at different user levels. Data is directly uploaded by the laboratory, validated by the water utility operator, accepted by the local authorities before it is archived into the central database and used for national analysis. The natural bathing water module will be used in the upcoming bathing season. The pool and spa module and the mineral and therapeutic water module are currently used to create and inventory of basic data, but in the future (potentially from next year) water quality data will be also uploaded.

The drinking water and bathing water quality data is published on the website of the National Public Health Centre. The system supports practically real-time publication, thus currently the limitation for the publication frequency is the reporting system, which requires 3-monthly reports from the water utility, and monthly samples from the bathing water operators. Additionally, it includes an immediate notification module for both drinking water and bathing water. Water supply operators and water testing laboratories are required to report immediately any significant non-compliance with the quality standards or any event that may cause the deterioration of water quality and a risk to human health. The module is a real-time communication platform between the operator and the public health authorities (both on the local and national level).

Potential targets include the linkage of the HUMVI to other existing or currently developed information systems, such as the communicable disease database or the surface water and groundwater database.

XXI. Additional national or local specific targets

Target: Development of the water management aspects of climate adaptation. Target date was not defined.

Baseline situation: Observance of changing meteorological parameters and the hydrological regime is based on measured data of the Hungarian Meteorological Service. Predictions for the future are prepared using model simulations, according to regional climate models for 2021-2050 and 2071-2100.

Regarding climate change, Hungary is considered highly vulnerable as the climate models prognosticate that in the 21st century the average annual temperature is expected to increase significantly for each season in the region of the Carpathian Basin. The largest changes are expected in summer (1,4 - 2,6 °C) and autumn (1,6 - 2,0 °C) by 2050 compared to the reference period (1971-2000). The same change could be a 4 °C rise by 2100.

Although most scenarios agree that in the period of 2021-2050 the total amount of annual precipitation will not change significantly, it is problematic that the decrease in the average of summer precipitation is assumed to exceed 5-10% by 2050 and even 20% by 2100. Longer dry periods are expected in the summer by 2050 and also in autumn and spring by 2100.

In addition while a significant decrease is expected in the number of frosty days, increasing number of heat waves is likely to be experienced. In contrast to the dry summer periods the number of days with heavy and intense precipitation (20 mm or more) is expected to increase in all other seasons. The possibility of water storage in soil needed for crop production has already been decreased because a large part of winter precipitation falls in the form of rain instead of snow, avoiding the gradual filling of the soil. All of these will affect directly the domestic water management.

The effect of extreme hydrological events (flood, flash flood, inland excess water, drought and water scarcity) caused by the more frequent extreme weather conditions will significantly influence the efforts of ensuring the conditions of healthy living. The consequences may cause problems in drinking water supply, agriculture (food production) or e.g. on inundated areas floods might be directly life threatening.

In Hungary most of the territory is affected by drought and there is a rising tendency of drought occurrence in the last decades. The phenomena can occur in 90% of the country, especially in the Great Hungarian Plain, eastern and southern Hungary, however the extent of drought-affected area varies greatly each year. The Homokhátság between Danube and Tisza Rivers is in the worst condition. The area exposed to the risk of flooding exceeds 35 thousand km² – which in relation to the total area of the country is among the largest in Europe – since one fourth of the country is under flood level. This involves 2.5 million of the population, one third of the cultivated land, 32% of railway network, 15% of public roads and 30% of the GDP of Hungary. Due to the climatic and geographic conditions of the country, floods, excess water and droughts can occur in the same time and in near locations.

The national objectives and tasks concerning climate change are specified first by the National Climate Change Strategy, which was accepted first for the 2008-2025 period by the Hungarian

Parliament in 2008. In accordance with the international and EU policy, the Second National Climate Change Strategy for the 2014-2025 period was submitted to the National Parliament, including the revision of the previous strategy.. Act LX of 2007 on the implementation framework of the UN Framework Convention on Climate Change and its Kyoto Protocol specifies in detail the required content of the National Climate Change Strategy. The most important among these is the so called National Adaptation Strategy which pays special attention to the prevention of risks and reduction of damages related to climate change and climate security. The national ratification of the Paris Agreement was completed, but the submission of the ratification document to the UN shall be planned in coordination with the European Union and its member states..

