

UNSD QUESTIONNAIRE 2001 ON ENVIRONMENT STATISTICS

Section: WATER

Country:

Focal Point:

Contact Person:

E-mail:

Tel:

Fax:

Table number	Title of table	Description of table
W1	Renewable Fresh Water Resources	The table asks for information on renewable freshwater resources available on the national territory, and of their inflows and outflows, of which they are composed.
W2	Water Use by Source	The table asks for information on gross water abstraction of fresh surface water, groundwater and other waters (including marine and brackish water).
W3	Water Supply by Supply Category and Activities	The table asks for information on the total quantity of water supplied by supply category (public, self and other), and by economic activities and households.
W4	Waste Water Treatment	The table asks for information on total waste water generation and its treatment in public and other waste water treatment plants according to treatment methods, as well as treatment in independent treatment facilities.
W5	Pollutant Discharges	The table asks for information on pollutant discharges to inland water bodies and directly into the sea.
W6	Water Quality of Selected Rivers	The table asks for information on the water quality of selected rivers by core quality parameters. If there are no rivers in the country, please include data for other significant water flows (e.g. streams, brooks) and specify changes.
W7	Water Quality of Selected Lakes	The table asks for information on the water quality of selected lakes by core quality parameters. If there are no lakes in the country, please include data for other significant water bodies (e.g. ponds, lagoons) and specify changes.
W8	Water Quality in Coastal Areas	The table asks for water quality in selected coastal areas by core quality parameters.
W9	Supplementary Information Sheet on the Water Section	The table asks for supplementary information on the water section.

Section: WATER**Country:****Contact person:****Contact institution:****E-mail:****Tel:****Fax:****Table W1: Renewable Fresh Water Resources** *(Please note that the variables marked with "!" indicate priority data)*

Code	Category	Unit	Long term annual average ^a	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
1	Precipitation ^b	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...	...
2	Evapotranspiration ^c	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...	...
3	Inflow of surface and ground waters ^d	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...	...
3.1	from country _____	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...	...
3.2	from country _____	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...	...
3.3	from country _____	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...	...
3.4	from country _____	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...	...
3.5	from country _____	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...	...
4	Outflow of surface and ground waters ^e	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...	...
4.1	to country _____	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...	...
4.2	to country _____	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...	...
4.3	to country _____	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...	...
4.4	to country _____	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...	...
4.5	to country _____	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...	...
4.6	into the sea _____	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...	...
5	Total renewable fresh water resources ^f	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...	...

Notes:

- a **Long-term annual average:** Average for the last 30 consecutive years. If the average is unavailable for 30 years, please provide average over available period and indicate the length of the time period in the footnotes.
- b **Precipitation:** Total volume of annual atmospheric wet precipitation (rain, snow, hail, dew etc.) on the national territory.
- c **Evapotranspiration:** Total volume of annual evaporation from soil, water and plant surfaces and transpiration of plants and animals. Please specify, if evapotranspiration from man-made reservoirs, drainage canals etc. is excluded and provide a description on the methodologies used in the Supplementary Information Sheet.
- d **Inflow:** Total volume of annual inflow of surface and ground water from a neighbouring country or countries. Please specify in the footnotes if inflows are regulated by bi-lateral or multi-lateral agreement(s) on shared waters.
- e **Outflow:** Total volume of annual outflow of surface and ground water to a neighbouring country or countries or into the sea. Please specify in the footnotes if outflows are regulated by bi-lateral or multi-lateral agreement(s) on shared waters.
- f **Total renewable fresh water resources:** = precipitation (1) + inflow (3) - evapotranspiration (2) - outflow (4). Please note that the outflows refer to the total allocated amounts possibly regulated by bi-lateral or multi-lateral agreement(s) on shared waters. If there are no agreements on outflows, total renewable fresh water resources = precipitation (1) + inflow (3) - evapotranspiration (2).

Footnotes

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Section: WATER

Country: _____

Contact person: _____

Contact institution: _____

E-mail: _____

Tel: _____

Fax: _____

Table W2: Water Use^a by Source *(Please note that the variables marked with "!" indicate priority data)*

Code	Category	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
1	! TOTAL water abstraction ^b	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
1.1	Total fresh surface and ground water	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
1.1.1	Fresh surface water ^c	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
1.1.2	Fresh ground water ^d	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
1.1.2.1	of which fossil ground water ^e	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
1.2	Other surface water ^f (including marine and brackish water)	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
2	Imports of water ^g (as a commodity)	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
3	Exports of water ^h (as a commodity)	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
4	TOTAL return flows ⁱ	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
5	TOTAL water consumption ^j	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
6	! Renewable groundwater available for annual abstraction ^k	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
7	Dependable surface water resources ^l	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...

