Template for summary reports in accordance with article 7 of the Protocol on Water and Health adopted by the Meeting of the Parties at its second session (Bucharest, 23-25 November 2010)

Part One
General aspects

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

YES ☐ NO ☐ IN PROGRESS X

2. Were they published and, if so, how?

The proposed targets and target dates were submitted for public hearing on 22nd March 2013 they were published on the web-page of the Norwegian Food Safety Authority (NFSA). At the time of reporting the public hearing is still ongoing. The public can submitt comments to the targets and target dates until the 3rd June 2013 when the public hearing will be finished. All comments will be taken into consideration in the following work with finalizing the targets and target dates.

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.

In the ongoing prosess of setting targets there has been coordinating activity between competent authorities. The coordination has been led by the Ministry of Health and Care Services. The targets and target dates has been discussed in a work group consisting of representatives from The Ministry of Environment, The Ministry of Agriculture and Food, The Ministry of Fisheries and Coastal Affairs and The Ministry of Petroleum and Energy.

In 2008 the NFSA was requested by the Ministry of Health and Care Services to coordinate the drafting of targets in cooperation with relevant governmental bodies such as the Norwegian Institute of Public health and the Climate and Pollution Agency. A first draft was sent to the Ministry of Health and Care Services in 2010. From early 2011 – June 2012 the target proposals were refined in cooperation between the NFSA and a stronger and enlarged ministerial group. In December – February 2012 consultations with relevant NGOs were carried out and in June 2012 – January 2013 the draft was considered by the Ministry of Health and Care Services and its political leaders. On March 22nd 2013 the draft with proposed targets and target dates were submitted for public hearing.

The local administrative level is invited to comment on the proposed targets during the public hearing.

The process of setting targets and the process following the public hearing is further elaborated on in Part 4 of the report.

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

Even though targets have not yet been set in Norway the area is regulated through national legislation. Among the national laws of importance to water and sanitation are: the Planning and building act, the Pollution control act, the Food law, Acts relating to the energy water resources sector.

Norway is a member of the EEA and thereby adopts EU-legislation concerning water and sanitation. EU directives such as the water framework directive, the drinking water directive and the waste water directive are implemented in National legislation.

Norway follows the WHO recommendations.

Both Convention on the Protection and Use of Transboundary Watercourses and International Lakes and Directive 2000/60/EC on establishing a framework for Community action in the field of water policy are important documents.

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

The proposed targets are to a large extent based on existing sector targets, so there has not been any thorough cost-benefit analysis performed this time. However, in the proposed targets which are on public hearing there is given a short evaluation to what degree there will be any administrative consequences for the authorities or some increased economic burdens. Also, both official and non official reports have been published recently pointing to the water sector as a sector lagging behind in maintenance and in need of attention.

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?

The proposed targets and target dates have been submitted for public hearing and published on the web page of the NFSA. For three months, until the 3rd June 2013, the public may comment on the proposed targets and target dates. All comments will be taken into consideration when finalizing the targets and target dates. The public hearing is an important part of the norwegian democracy giving the public the possiblity to influence the developement of national legislation. See Part 4 of the report for elaboration on public participation.

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.

This report is written by The Norwegian Food Safety Authority and The Ministry of Health and Care Services, based on information from the Water register – "Vannverksregisteret" a national register holding historic data over water supply systems serving 50 or more persons or at least 20 or more households. The register holds information about aproxamatly 1800 waterworks (covering about 4.4 million people) relating to among other things the system of transportation, the water source, the water treatment plant and the water quality. The rest of the population (about 600.000 persons or 12 %) are served by smaller facilities where information about water quality and water safety is to a large degree unknown to the authorities. Data has been collected since 1998. Today all reporting is done online in the Norwegian Food Safety Authorities internet based solution MATS. Data from MATS is transferd to "Vannverksregisteret". In addition the report is based on information from The Climate and Pollution Agency and The Institute of Public Health.

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).

Norway has a high number of small drinking water systems serving between 50 and 500 persons. Many of these small systems have difficulties linked to competence, maintenance and water quality. Larger plants are more professionally managed but challenges occure here as well. The larger systems are naturally located to the cities. Out of the systems registered in "Vannverksregisteret" about 2/3 of the systems is owned by the local municipalities, the rest by private companies.

Most of the sanitation systems with a capacity of more than 50 persons are owned by the municipalities. About 17% of the households are served by mostly private systems serving less than 50 persons.

Norway has to a large extent a decentralized management system. Local authorities are therefore responsible for necessary actions in order to follow up the targets. Financial constraints may be an obstacle for the smallest municipalities since expendetures are comming out of their budgets.

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.

Climate changes are likely to affect the quality of the surface water and the functioning of both the clean water and santitation pipe systems. The discharges from combined overflow systems will increase. As more storm water will enter the sewerage systems the discharge from treatment plants will increase. As a consequence of climate changes increased attention must be paid to new problems such as parasites and mycotoxins in water.

Climate changes are taken into account in proposed targets where increased runoff is relevant.

Part Two
Common indicators[1]

I. Quality of the drinking water supplied

A. Context of the data

Please provide general information related to the context of the data provided under sections B and C below:

The parameters under C refere to substances which only to a very small degree is present in Norway.

1. What is the population coverage (in millions or per cent of total national population) of the water supplies reported under this indicator?

Norway's population was 5 051 300 people on 1st January 2013. The whole population has access to improved drinking water according to WHO standards. For approximately 600 000 persons there is little or no information about the water supply systems in use and the water quality as such. For the remaining 4.4 million persons information about the water supply systems and the water quality is registered in "Vannverksregisteret".

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

The numbers presented in this report refere to both urban and rural population. However, there is only confirmed data for those supply systems serving more than 50 persons.

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

The samples are mainly taken at point of consumption.

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. [2]

The national standards for reported parameters does not deviate from the WHO guideline values.

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

[2] In order to ensure consistency and quality of the data sets resulting from sampling programmes, countries may wish to consider ensuring compliance with appropriate international standards for sampling programmes. Examples of such international standards are the ISO 5667 family of standards, in particular:

- 5667-1:2006 Guidance on the design of sampling programmes and sampling techniques;
- 5667-3:2003 Guidance on the preservation and handling of water samples;
- 5667-5:2006 Guidance on sampling of drinking water from treatment works and piped distribution systems;
- 5667-11:2009 Guidance on sampling of groundwaters.

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.*

WatSan_S2	*Baseline value (2004)*	*Current value (2011)*
E. coli	9 % of the samples taken from supplies that had one or more positive samples.	8 % of the samples taken from supplies that had one or more positive samples, and 0,7 % of all samples taken.
Enterococci	23 % of the samples taken from supplies that had one or more positive samples.	24 % of the samples taken from supplies that had one or more positive samples.