Actions and progress towards the target: In 2012, the Government decided on the development of the **Kvassay Jenő Plan - National Water Strategy (NWS)** to establish the water, irrigation and drought management policy of Hungary.

The preparation of the Plan was ordered by the Government Decision 1940/2013 (XII.13). The NWS is the Strategy Framework until 2030 and the medium-term action plan until 2020 of the Hungarian water management. Its main objective is the formulation of actions in order to avoid the water crisis that the world faces, to protect water for the future generations, to manage the water related risks and to effectively use water as a natural resource. The Strategy focuses on the country's main priorities bearing in mind the principles of the improvement of water quality, effective water use in every sector, integrated water management, protection of water related ecosystems, expansion of international cooperation and involvement of local communities. It prescribes the introduction and application of climate adaptation measurement into the water management practice based on the results of the river basin management planning and the flood risk assessment planning.

The NWS pursuit for integration is also in harmony with the principles and goals of the Sustainable Development Goal 6 (SDG6, Ensure availability and sustainable management of water and sanitation for all) and target 6.5 (By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate) in '2030 Agenda for Sustainable Development', as well as the Protocol.

The long-term comprehensive goals of the NWS are the outcomes of the water management expertise combined with the relevant stakeholders needs. These goals secure the achievement of the following needs:

- to ensure the equitable availability of healthy water with for all water users, while the measurement in order of different water usage, and to avoid damage caused by water are in harmony with nature by the year 2030.
- it provides also coming from the previous, the conditions to achieve and later maintain the good quantity and quality of the utilisable water resources by the year 2030

A paradigm shift is envisaged, as the prevention should come first instead of defence against damages caused by water. The target is to protect human life and national wealth to a reasonable extent. The goal in harmonisation of water management systems and land use modalities is the usage of excess water to reduce water shortages.

The Kvassay Jenő Plan will define its focus areas as follows:

1. Water retention and water distribution in order to use our water resources more efficiently
2. Water damage risk management
3. Gradual improvement of the status of water bodies in order to reach good status
4. Quality water utility service and rainwater management with bearable burden on the consumers
5. Improvement of the link between the society and water (personal, economic and decision making levels)
6. Reform of the economic incentives system for water management
7. Renewal of planning and governance

The Kvassay Jenő Plan (NWS) was finalized. It is planned to be approved in 2016, which will also mean the realization of this target. The Strategy will be one of the main pillars of the on-going revision of the targets.

Part Four

Overall evaluation of progress achieved in implementing the Protocol

The implementation of the Protocol gained a great momentum after the 1st meeting of the Parties in 2007, which resulted in the establishment of the Special Committee on Water and Health. During the drafting period, targets and progress toward the implementation of the targets were assessed. In the next phase, target dates will be revised and new or revised targets will be proposed to the Government. The reformulation of the mandate of the Expert Group and dedicated budget for its work would accelerate progress, which is – as it apparent from the current report – is highly unequal in the various target areas.

Drinking water quality improvement, water resource management and wastewater treatment are the areas where the progress is most explicit. All three relate to EU obligations and their implementation was assisted by EU funding. Though these programmes are slightly behind schedule (all were expected to be completed by 2015), the results to date are significant. The drinking water of over 90% of the population complies with the chemical requirements and 99% is free from fecal contamination. On the completion of the currently on-going development, attention shall be focused on secondary contamination in the distribution system. Collective sewage system is available for 75% of the population and almost 100% of the collected wastewater is discharged after at least secondary treatment. The 2nd River Basin Management Plan is finalized and – together with the paralelly developed National Water Strategy – sets the direction of action for the coming years. The remediation of contaminated sites reached its originally determined goals, however, there is a need for continuation as in addition to the already identified sites new priority substances also require attention.

Some of the legislative actions also proved efficient: the introduction of the obligation of water safety planning for drinking waters supplies brought joint efforts from all involved stakeholder including operators and authorities and now all large supplies – serving over 60% of the population – have developed water safety plans, which is among the best in the region. The recently finished self-assessment on equitable access to water and sanitation identified the need for further investigation and action plan on ensuring access to the marginalized groups.