Notes:

- a Water use: Water that is used for a specific purpose such as for domestic use, irrigation, or industrial processing. Water use pertains to human's interaction with and influence on the hydrologic cycle, and includes elements, such as water abstraction from surface and ground water sources, water delivery to homes and businesses, consumptive use of water, water released from waste water treatment plants and water returned to the environment. For the purposes of this questionnaire, water use for hydropower generation is excluded.
- b Total water abstraction: Water removed from any source, either permanently or temporarily, during a specified period of time. Mine water and drainage water are included. Water abstraction from ground water resources in any given time period are defined as the difference between the total amount of water withdrawn from aquifers and the total amount charged artificially or injected into aquifers. The amounts of water artificially charged or injected are attributed to abstractions from that water resource from which they were originally withdrawn.
- c Fresh surface water: 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. This includes water in transit from precipitation via the ground to a surface watercourse or other water body. For the purposes of this questionnaire, springs and bank filtration are included in surface water.
- d Fresh ground water: Water which is being held in, and can usually be recovered from, or via, an underground formation. Includes all permanent and temporary deposits of water, both artificially and naturally charged, in sufficient quantity for at least seasonal use. This category includes phreatic water-bearing strata as well as deep strata under pressure or not, contained in porous or fractured soils. For the purposes of this questionnaire, springs and bank filtration are excluded from the ground water and covered in surface waters.
- e Fossil ground water: Water infiltrated into an aquifer during an ancient geological period under climatic and morphological conditions different from the present and stored since that time.
- f Other surface water resources: Includes abstraction of direct atmospheric precipitation, sea water, permanent bodies of stagnant water both natural and artificial, mine water, drainage water (reclamations) and transitional water, such as brackish swamps, lagoons and estuarine areas.
- g Imports of water: Total volume of pure water that is imported as a commodity by pipelines or ships.
- h Exports of water: Total volume of pure water that is exported as a commodity by pipelines or ships.
- i Total return flows: Total volume of water returned to the environment during a specified time period.
- j Total water consumption: The part of water intake that is evaporated, incorporated into products or crops, consumed by humans and livestock or otherwise removed from the hydrological cycle. It can be calculated as: $\text{consumption} = \text{total abstractions} + \text{imports} - \text{exports} - \text{total returns}$.
- k Renewable ground water available for annual abstraction: Estimate of the volume of water that can be abstracted annually from the national ground water resources under prevailing economic and technical conditions, without leading to the depletion of the resource base in the long-term.
- l Dependable surface water resources: Portion of the surface water resource that can be depended on for annual water development over the long-term, usually 19 out of 20 consecutive years. If the time period is different, please specify the time-period or the per centage of years included in the footnotes. This items yields information about the average annual long-term availability of surface waters for use in human activities.

Footnotes

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Section: WATER

Country: _____

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E-mail: _____

Tel: _____

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Table W3: Water Supply by Supply Category^a and Activities *(Please note that the variables marked with "I" indicate priority data)*

Code	Category	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	
1	I TOTAL national supply	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
1.1	I Public supply^b to:	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
1.1.1	All economic activities	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
1.1.1.1	Agriculture and forestry	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
1.1.1.1.1	of which for irrigation purposes	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
1.1.1.2	Fishing	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
1.1.1.3	Manufacturing ^c	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
1.1.1.3.1	of which for cooling purposes	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
1.1.1.4	Electricity, gas and water supply	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
1.1.1.4.1	of which for cooling purposes	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
1.1.1.5	Other economic activities	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
1.1.2	Households	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
1.2	I Self-supply^d to:	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
1.2.1	All economic activities	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
1.2.1.1	Agriculture and forestry	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
1.2.1.1.1	of which for irrigation purposes	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
1.2.1.2	Fishing	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
1.2.1.3	Manufacturing ^c	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
1.2.1.3.1	of which for cooling purposes	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
1.2.1.4	Electricity, gas and water supply	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
1.2.1.4.1	of which for cooling purposes	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
1.2.1.5	Other economic activities	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
1.2.2	Households	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
1.3	I Other supply^e	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
2	TOTAL water losses^f during transport	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
2.1	of which in public supply	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
2.2	of which in self supply	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...
2.3	of which in other supply	mio m ³ /y	...	...	...	...	...	...	...	...	...	...	...