The percentage show the amount of tests which out of all samples that indicated some deviation from the national standard had e.coli or entrococci present i.e. in 2011, 8 % of the deviating samples were positive for e.coli, but e.coli was only present in 0,7 % of all samples taken.

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:

- Fluoride;
- Nitrate and nitrite;[3]
- Arsenic;
- Lead;
- Iron.

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

Substance	*Baseline value (2004)*	*Current value (2011)*
Fluoride	0 %	0 %
Nitrate and nitrite	0,8 %	0 %
Arsenic	0 %	0 %
Lead	0 %	0 %
Iron	6 %	0 %
Additional physico-chemical[4]	30 %	18 %

[3] As defined in the WHO Guidelines for drinking-water quality.

[4] It is recommended to take into account new and emerging pressures such as climate change or agriculture practices.

parameter 1:____**pH**_____		
Additional physico-chemical parameter 2: ____**colour**_ (Limit value in Norway is 20 mg/l Pt).	21 %	18 %
Additional physico-chemical parameter 3: _____		
Additional physico-chemical parameter 4: _____		
Additional physico-chemical parameter 5: _____		

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

In filling out the following table, please specify if the numbers reported are related to all exposure routes or only related to water (in which there is epidemiological or microbiological evidence for water to have facilitated infection).[5]

	Incidence		*Number of outbreaks*	
	Baseline (2004)	*Current value (2012)*	*Baseline (2004)*	*Current value (2011)*
Cholera	0 %	0 %	0 %	0 %
Bacillary dysentery (shigellosis)	0 %	0 %	0 %	0 %
EHEC[a]	0 %	0 %	0 %	0 %
Viral hepatitis A	0 %	0 %	0 %	0 %
Typhoid fever	0 %	0 %	0 %	0 %

[a] Enterohaemorrhagic E. coli.

The diseases listed above are rare in Norway and there are no reported outbreaks. The number of registered water-related infections diseases is low in Norway. Most cases of waterborne infections cause less severe diarrhoea. Those experiencing this usually don't consult with a doctor for further examination and the cause of the diarrhoea is not detected. Presumably a large part of the cases in which people get diarrhoea will be due to poor drinking water quality.

[5] If possible, please distinguish between autochthonous and imported cases

III. Access to drinking water

Percentage of population with access to drinking water	*Baseline value (2004)*	*Current value (2011)*
Total	All	All
Urban	100 %	100 %
Rural	100 %	100 %

Please specify how access to drinking water is defined and calculated in your country.

Access to drinking water is defined as having water inside or few meters from the building. There is 100 % coverage in both urban and rural areas according to this definition.

The WHO/UNICEF[6] Joint Monitoring Programme (JMP) for Water Supply and Sanitation defines access to water supply in terms of the types of technology and levels of service afforded. Access to water-supply services is defined as the availability of at least 20 litres per person per day from an "improved" source within 1 kilometre of the user's dwelling. An "improved" source is one that is likely to provide "safe" water, such as a household connection, a borehole, a public standpipe or a protected dug well.

If your definition of access to drinking water from which the above percentages are calculated differs from that provided by the JMP, please provide the definition and describe your means of calculation.

IV. Access to sanitation

Percentage of population with access to sanitation	*Baseline value (2004)*	*Current value (2011)*
Total	99 %	100 %
Urban	81 %	83 %
Rural	18 %	17 %

Please specify how access to sanitation is defined and calculated in your country.

The whole population has access to sanitation. 83 % are connected to sewage plants serving 50 persons or more and 17 % are connected to those serving less than 50 persons.

[6] United Nations Children's Fund.

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

Water quality

On the basis of national systems of water classification, the percentage of the number of water bodies or the percentage of the volume (preferably) of water[7] falling under each defined class (e.g., in classes I, II, III, etc. for non-EU countries; for EU countries, the percentage of surface waters of high, good, moderate, poor and bad ecological status, and the percentage of groundwaters/surface waters of good or poor chemical status).

For non-European Union Countries

Status of surface waters

Percentage of surface water falling under class[a]	*Baseline value (specify the year)*	*Current value (specify the year)*
I		
II		
III		
IV		
V		
Total number/volume of water bodies classified		
Total number/volume of water bodies in the country		

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

Status of groundwaters

Percentage of groundwaters falling under class[a]	*Baseline value (specify the year)*	*Current value (specify the year)*
I		
II		
III		
IV		
V		
Total number/volume of groundwater bodies classified		
Total number/volume of groundwater bodies in the country		

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

[7] Please specify.

For European Union countries

Norway is a member of the EEA. Through the EEA agreement Norway adheres to the EU water legislation. The Norwegian legislation is therefore based on the water framework directive, the drinking water directive and the waste water directive. Due to this Norway reports under the For European Union countries part.

To map out the status of the water sources in Norway is an ongoing prosess and thereby the following overview is incomplete.

Ecological status of surface water bodies

Percentage of surface water classified as:	*Baseline value (specify the year)*	*Current value (specify the year)*
High status		11%
Good status		38%
Moderate status		24%
Poor status		9%
Bad status		2%
Total number/volume of water bodies classified		22741
Total number/volume of water bodies in the country		27186

Chemical status of surface water bodies

Percentage of surface water bodies classified as	*Baseline value (specify the year)*	*Current value (specify the year)*
Good status		2%
Poor status		1%
Total number/volume of water bodies classified		689
Total number/volume of water bodies in the country		27185

Status of groundwaters

Percentage of groundwaters classified as	*Baseline value (specify the year)*	*Current value (specify the year)*
Good quantitative status		25%
Good chemical status		-
Poor quantitative status		1,4%
Poor chemical status		-
Total number/volume of groundwater bodies classified		333
Total number/volume of groundwater bodies in the country		1260

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

Water use

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

Water exploitation index	*Baseline value (specify the year)*	*Current value (2011)*
Agriculture		3 %
Industry[a]		13 %
Domestic use[b]		41 %

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

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

For ”Industry” the figure includes both water abstraction for manufacturing industry and for energy cooling.
For ”Domestic use” the figure only refers to public water supply systems.

The values are based on information about water delivered from about 1100 water plants owned by the municipalities. Approximately 43 % of the water never reach its point of delivery due to leakage from the pipe lines.

Part Three
Targets and target dates set and assessment of progress

General remark
As mentioned Norway is in the prosess of setting targets. Proposed targets have been submitted for a broad public hearing which is ongoing at the point of reporting. Norway therefore does not report on the follow up process of the targets. This applies to the rest of this report. As such there will be no further elaboration in point 2 through 5 in the succeeding parts.