There is also a still ongoing development of up-to-date information systems in various fields under the scope of the Protocol. Response systems were established in the early phases of the implementation, and they are under continuous improvement. The National Water Directorate operates an electronic warning system for floods. The National Communicable Disease Reporting System is now fully electronic and allows for real-time data flow from laboratories, GPs and hospitals. The Information System of Water for Human Use is an integrated platform for collecting quality information on drinking water, bathing water, mineral and therapeutic waters. Though regular reporting is not sufficiently frequent for designing short-term intervention, it also includes a module for real-time reporting of drinking or bathing water incidents (non-compliance or risk events), which is visible immediately for both the local and the national authorities and thus allows for timely remedial actions. Response systems would benefit from further integration or harmonization of the existing and currently developed platforms. The information systems also serve as a basis of information to the public, and most of them are designed to allow for differential access for different stakeholders.

Hungary is positioned as an active – often lead – participant of global and other water initiatives. Water was the primary theme of the Hungarian EU presidency in 2011. The EU Danube Macro-Regional Strategy (DRS) was also accepted during this period. The DRS aims to harmonise development policies on 11 priority areas among 14 countries, while the cohesion of the region and the integration of non-EU member states is also an important goal. The DRS also provides an opportunity for the participating countries to resolve transboundary challenges through joint projects. Cooperation supports sustainable financial development, the coordination of educational, research and innovation effort, job creation, establishment of a habitable environment, and reduces regional economic disparity among the countries. Hungary co-leads three priority areas (PA) within the Strategy: PA2 – sustainable energy, PA4 – protection and improvement of water quality. and PA5 – environmental risk management. In the frame of DRS and the global water cooperation, partners from the EU and the region rely strongly on the Hungarian expertise in river basin management and flood management. The European Commission, Foreign Service and other organisations requested repeatedly the Hungarian governmental institutions involved in the implementation of the DRS to share the national experience with the Asian partners of the EU or the participants of the high level dialog on water cooperation of the UN General Assembly. Hungary actively participated in the organization of water related events in 2012 adjoining the Rio+20 Conference. In 2013, Hungary organized the Budapest Water Summit with high international representation. The Budapest Declaration accepted by the Summit participants summarized the recommendations for global decision-makers and explicitly the UN. Among others, they urged the formulation of a separate water-related sustainable development goal in the post-2015 global development policy framework, reflecting the most important water related challenges, and the establishment of an intergovernmental mechanism within the UN to monitor the water goal. The next Water Summit will be organized in Budapest 28th-30th November 2016. A representative of the Hungarian Ministry of Interior is member of the International Steering Committee World Water Forum, which is a great success of the Hungarian water diplomacy.

Hungary was also co-lead in the UN Open Ended Working Group on SDGs and played crucial role in achieving a standalone water goal (Goal number 6). Hungary is ready to play further a supportive role in the implementation phase including the promotion of the Water and Health protocol as unique tool for it.

Hungary holds the chair of the UN ECE Convention on transboundary watercourses and international lakes for 3 years and organized the Meeting of the Parties in 2015. The involvement in international activities under the Protocol was strengthened. Hungary co-leads the programme area 5 on Equitable access to water and sanitation with France and the programme area 2.4 on Advancing water, sanitation and hygiene in schools with Georgia. Hungary also delegated experts to sub-regional workshops and training sessions.

The development and revision of national regulation, standards and guidance documents is a continuous task. Recent developments include, but are not limited to:

- Revision of the drinking water regulation to include parameters of radioactivity
- Revision of the Water Utility Act and its implementing regulations to clarify operational and economic responsibilities and define “protected users”.
- Development of the 2nd River Basin Management Plan and the Kvassay Jenő Plan (National Water Strategy).
- Development of regulation and best practice guidance on the assessment and mitigation of Legionella risk.
- Report on the environmental health status (including water and sanitation) of schools and other childcare environments.
- National standards on the safe management of enclosed bathing waters.

Though there is no dedicated national target on training and education, all of the above developments were achieved through wide stakeholder involvement, and the outcomes are distributed along with explanatory workshops to all users from facility operators to water and health authorities.

Though several reorganizations in both the water and the health sector, and the resulting overarching responsibilities pose a challenge for integrated implementation of the national targets, the majority of the initiatives foreseen in the 2008 target setting process were achieved by 2015. Recently developed assessments and strategies provide a good baseline for the on-going target revision process.

Part Five

Information on the person submitting the report

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

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Minister of Human Capacities of Hungary

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