Notes:

- a Water supply: Delivery of water to users and abstraction for own final use. Total water supply excludes water used in hydropower generation.
- b Public supply: Water supply by public water works. Deliveries of water from one water works to another are excluded.
- c Manufacturing: Include disaggregated data if available according to ISIC. Rev. 3 activities 15 to 37 in Supplementary Information Sheet.
- d Self-supply: Abstraction of water for own final use.
- e Other supply: Any supply of water not specified elsewhere. In particular, supplies from commercial and industrial establishments, whether marketed or not. Also included is supply of reusable water.
- f Water loss during transport: Volume of water lost during transport between a point of abstraction and a point of use, and between points of use and reuse.

Footnotes

[illegible]

Section: WATER**Country:****Contact person:****Contact institution:****E-mail:****Tel:****Fax:****Table W4: Waste Water Treatment^a** *(Please note that the variables marked with "!" indicate priority data)*

Code	Category	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
1	! Population connected to waste water treatment	%	...	...	...	...	...	...	...	...	...	...	...
2	! TOTAL number of waste water treatment plants ^b	number	...	...	...	...	...	...	...	...	...	...	...
3	! TOTAL waste water generated	1000 m ³ /d	...	...	...	...	...	...	...	...	...	...	...
3.1	! Non-treated waste water ^c	1000 m ³ /d	...	...	...	...	...	...	...	...	...	...	...
3.2	! Treated in <u>public treatment</u> ^d plants	1000 m ³ /d	...	...	...	...	...	...	...	...	...	...	...
3.2.1	Mechanical treatment ^e	1000 m ³ /d	...	...	...	...	...	...	...	...	...	...	...
3.2.2	Biological treatment ^f	1000 m ³ /d	...	...	...	...	...	...	...	...	...	...	...
3.2.3	Advanced treatment ^g	1000 m ³ /d	...	...	...	...	...	...	...	...	...	...	...
3.3	! Treated in <u>other treatment</u> ^h plants	1000 m ³ /d	...	...	...	...	...	...	...	...	...	...	...
3.3.1	Mechanical treatment ^e	1000 m ³ /d	...	...	...	...	...	...	...	...	...	...	...
3.3.2	Biological treatment ^f	1000 m ³ /d	...	...	...	...	...	...	...	...	...	...	...
3.3.3	Advanced treatment ^g	1000 m ³ /d	...	...	...	...	...	...	...	...	...	...	...
3.4	Treated in <u>independent treatment facilities</u> ⁱ	1000 m ³ /d	...	...	...	...	...	...	...	...	...	...	...

Notes:

- a **Waste water treatment:** Process to render waste water fit to meet applicable environmental standards or other quality norms for recycling or reuse. Three broad types of treatment are distinguished in the questionnaire: mechanical, biological and advanced. For the purpose of calculating the total amount of treated waste water, volumes reported should be shown only under the highest type of treatment to which it was subjected. Thus, waste water treated mechanically as well as biologically should be shown under biological treatment, and waste water treated in accordance with all three types should be reported under advanced treatment. Waste water treatment does not include the collection of waste water or storm water, even when no treatment will be possible without collection.

- b **Treatment plant:** Installation to render waste water, sludge or storm water fit to meet applicable environmental standards or other quality norms for recycling or reuse.

- c **Waste water:** Water which is of no further immediate value to the purpose for which it was used or in the pursuit of which it was produced because of its quality, quantity or time of occurrence. However, waste water from one user can be a potential supply to a user elsewhere. Returned cooling water is not considered to be waste water for the purpose of this questionnaire.

- d **Public waste water treatment:** All treatment of waste water in municipal treatment plants by official authorities, or by private companies for local authorities, whose main purpose is waste water treatment.

- e **Mechanical treatment:** Process of a physical and mechanical nature which results in decanted effluents and separate sludge. Mechanical processes are also used in combination and/or in conjunction with biological and advanced unit operations. Mechanical treatment is understood to include at least such processes as sedimentation, flotation, etc. To avoid double counting, water subjected to more than one treatment should be reported under the highest level of treatment only.