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

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

Proposed targets:

a. For each water supply system which supplies more than 500 people, the number of exceedances of the limit value for a chemical parameters in the drinking water regulation shall not be more than 2 per year. The maximum value shall not exceed the limit by more than a factor of 5. For microbiological parameters, with 0 as the threshold, the number of exceedances shall be less than 1 per year.
b. For each water supply system that supplies between 50 and 500 people, the number of exceedances of the limit value for a chemical parameters in drinking water regulations shall not be more than 3 per year. The maximum value shall not exceed the limit by more than a factor of 5. For microbiological parameters, with 0 as the threshold, the number of exceedances shall be less than 3 per year.
c. For each water supply system which supplies less than 50 persons, a random sample taken within one year shall not exceed the threshold value for the chemical parameters by more than a factor of 3. E. coli should not be detected.
d. The supervisory authority shall have up to date overview of drinking water quality for all water systems that supply more than 50 people. In addition, the supervisory authority shall maintain an overview of a representative selection of water supply systems that supply fewer than 50 people.

This is the proposed target. Similar performance measures have not existed before.

Proposed target dates are as follows: for objective a and b no later than 2015, for objective c no later than 2020 and for objective d no later than 2013.

Responsible ministries are:

- The Ministry of Health and Care Services is responsible for legislation on drinking water.
- The Ministry of the Environment is responsible for legislation that protects all types of sources and the planning part of the Planning and Building Act.

Current situation:

The EU drinking water directive (98/83/EC) is incorporated in the Norwegian drinking water regulations. The National Food Safety Authority does not have a complete overview of the number of people receiving drinking water from the different sources or the quality of the water received.

The biggest challenge when it comes to the quality of drinking water is associated with the small water supply systems which serve less than 50 persons. As mentioned these are not registered in the water register. Of those water supply systems which reported to the NFSA in 2009 95 % did not exceed the parameters set for E.coli and colour. This is self-reported data from the presumptive best water suppliers. When inspected by the NFSA the compliance is weaker.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

3. Assess the progress achieved towards the target.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

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

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

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

Proposed targets:

a) Outbreaks of disease due to waterborne transmission should have a low degree of probability and consequence.
b) The number of people per year who become acutely ill from drinking water in Norway should be averaged over a period of 5 years to less than 0.1 parts per thousand (1 per 10 000).

Objective b) is not specifically stated earlier.

Proposed target dates: no later than the end of 2017.

Responsible ministries are:

- The Ministry of Health and Care Services
- The Ministry of Agriculture and Food
- The Ministry of Local Government and Regional Development.

Current situation:
It is difficult to estimate how many people fall ill from water-borne infections caused by poor quality drinking water. Those who fall ill most often experience diarrhoea. Most pasients experiencing short-term diarrhoea don't consult with a doctor therefore it is seldom taken tests to determine the cause of the infection. In sporadic cases of diarrhoea it may be impossible to say with certainty what people have been infected of.

MSIS is the Norwegian system for notification of infectious diseases. Only those cases reported by doctors will be registered in MSIS. It is not shown in MSIS whether it is food, water or other sources of infection which is the cause of disease.

Vesuv is the Norwegian outbreak surveillance system where also the source of infection is detected. People who were affected in connection with solved drinking water outbreaks registered in Vesuv during 2005-2009, was about 2000. Most of these were linked to an outbreak of campylobacteriosis in Røros in 2007. If we include an outbreak of Giardia in Bergen in 2004, at least 8,000 people were affected in a few years. As mentioned these figures does not include sporadic cases, so there is reason to assume that the number of cases of waterborne infections are considerably larger. How much larger is difficult to estimate.

Presumably the cause of illness are partly due to inadequate protection of water sources or inadequate water treatment, sometimes leaking water pipes and inadequate safety procedures while carrying out repair work on water mains. If the waste water enters the drinking water system, there is great danger of pathogenic microorganisms in drinking water. Such induction may be due to negative pressure in the water lines because of breakage, the low pressure line and pressure, shocks, large short-term tapping, illegal cross-connections with the intake of wastewater or back flush valves that do not work.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

3. Assess the progress achieved towards the target.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

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

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

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

Proposed targets:

a) When planning areas for new housing (including recreational cottages) or industrial areas or concentration within existing settlement areas, consideration should be given to the opportunity to connect these to existing water supply systems nearby or, if necessary, make a new local common system, so as to achieve hygienic adequate, appropriate and cost and operating efficient devices.

b) Existing private water supply systems with unclear ownership and / or unsatisfactory water quality and supply security shall be upgraded or linked to existing water supply systems in order to achieve hygienically satisfactory, appropriate and cost-effective operation and devices.

The proposed targets are in line with existing requirements in relevant legislation.

No target date has been proposed as this is an ongoing objective.
However, the following indicator of achievement is proposed:

- Number of people associated with water supply systems with unsatisfactory quality or supply security.

Responsible ministries are:

- The Ministry of Environment
- The Ministry of Local Government and Regional Development.

Current situation:
Most people recieve drinking water from water supply systems that supply more than 500 people. An estimated 600 000 persons are drinking water from small water supply systems where the quality of the water is largely unknown to the authorities. There is a gradual development where smaller water systems are integrated into larger units. There is still some potential here, but this is to a large extent based on willingness from the owners.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

3. Assess the progress achieved towards the target.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

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

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

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

Proposed targets:

a) All within a wastewater cleaning district shall be connected to the public network or have other acceptable treatment solutions until this can happen.
b) Separate wastewater systems should be adapted the capacity of the recipient and function well.

The proposed targets are in line with existing requirements in relevant legislation.

No target date has been proposed as this is an ongoing objective.
However, the following indicators of achievement are proposed:

i. Affiliation percentage within an area the municipality has defined as a cleaning district to a particular treatment plant, shall be at least 98 percent.
ii. Number of people associated with wastewater for less than 50 person equivalents that do not have adequate treatment systems.

Responsible department is:

- The Ministry of Environment.

Current situation:
The number of households that are not connected to the municipal pipeline in an existing wastewater districts is low. Approximately 17 % of the population are not connected to a sewage plant, but are connected to separate treatment systems serving less than 50 persons. Most of those who are not connected have separate treatment systems. The condition of these separate treatment systems is not well documented and partly unknown. However, this does not represent a major environmental problem though some of them are likely to be in poor or less good condition. Depending on the recipient there are standarazied cleaning requirements. Municipalities may also adopt more stringent requirements.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

3. Assess the progress achieved towards the target.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

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

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

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

Water supply

Proposed targets:

a) Unplanned interruptions in water supply should be less than 0.5 hours on average per inhabitant per year and total disruption less than 1.0 hours on average per inhabitant per year.
b) Supply security must be better than 99.95 percent. (Security of supply = Number capita hours without interruption in the supply / Number capita hours total * 100).
c) Annual rehabilitation of water network should on average be at least 2 per cent at the national level until 2035.
d) Leakage from each network should be less than 25 percent by 2020.

The proposed targets are new and are set with the expectation that there must be paid more attention to reliability of the systems.

Proposed target dates:

- By 2020 the annual rehabilitation of the water supply network should on average be 2 percent.

Responsible ministries are:

- The Ministry of Health and Care Services
- The Ministry of Local Government and Regional Development.

Current situation:

There is significant leakage from pipe lines. In some places up to 50% of the water does not reach its point of destination. It is estimated that 25 percent of the pipe line system consists of pipes that have "expired", which already should have been replaced / rehabilitated, or to be replaced / rehabilitated in a short time to catch up with the maintenance backlog. Approximately 230 water utilities (which supply about 1.5 million people) have more than 10 kilometers of lines added in the period before 1971 and 259 water utilities (which supply about 1.7 million people) have more than 1 km asbestos cement pipes.

According to reports from waterworks the security of supply for municipal facilities is better than 99.99 percent nationwide. Some facilities may be less than the target.

Annual replacement of pipelines are essentially lower than the target of paragraph c). Status of the private water works is not known.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

3. Assess the progress achieved towards the target.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

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

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

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

Sewage

Proposed targets:

a) Ensure that all within a wastewater district is connected to the municipal network.
b) Leakage and overflow should not adversely affect the water quality over time.
c) The overflow shall generally be less than 2 percent of the pollution production in a wastewater districts. For large overflow discharges separation and equalization shall be considered in addition to separating and retention of surface water.
d) Integrate future climate projections in stormwater management to avoid overloading of the sewerage network.
e) Upgrading of public pipeline must include upgrading of the associated private pipeline.

The proposed targets are largely in line with existing targets (not targets according to the Protocol) and regulatory requirements.

- Proposed target dates: Municipal action plans shall be prepared no later than by the end of 2015.

Responsible ministries are:

- The Ministry of Environment
- The Ministry of Local Government and Regional Development

Current situation:

Large leaks in sewage systems may result in leakage of wastewater that can lead to contamination of waterways and potential contamination of the drinking water network. Leakage in to the network can lead to overloading of pumping stations and sewage treatment plants during periods of heavy or prolonged rainfall and thus discharge of untreated sewage.

Leakage from pipelines and control with overflow are general challenges in Norway. Benchmarking surveys done by the Norwegian Water and audits conducted by the Climate and Pollution Agency / county governor shows that there is a comprehensive and geographically varying need to maintain and upgrade the pipelines. It is also a challenge for wastewater owners to obtain an overview of their own leakages, overflows and consequences of emissions from these.

Lack of professionals, both in government and on the advice and executing level, is a major obstacle to implement the necessary upgrading of water and sewerage systems.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

3. Assess the progress achieved towards the target.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

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

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

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

Proposed targets:

a) All water and wastewater plants serving more than 50 persons, shall have an adequate internal control system that includes a risk analysis where climate impacts are included.
b) Drinking Water Sources shall be protected from contamination in order to minimize the need for water treatment.

The proposed targets are in line with existing requirements in relevant legislation.

Proposed target dates: no later than by the end of 2015.

Responsible ministries are:

- The Ministry of Health and Care Services
- The Ministry of Environment.

Current situation:
The compliance with the requirement of internal control is not good enough at the given time.
Requirements for risk analyses, internal control and audit are incorporated in the drinking water regulations. Written performance requirements are to a large extent adequate, but there are potential for improvement.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

3. Assess the progress achieved towards the target.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

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

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

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

Proposed targets:

a) All water and wastewater plants serving more than 50 persons, shall have an adequate internal control system that includes a risk analysis where climate impacts are included.
b) Drinking Water Sources shall be protected from contamination in order to minimize the need for water treatment.

The proposed targets are in line with existing requirements in relevant legislation.

Proposed target dates: no later than by the end of 2015.

Responsible ministries:

- The Ministry of Health and Care Services
- The Ministry of Environment.

Current situation:
The compliance with the requirement of internal control is not good enough at the given time. Requirements for risk analysis, internal control and audit are incorporated in the drinking water regulations and the sewage chapters in the pollution regulations, with regard to the internal control regulations that sewage plants also are controlled for. Written performance requirements are to a large extent adequate, but there are potential for improvement. Audit conducted in 2008 on 25 percent of the large sewage plants showed that risk assessment on the environment is not completed in 70 percent of these facilities. Audit conducted in 2010 showed improvement.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

3. Assess the progress achieved towards the target.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

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

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

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

Proposed targets:

a) Ensure that leaks and spills due to overflow does not conflict with user interests such as drinking water, irrigation and swimming.
b) Total overflow for a cleaning district should generally be less than 2 percent of the pollution production.
c) Surface water should as far as economically justifiable not be led to sewer system.
d) Direct discharge of untreated domestic waste should be cleared.

The proposed targets are in line with existing requirements or expectations.

No target date is proposed for target a) as this is an ongoing objective. For objective b) it is proposed that there shall be municipal plans by the end of 2015. Objective c) is proposed to be evaluated by new larger building projects. Objective d) is proposed to be met by the end of 2015.

Responsible ministry is:

- The Ministry of Environment.

Current situation:
The Planning and Building Act requires that when new buildings are established, ground- and surface water shall be dealt with. The same applies to maintenance of drainage systems around existing buildings. There are regulations requiring that the facility owner monitor the overflow of untreated sewage and record operating time for these. Overflow at the treatment plant will be covered by the discharge approval. Inspection shows that the overflow volumes are rarely quantified. In 2008 561 direct emissions was observed, primarily to open sea or to fjords. There is probably no health consequences throughout the food chain attached to these. Lack of a storm water authority makes it difficult to ensure that measures that keep water away from the sewer system are implemented.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

3. Assess the progress achieved towards the target.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

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

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))

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

Proposed targets:

a) Ensure that leaks and spills due to overflow does not conflict with user interests such as drinking water, irrigation and swimming.
b) Total overflow for a cleaning district should generally be less than 2 percent of the pollution production.
c) Surface water should as far as economically justifiable not be led to sewer system.
d) Direct discharge of untreated domestic waste should be cleared.

The proposed targets are in line with existing requirements or expectations.

No target date is proposed for target a) as this is an ongoing objective. For objective b) it is proposed that there shall be municipal plans by the end of 2015. Objective c) is proposed to be considered in connection with new larger building projects. Objective d) is proposed to be met by the end of 2015.

Responsible department is:

- The Ministry of Environment.