- f **Biological treatment:** Process which employs aerobic or anaerobic micro-organisms and results in decanted effluents and separated sludge containing microbial mass together with pollutants. Biological treatment processes are also used in combination and/or in conjunction with mechanical and advanced unit operations. To avoid double counting, water subjected to more than one type of treatment should be reported under the highest level of treatment only.

- g **Advanced treatment:** Process capable of reducing specific constituents in waste water not normally achieved by other treatment options. For the purpose of this questionnaire, advanced treatment technology covers all unit operations which are not considered to be mechanical or biological. In waste water treatment this includes e.g. chemical coagulation, flocculation and precipitation, break-point chlorination, stripping, mixed media filtration, micro-screening, selective ion exchange, activated carbon adsorption, reverse osmosis, ultra-filtration, electro-flotation. Advanced treatment processes are also used in combination and/or in conjunction with mechanical and biological unit operations. To avoid double counting, water subjected to more than one treatment should be reported under the highest level of treatment only.

- h **Other waste water treatment:** Treatment of waste water in private treatment plants, i.e. industrial waste water plants. Excluded from Other waste water treatment is treatment in facilities covered under independent treatment facilities such as septic tanks.

- i **Independent treatment facilities:** Individual private treatment facilities to treat domestic and other waste water in cases where a public waste water network is not available or not justified either because it would produce no environmental benefit or it would involve excessive cost. Examples of such systems are treatment in septic tanks.

Footnotes

[illegible]

Section: WATER**Country:****Contact person:****Contact institution:****E-mail:****Tel:****Fax:****Table W5: Pollutant Discharges^a** *(Please note that the variables marked with "!" indicate priority data)*

Code		Variable	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	
1	!	Biochemical Oxygen Demand (BOD ₅) ^b	1000t O ₂ /y	...	...	...	...	...	...	...	...	...	...	...
2		Chemical Oxygen Demand (COD) ^c	1000t O ₂ /y	...	...	...	...	...	...	...	...	...	...	...
3		Total Suspended Solids (TSS) ^d	1000 t/y	...	...	...	...	...	...	...	...	...	...	...
4		Total Dissolved Solids (TDS) ^e	1000 t/y	...	...	...	...	...	...	...	...	...	...	...
5	!	Total Phosphorus ^f	t P/y	...	...	...	...	...	...	...	...	...	...	...
6	!	Total Nitrogen ^g	1000t N/y	...	...	...	...	...	...	...	...	...	...	...

Notes:

- a **Pollutant discharges:** Total amount of pollution discharged to inland water bodies and directly into the sea.
- b **Biochemical Oxygen Demand (BOD₅):** Amount of dissolved oxygen required by organisms for the aerobic decomposition of organic matter present in water. This is measured at 20 degrees Celsius for a period of five days. The parameter yields information on the degree of water pollution with organic matter.
- c **Chemical Oxygen Demand (COD):** Index of water pollution measuring the mass concentration of oxygen consumed by the chemical breakdown of organic and inorganic matter. It is measured in potassium dichromate (K₂Cr₂O₇), calculated in terms of oxygen equivalent.
- d **Total Suspended Solids (TSS):** Small particles of solid pollutants in waste water that contribute to turbidity and resist separation by conventional means.
- e **Total Dissolved Solids (TDS):** Total weight of dissolved mineral constituents in water. Excessive amounts make water unsuitable for drinking or for use in industrial processes.
- f **Total Phosphorus:** Sum of inorganic and organic phosphorus compounds in water measured in terms of phosphorus. Phosphorus is an element that, while being essential to life as a key limiting nutrient factor, nevertheless contributes, together with nitrogen, to the eutrophication of water bodies.
- g **Total Nitrogen:** Sum of inorganic and organic nitrogen compounds (excluding N₂) in water measured in terms of nitrogen. Excess amounts of nitrogen, together with phosphorus, contribute to the eutrophication of water bodies.