Current situation:
The Planning and Building Act requires that when new buildings are established, ground- and surface water shall be dealt with. The same applies to maintenance of drainage systems around existing buildings. There are regulations requiring that the facility owner monitor the overflow of untreated sewage and record operating time for these. Overflow at the treatment plant will be covered by the discharge approval. Inspection shows that the overflow volumes are rarely quantified. In 2008 561 direct emissions was observed, primarily to open sea or to fjords. There is probably no health consequences throughout the food chain attached to these. Lack of a storm water authority makes it difficult to ensure that measures that keep water away from the sewer system are implemented.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

3. Assess the progress achieved towards the target.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

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

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

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

Proposed targets:

a) Discharges from municipal wastewater sector shall comply with the requirements in pollution regulations or special permits.
b) When outlet to a drinking water source, treatment and discharge of wastewater shall be evaluated in order to prevent influence on the drinking water source.

Objective a) is consistent with existing regulatory requirements, while b) is a clarification of existing expectations proceedings.

There has not been proposed a target date for goal a) as this is an ongoing objective. For object b) there has been proposed that municipal plans based on a risk assessment should be in place by the end of 2015.

The following indicators are proposed for achievement of respectively a) and b):

i. Number of wastewater treatment plants with exceedance of the permit within none sensitive and sensitive areas along the coast, and within rivers with moderate or worse environmental status.
ii. Number of person-equivalents connected to wastewater treatment plant with discharge to vulnerable drinking water sources where the discharge results in harmful microorganisms in the water source.

Responsible department is:

- The Ministry of Environment.

Current situation:
Largely standardized requirements are set out in Chapter 12, 13 and 14 of the Pollution Control Regulations, i.e, the minimum treatment requirements are set out in the regulations. In addition formalized requirements are often given in a separate license granted by regional or local authority. The authority varies with the size of the wastewater plant. The authority is allowed to set stricter standards. Most plants are operational, but many do not operate well enough and there is a demand for an increase in cleaning power, especially until 2015. The discharges through the spillway are asumed to be too large. However, this is somewhat poorly documented.

• Urban settlement:
Emissions from the large municipal treatment plants which have sea as recipient (most often) is seldom a problem for the recipient or other user interests if the discharge is led out to a good conductive area. Discharges to freshwater recipients are entitled to treatment of phosphorus and organic matter, through enforcement of the pollution regulations and the Planning and Building Act. Based on a total of 2766 wastewater treatment plants with a capacity of 50 person equivalents existed in 2008, 561 plants where without purification.

• Rural settlement:

17 percent of the households in Norway in 2010 was connected to facilities with capacity below 50 persons-equivalents. The Municipalities are the authority and shall supervise that the provisions and decisions made according to the pollution regulations are followed. There may be problems with discharge from overflow and discharge from smaller plants, especially plants that are not connected to the public main system. There is a need to follow up the municipalities as authority on its own facilities and with their handling of outlet from separate houses.

There are almost no plants that disinfect their discharge in order to protect the drinking water. Such user conflicts are to be resolved by the coordination of the discharge site and raw water intake point. In addition, there is a strategy to build up adequate hygienic barriers in potable water systems to ensure the necessary security. There is at present no intention to put forward a requirement for disinfection as a treatment processes in sewage plants. However, there is a need to improve internal control and risk and vulnerability analyses in this area. It should be done by 2015 for those plants that do not have established good enough systems.

For small plants regular conflicts between drinking water wells and discharges are identified. This is often due to infiltration systems that do not work, poorly planned discharge locations or inadequate treatment in other facilities.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

3. Assess the progress achieved towards the target.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

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

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

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

Sludge and fertilizer products

Proposed targets:

a) Reuse at least 70 percent of produced sewage sludge as a resource and ensure that the quality of the sludge is consistent with this.
b) Organic residuals / waste will be used as fertilizer or soil conditioner as long as it has a quality that matches such use. It shall be used in amounts that is agronomic, environmental and health justifiable.
c) Facilitate better utilization of resources in residues of organic material, including the production of biogas.
d) Have proper use of organic fertilizers in relation to plant needs and conditions to reduce runoff from agricultural areas.

The proposed targets are in line with existing requirements in relevant legislation.

For objective a) the proposed target date has been met. For objective b) the proposed target date is set to no later than 2015. For objective c) the target date is set to no later than 2020.

Responsible ministries are:

- The Ministry of Health and Care Services
- The Ministry of Agriculture and Food
- The Ministry of Environment
- The Ministry of Local Government and Regional Development
- The Ministry of Fisheries and Coastal Affairs.

Current situation:

Disposal of sewage sludge is prohibited in Norway. Disposal of materials from the gratings and sieves are allowed. In 2011 about 60 percent of the produced sewage sludge were used on farmland and a further 25 percent were used as a resource in other ways. In 2009, the human intake of pollutants through food and drinking water due to the spreading of sludge on agricultural land considered to have little impact based on the substances examined. During the proceedings in the municipalities health and environmental sectors spreading of sludge near drinking water sources are especially looked on. The supply of phosphorus to waterways is an issue being worked on. The amount of sewage sludge will increase as the secondary treatment is introduced at several wastewater treatment plants and as the population increases.

Norwegian sludge generally contains low concentrations of contaminants, although some of these accumulate causing higher concentrations. Measures may be needed. Such measures will contribute to reduce emissions to the pipelines, through product regulation, requirements for discharges and control of water quality in the distribution system. There is an ongoing assessment of sludge quality to ensure that the slurry is stable, hygienic stabilised and that the levels of heavy metals and organic contaminants are

low.

Regulations on fertilizer products of organic origin are being revised and will include that limits and risks of runoff from fields where sludge is used are considered. The time for spreading in sensitive areas will be considered.

The use of organic waste as fertilizers and soil improvers is anticipated to increase. Some facilities are considering to start up production of biogas from organic waste. Research is conducted to find out if the biological rest product from such plants can be used as fertilizers and soil improvers. Most likely more mixed fertilizing products originating from different organic wastes such as manure, sewage sludge, fish waste, food waste, waste from food processing and waste from the pulp and paper industry will appear.

In agriculture-dominated areas runoff often affect water bodies significantly. Large runoff of nutrients can contribute to poor water quality and the risk of algal blooms. Steps have been taken to reduce runoff to acceptable levels. The Norwegian water regulation is focusing on this problem.

New rules on organic fertilizer with stricter requirements for both user and product quality is under work.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

3. Assess the progress achieved towards the target.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

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

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

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

Wastewater is not allowed used for irrigation. Since it is prohibited to use wastewater for irrigation in Norway no target has been proposed in this area.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

3. Assess the progress achieved towards the target.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

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

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

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

Proposed targets:

a) Water bodies used for water supply and food production should as far as practicable, be protected against supply of contaminants. This is particularly important if the use of water for food production is not subject to special requirements for water treatment.
b) All water bodies should have at least "good ecological and chemical status" and specified deadlines in approved management plans according the water regulation.
c) Waterways used for irrigation should as far as possible, be protected against discharge of pathogenic microorganisms.
d) Locations that are suitable for bathing should have excellent water quality in accordance with the EU Bathing Water Directive.

The proposed targets are in line with current expectations. Proposed targets a) and b) relates to sources for drinking water (art. 6, para. 2 (j), first part.

For targets a) and b) proposed target dates for natural water bodies of surface water (rivers, lakes and coastal waters) and groundwater that are contained in the first planning period has been set to no later than the end of 2015. This covers 20 per cent of the water bodies in Norway. For the remaining natural water bodies (second planning period) the proposed targets are planned to be met within 2021.

Responsible ministries are:

- The Ministry of Environment, The Ministry of Agriculture and Food and The Ministry of Fisheries and Coastal Affairs on measures to protect water bodies.
- The Ministry of Health and Care Services to set standards for water quality for water supply and food production.

Current situation:
Most water sources in Norway used for drinking or bathing have "good status". However, a representative overview is lacking.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

3. Assess the progress achieved towards the target.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

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

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

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

Proposed targets:

a) Water bodies used for water supply and food production should as far as practicable, be protected against supply of contaminants. This is particularly important if the use of water for food production is not subject to special requirements for water treatment.

b) All water bodies should have at least "good ecological and chemical status" and specified deadlines in approved management plans according the water regulation.

c) Waterways used for irrigation should as far as possible, be protected against discharge of pathogenic microorganisms.

d) Locations that are suitable for bathing should have excellent water quality in accordance with the EU Bathing Water Directive.

The proposed targets are in line with current expectations. Target d) relates to waters used for bathing (art. 6, para. 2 (j), second part). Proposed target date for this target is no later than by the end of 2015.

Responsible ministries are:

- The Ministry of Environment, The Ministry of Agriculture and Food and The Ministry of Fisheries and Coastal Affairs on measures to protect water bodies.
- The Ministry of Health and Care Services to set standards for water quality for water supply and food production.

Current situation:
Most water sources in Norway used for drinking or bathing have "good status". However, a good overview is lacking.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

3. Assess the progress achieved towards the target.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

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

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

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

Proposed targets:

a) Water bodies used for water supply and food production should as far as practicable, be protected against supply of contaminants. This is particularly important if the use of water for food production is not subject to special requirements for water treatment.

b) All water bodies should have at least "good ecological and chemical status" and specified deadlines in approved management plans according the water regulation.

c) Waterways used for irrigation should as far as possible, be protected against discharge of pathogenic microorganisms.

d) Locations that are suitable for bathing should have excellent water quality in accordance with the EU Bathing Water Directive.

The proposed targets are in line with current expectations. Targets a) and b) relates to the quality of waters used for aquaculture or for the production or harvesting of shellfish (art. 6 para. 2 (j), third part).

The proposed targets a) and b) is to be reached no later than by the end of 2015 for natural water bodies of surface water and groundwater and 2021 for remaining natural water bodies.

Responsible ministries are:

- The Ministry of Environment, The Ministry of Agriculture and Food and The Ministry of Fisheries and Coastal Affairs on measures to protect water bodies.
- The Ministry of Health and Care Services to set standards for water quality for water supply and food production.

Current situation:
Aquaculture and production of shellfish takes place mainly in salt water. However, hatcheries use fresh water. Discharges from aquaculture and hatcheries are governed by specific regulations and emission permits.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

3. Assess the progress achieved towards the target.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

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

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

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

Proposed targets:

a) Swimming in a pool (open or indoors) shall not cause danger for disease caused by water quality.

The proposed target is in line with current expectations.

The proposed target is to be reached no later than by the end of 2015.

Responsible department is:

- The Ministry of Health and Care Services.

Current situation:
A pool used for bathing shall follow Regulations 13 June 1996 592 to ensure adequate hygienic standard. Municipalities and their environmental health section shall follow up. Internal control is deficient in many places, but it is not recorded any outbreaks of infectious diseases due to bathing water quality over the last five years. There have however been some cases of Pontiac fever due to poorly cleaned spa pools.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

3. Assess the progress achieved towards the target.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

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

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

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

Proposed target:

a) Contaminated areas that could threaten water bodies covered by the Protocol shall have a risk assessment and if necessary be decontaminated / repaired.

The proposed target is in line with current expectations, ref. Water framework directive.

Proposed target dates:
For areas which are known by 2012 a vulnerability analysis and associated action plan shall be implemented by 2015 if it is considered necessary. For areas which are identified in the years 2011–2015 a vulnerability analyses and action plan must be in place no later than by the end of 2021.

Responsible department is:

- The Ministry of Environment.

Current situation:
Contaminated sites include contaminated sediments in harbors, runoff from mining, runoff from landfills etc..

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

3. Assess the progress achieved towards the target.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

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

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

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

Proposed targets:

a) Water resources must be protected as well as possible against pollution. Protection shall be adequate in relation to the interests that are related to the use of water.
b) There shall be no discharge through the treatment plant, overflow or large leaks that may represent an unacceptable risk to the recipient or user interests.
c) Runoff from agriculture shall not threaten target for water quality.
d) Location and operation of aquaculture facilities shall be conducted in an environmentally sustainable manner.
e) The rules should be clear to all parties in terms of expectations, requirements and responsibilities.

The proposed targets are in line with current expectations.

No target date is set since the proposed targets are ongoing.

Responsible ministries are:

- The Ministry of Agriculture and Food,
- The Ministry of Fisheries and Coastal Affairs
- The Ministry of Health and Care Services.

Current situation:
Most raw water sources that are used for drinking water supply for approved waterworks, shall be protected according to the needs that are identified in terms of treatment and the size of the water source and supply.
Annual reporting for wastewater plants to the central authority provides an overview showing to what degree the requirements are complied with. Findings through frequency based supervision is followed up through imposition of corrective measures and audit of permits when required.
Discharges from treatment plants and overflows are normally considered in order to prevent user conflicts. There are however less control of leaks that end up in recipients via stormwater outlets.
Discharges from single houses may be in conflict with wells used for drinking water.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

3. Assess the progress achieved towards the target.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

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

XX. Additional national or local specific targets

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

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

Norway has not proposed to set any additional targets to those suggested in art. 6.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

3. Assess the progress achieved towards the target.

The target and target dates were put forward for public hearing during the period march - june 2013. The hearing is still going on when this report is written.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