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Section: WATER**Country:****Contact person:****Contact institution:****E-mail:****Tel:****Fax:****Table W6A: Water Quality of Selected Rivers^a** *(Please note that the variables marked with "!" indicate priority data)*

Name of River A:

Sampling frequency^c

Minimum: /year

Name of Measuring station:

Maximum: /year

Distance to mouth or downstream frontier^b:

km

Code	Variable	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	
1	! Total water discharges	1000 m ³ /d	...	...	...	...	...	...	...	...	...	...	...
2	! Biochemical Oxygen Demand (BOD ₅) ^d	mg O ₂ /l	...	...	...	...	...	...	...	...	...	...	...
3	! Dissolved Oxygen (DO) ^e	mg O ₂ /l	...	...	...	...	...	...	...	...	...	...	...
4	Chemical Oxygen Demand (COD) ^f	mg O ₂ /l	...	...	...	...	...	...	...	...	...	...	...
5	Total Dissolved Solids (TDS) ^g	mg/l	...	...	...	...	...	...	...	...	...	...	...
6	Total Phosphorus ^h	mg P/l	...	...	...	...	...	...	...	...	...	...	...
7	Total Nitrogen ⁱ	mg N/l	...	...	...	...	...	...	...	...	...	...	...
8	Faecal Coliform ^j	number/l	...	...	...	...	...	...	...	...	...	...	...
9	Lead (Pb) ^k	ug Pb/l	...	...	...	...	...	...	...	...	...	...	...
10	Mercury (Hg) ^l	ug Hg/l	...	...	...	...	...	...	...	...	...	...	...
11	Cadmium (Cd) ^m	ug Cd/l	...	...	...	...	...	...	...	...	...	...	...
12	Other ⁿ specify .....	.....	...	...	...	...	...	...	...	...	...	...	...
13	Other ⁿ , specify .....	.....	...	...	...	...	...	...	...	...	...	...	...

Notes :

- a **Selected rivers:** Report on the annual averages for the selected variables for the two most polluted rivers. The selection of a river should be based on the national economic, demographic and geographic importance of the river as well as the statistical quality and quantity of the information available for the river. If more than one monitoring station exists along the river or if more than two rivers are continuously monitored, this table should be copied as often as necessary indicating in the header the name of the river and monitoring station.

- b **Distance to mouth or downstream frontier:** Distance between measuring station and mouth or downstream frontier of the river.
- c **Sampling frequency:** Minimum and maximum number of samples taken per calendar year.
- d **Biochemical Oxygen Demand (BOD₅):** Amount of dissolved oxygen required by organisms for the aerobic decomposition of organic matter present in water. This is measured at 20 degrees Celsius for a period of five days. The parameter yields information on the degree of water pollution with organic matter.

- e **Dissolved Oxygen (DO):** Amount of gaseous oxygen (O₂) actually present in water expressed in terms of either of its presence in the volume of water (milligrams of O₂ per litre).
- f **Chemical Oxygen Demand (COD):** Index of water pollution measuring the mass concentration of oxygen consumed by the chemical breakdown of organic and inorganic matter. This is a measure of potassium permanganate (KMnO₄) consumed, calculated in terms of oxygen equivalent.

- g **Total Dissolved Solids (TDS):** Total weight of dissolved mineral constituents in water. Excessive amounts make water unsuitable for drinking or for use in industrial processes.
- h **Total Phosphorus:** Sum of phosphorus compounds in water measured in terms of phosphorus. Phosphorus is an element that, while being essential to life as a key limiting nutrient factor, nevertheless contributes - together with nitrogen - to the eutrophication of lakes and other bodies of water.

- i **Total Nitrogen:** Sum of inorganic and organic nitrogen compounds (excluding N₂) in water measured in terms of nitrogen. Nitrogen - together with phosphorus - contributes to eutrophication of water bodies.
- j **Faecal Coliform:** Microorganisms found in the intestinal tract of human beings and animals. Their presence in water indicates faecal pollution rendering water unsuitable for drinking without prior treatment.
- k **Lead (Pb):** Lead is a heavy metal whose inorganic and organic compounds are poisonous to animals and human health. Lead is used for example in gasoline, metal industry, metal products etc and contributes to the dispersion of toxins to the environment.
- l **Mercury (Hg):** Sum of organic and inorganic mercury compounds measured in terms of mercury. Mercury is a heavy metal that is toxic to humans and animals if inhaled or swallowed. In addition, mercury accumulates in the food chain.
- m **Cadmium (Cd):** Sum of organic and inorganic cadmium compounds measured as cadmium. Cadmium is a heavy metal that is toxic to humans and animals if inhaled or swallowed.
- n **Other:** If different and/or additional water quality parameters are available, please specify the name and provide data according to the time period requested.