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

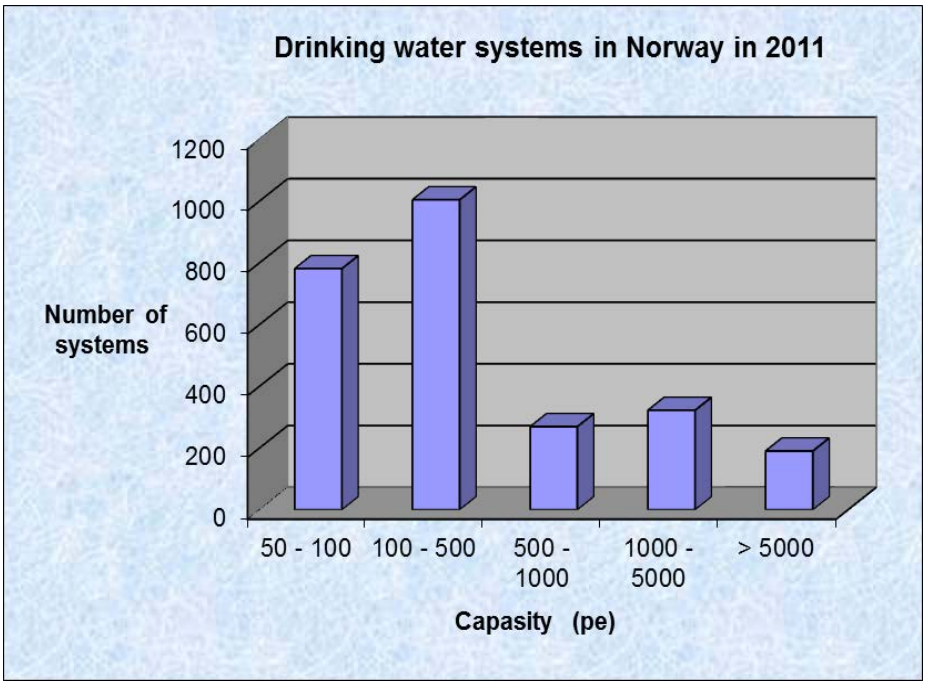
Part Four
Overall evaluation of progress achieved in implementing the Protocol

In this part of the summary report, Parties shall provide an analysis and synthesis of the status of implementation of the Protocol. Such an overall evaluation should not only be based on the issues touched upon in the previous parts, but should also include, as far as possible, a succinct overview of implementation of article 9 on public awareness, education, training, research and development and information; article 10 on public information; article 11 on international cooperation; article 12 on joint and coordinated international action; article 13 on cooperation in relation to transboundary waters; and article 14 on international support for national action.

This analysis or synthesis should provide a succinct overview of the status of and the trends and threats with regard to waters within the scope of the Protocol sufficient to inform decision makers, rather than an exhaustive assessment of these issues. It should provide an important basis for planning and decision-making as well as for the revision of the targets set, as needed.

Background

Norway has a lot of water and about 5% of the surface area is water. If we take all water recourses and use it for drinking water - we can supply about 5 billion people. A small part of the country is city areas or agricultural areas. Forests and mountains dominate the Norwegian landscape.



A characteristic for Norway is the high number of small drinking water systems, serving between 50-500 persons. Such small water supply systems serving 50-500 persons are the dominating size. About 75 of these systems do not have any water treatment.

The larger systems are naturally located to the cities.

Many of these small systems have difficulties of different kinds linked to competence, maintenance and water quality. The larger plants are more professionally managed, but even they have challenges.

The Water registry (Vannverksregisteret VREG) is a centralized registry at the National Institute of Public Health and covers about 1800 systems covering about 4.4 million people. Only systems serving more than 50 persons are registered here. The rest of the population, about 600.000 persons or 12 % are served by smaller facilities where water quality and water safety is little known to the authorities.

A large portion (about 2/3) of the systems in VREG is owned by the local municipalities, the rest by private companies.

Most of the sanitation systems with the capacity of more than 50 persons are owned by the municipalities. About 17 % of the households were served by mostly private systems smaller than 50 persons.

Challenges

The water authorities agree that we have some challenges to deal with in our present status:

- In general our drinking water- and waste water pipes are too old, and they are causing leaking problems.
  Renewal is far too slow.

- Some of our smaller public water supply systems are not up to hygienic standards.

- About 10 - 12 % of the population get their water supply from smaller private water supply systems, of which we know practically nothing about the water quality.

Climate changes are likely to affect the quality of the surface water and the functioning of both the clean water and sanitation pipe systems. The discharges from combined overflow systems will increase. As more storm water will enter the sewerage systems, the discharge from treatment plants will increase. We need to be prepared for the serious effects this might cause.

Legislation

Through the EEA agreement Norway adheres to the EU water legislation. The Norwegian legislation is therefore based on the water framework directive, the drinking water directive and the waste water directive.

Administrative responsibility

The responsibility of the Protocol lies within the Ministry of Health and care services.

The responsibility for issues covered by the Protocol on Water and Health is divided between several ministries. The three main ministries with responsibility for water quality, water quantity and sanitation are:

The Ministry of Health and Care Services is responsible for the drinking water quality and for the Norwegian drinking water regulation. The Ministry of Health and Care Services have two directorates with tasks important for drinking water. That is the Norwegian Food Safety Authority and the Norwegian directorate of Public Health. Of these two the Norwegian Food Safety Authority is the main directorate concerning regulation and inspections of the drinking water systems.

The Ministry of the Environment is responsible for all kinds of outlet from the municipalities, for conservation policy and management and for some part of the Building act. The Directorate for Nature Management and the Climate and Pollution Agency are two important directorates under this ministry.

The Ministry of Petroleum and Energy is responsible for the water as a natural recourse, and also responsible for Hydro Power plans and regulation of lakes and rivers. They are also responsible for the Petroleum activities. Norwegian Water Resources and Energy Directorate is the main directorate.

The owners of the drinking water systems and the municipalities, are responsible for handling of the regulations that are set by the Ministry of Health and care services. The municipalities are responsible for carrying out regulations regarding sanitation.

Based on principles in the EU Water Framework Directive Norway is divided into 11 river basin regions. Each river basin region has one river basin region authority and a network of other authorities joint into a river basin committee. Each of these river basin regions shall follow up the obligations that are set in the Water Framework Directive. That includes making plans for actions to obtain clean water in the region and to report back to EU (ESA).

Implementation of the protocol in Norway

Norway was one of the signatories to the Protocol in 1999 and ratified in 2004. In 2006 a Reference group for the PWH established with the purpose of securing the necessary coordination between the involved ministries. The members were the Ministry of Health, Ministry of Environment and the Ministry of Foreign Affairs.

In 2008 the Norwegian Food Safety Authority (NFSA) was requested by the Ministry of Health and Care Services to coordinate the drafting of targets in cooperation with relevant governmental bodies such as the Norwegian Institute of Public health and the Climate and Pollution Agency. The task was then considered difficult among other things because of the (at that time) lack of guidance on how to draft targets. A first draft was sent to the Ministry of Health in 2010.

By that time it was considered that the reference group was not suited to carry out the responsibility of coordination between ministries and that a stronger and enlarged group was established: It consists of the Ministry of Health, the Ministry of Environment, the Ministry of Local Government and Regional Development, the Ministry of Agriculture and the Ministry of Fisheries. From early 2011 – June 2012 the target proposals were refined in cooperation between the NFSA and the newly established ministerial group. In Des 2011 – Feb 2012: Consultations with relevant NGO's were carried out and in June 2012 – January 2013 the draft vas considered by the Ministry of Health and its political leaders.

On March 22nd 2013, the World Water day, the draft targets were sent on a broad public hearing including both dissemination to all relevant stakeholders and placing on the internet for all interested persons or bodies to read and comment on.

The deadline of the hearing is in early June. The planned progress is to have the targets set by the Government later this year hopefully in time for the third meeting of parties in Oslo 25-27th of November. Upon setting the targets, information about the final targets go out to waterworks, municipalities and other relevant parties. The drafting of an implementation plan dealing with how to reach the targets and how to monitor progress, will be drafted between now and the setting of targets.

Since no targets have been set it is of course a bit early to describe progress towards them. However several initiatives have been taken over the last decade with the aim to improve the water quality of the population. In 2004 the Norwegian Food Safety Authority was established. Earlier the food and water safety control was mainly in the hands of the municipalities. It was felt that it would be better if state authority took over the control of water facilities as most of them were owned and operated by the municipalities. After a few years of consolidating their role the NFSA has focused their activities on

drinking water. Several inspection campaigns have been targeted towards drinking water supply providing us with a closer picture of the status of at least the systems serving more than 50 people. It has been confirmed that smaller facilities are struggling to comply with our water regulation (equivalent to the DVD) and that the water pipes have a large number of improvement potential.

The Ministry of Health has asked the NFSA to give facilities orders to close gaps when possible and enforce compliance in a more stringent manner. This will continue along the other measures advised by the targets when adopted.

Article 9 on public awareness, education, training, research and development and information

The public awareness on especially drinking water has been rising in Norway due to several reports, both official and non official pointing to the water sector as a sector that is lagging behind in maintenance and in need of attention. (In third place after railroads and roads.) The ongoing hearing will be interesting in showing the support for action in this area.

There are education lines for technicians for the water sector at several of our technical high schools. However the recruitment to those educations has been low for many ears resulting in a lack of skilled technicians in the industry. The trend might be shifting lately.

The association of water and sanitation systems, Norsk Vann (Norwegian Water) is very active in arranging training coerces for their members and offers a variety of themes. A general problem is that the employers who would need such training the most often do not attend.

The NFSA also arrange education seminars for its inspectors.

Article 10 on public information

Under target area 6.2.n several drafts targets have been proposed regarding improvement of the information on the quality of drinking water and other waters:

- All drinking water systems and relevant authorities shall have information about drinking water quality, quality of bathing water, and the state regarding pollution available to the population.

- All municipalities and the Food Safety Authority shall have internet sites with relevant information regarding d.w. including an assessment.

- Private drinking water systems supplying more than 500 persons shall have the same information as municipalities.

- Smaller drinking water systems shall make information available in the manner most suited.

- Information about state of pollution in rivers and lakes shall be placed on a web site (“vannportalen”).

To make the targets themselves known the following has been done / is planned:

- The draft targets are now on a public hearing where any member of the public can read and make comments to them.

- A follow up plan for the implementation of the targets is currently under preparation. It has been suggested that this plan should include how to disseminate information to all relevant stakeholders.

Article 12 on joint and coordinated international action

Norway has taken the initiative towards creating a Nordic – Baltic network on water and sanitation. A sub regional meeting was held in Oslo 7 – 8 November 2012. The seminar was linked to the programme of work of the Protocol on Water and Health, in particular in relation to the area of work "Setting targets and reporting". The seminar was attended by twenty eight experts from the following countries: Belgium, Estonia, Hungary, Iceland, Latvia, Lithuania, Norway, and Sweden. The purpose was to discuss:

- Challenges in the area of drinking water and sanitation in the Nordic and Baltic countries;

- Role of UNECE/WHO-Europe Protocol on Water and Health in addressing these challenges;

- Opportunities for Nordic and Baltic countries to benefit from the Project Facilitation Mechanism developed under the Protocol on Water and Health in order to establish coordinated and better targeted aid and assistance policy in the water and sanitation sector;

- Possibilities for closer cooperation between Nordic and Baltic countries in the area of drinking water and sanitation as well as in the area of water management, both at national and transboundary levels.

A follow up meeting is being planned by Sweden to take place in November 2013.

Article 13 on cooperation in relation to transboundary waters

Norway have almost no challenges linked to transboundary waters and has not had any specific activity in this area. However there is contact between the Ministry of Health and Care Services and the Ministry of environment which is responsible for the Water Convention, the mother convention of the Protocol.

Article 14 on international support for national action

At the initiative of among others: Norway, the first session of the Meeting of the Parties in 2007, established an ad hoc Project Facilitation Mechanism (AHPFM) to help mainstream international support for national action in accordance with Article 14 of the Protocol on Water and Health. The third meeting of AHPFM (May 2010) renamed it to the Project Facilitation Mechanism (PFM).

In the period from 2008 to 2013 a total of seven project proposals were submitted by the countries to the PFM: Ukraine, the Republic of Moldova, Armenia, Kyrgyzstan, Tajikistan, Georgia, and Montenegro. Out of these seven submissions, three were supported by Norway (Ukraine, Kyrgyzstan and Tajikistan).

In 2010 Norway took initiative towards establishing a water fund within the European Bank for Reconstruction and Development (EBRD) aiming at securing loans and grants for projects developed under

the umbrella of the national targets of the protocol. Such a water fund was established in 2010. This fund is open to applications from prioritized countries entitled to receive ODA support.

Part Five

Information on the person submitting the report

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

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Name and address of national authority: The Norwegian Ministry of Health and Care Services

Signature:

Geir Stene-Larsen

Director General

Date: May 8th 2013

Submission

Parties are required to submit their summary reports to the joint secretariat, using the present template and in accordance with the adopted guidelines on reporting, by **29 April 2013**. Submission of the reports ahead of this deadline is encouraged, as this will facilitate the preparation of analyses and syntheses to be made available to the third session of the Meeting of the Parties.

Parties are requested to submit, to the two addresses below, an original signed copy by post and an electronic copy either on a CD-ROM or by e-mail. Electronic copies should be available in word-processing software, and any graphic elements should be provided in separate files.

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