Footnotes

[illegible]

Section: WATER**Country:****Contact person:****Contact institution:****E-mail:****Tel:****Fax:****Table W6B: Water Quality of Selected Rivers^a** *(Please note that the variables marked with "!" indicate priority data)*

Name of River B:

Sampling frequency^c:

Minimum: /year

Name of Measuring station:

Maximum: /year

Distance to mouth or downstream frontier^b:

km

Code	Variable	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	
1	! Total water discharges	1000 m ³ /d	...	...	...	...	...	...	...	...	...	...	...
2	! Biochemical Oxygen Demand (BOD ₅) ^d	mg O ₂ /l	...	...	...	...	...	...	...	...	...	...	...
3	! Dissolved Oxygen (DO) ^e	mg O ₂ /l	...	...	...	...	...	...	...	...	...	...	...
4	Chemical Oxygen Demand (COD) ^f	mg O ₂ /l	...	...	...	...	...	...	...	...	...	...	...
5	Total Dissolved Solids (TDS) ^g	mg/l	...	...	...	...	...	...	...	...	...	...	...
6	Total Phosphorus ^h	mg P/l	...	...	...	...	...	...	...	...	...	...	...
7	Total Nitrogen ⁱ	mg N/l	...	...	...	...	...	...	...	...	...	...	...
8	Faecal Coliform ^j	number/l	...	...	...	...	...	...	...	...	...	...	...
9	Lead (Pb) ^k	ug Pb/l	...	...	...	...	...	...	...	...	...	...	...
10	Mercury (Hg) ^l	ug Hg/l	...	...	...	...	...	...	...	...	...	...	...
11	Cadmium (Cd) ^m	ug Cd/l	...	...	...	...	...	...	...	...	...	...	...
12	Other ⁿ , specify .....	.....	...	...	...	...	...	...	...	...	...	...	...
13	Other ⁿ , specify .....	.....	...	...	...	...	...	...	...	...	...	...	...

Notes :

- a **Selected rivers:** Report on the annual averages for the selected variables for the two most polluted rivers. The selection of a river should be based on the national economic, demographic and geographic importance of the river as well as the statistical quality and quantity of the information available for the river. If more than one monitoring station exists along the river or if more than two rivers are continuously monitored, this table should be copied as often as necessary indicating in the header the name of the river and monitoring station.

- b **Distance to mouth or downstream frontier:** Distance between measuring station and mouth or downstream frontier of the river.
- c **Sampling frequency:** Minimum and maximum number of samples taken per calendar year.
- d **Biochemical Oxygen Demand (BOD₅):** Amount of dissolved oxygen required by organisms for the aerobic decomposition of organic matter present in water. This is measured at 20 degrees Celsius for a period of five days. The parameter yields information on the degree of water pollution with organic matter.

- e **Dissolved Oxygen (DO):** Amount of gaseous oxygen (O₂) actually present in water expressed in terms of either of its presence in the volume of water (milligrams of O₂ per litre).
- f **Chemical Oxygen Demand (COD):** Index of water pollution measuring the mass concentration of oxygen consumed by the chemical breakdown of organic and inorganic matter. This is a measure of potassium permanganate (KMnO₄) consumed, calculated in terms of oxygen equivalent.

- g **Total Dissolved Solids (TDS):** Total weight of dissolved mineral constituents in water. Excessive amounts make water unsuitable for drinking or for use in industrial processes.
- h **Total Phosphorus:** Sum of phosphorus compounds in water measured in terms of phosphorus. Phosphorus is an element that, while being essential to life as a key limiting nutrient factor, nevertheless contributes - together with nitrogen - to the eutrophication of lakes and other bodies of water.

- i **Total Nitrogen:** Sum of inorganic and organic nitrogen compounds (excluding N₂) in water measured in terms of nitrogen. Nitrogen - together with phosphorus - contributes to eutrophication of water bodies.
- j **Faecal Coliform:** Microorganisms found in the intestinal tract of human beings and animals. Their presence in water indicates faecal pollution rendering water unsuitable for drinking without prior treatment.
- k **Lead (Pb):** Lead is a heavy metal whose inorganic and organic compounds are poisonous to animals and human health. Lead is used for example in gasoline, metal industry, metal products etc and contributes to the dispersion of toxins to the environment.
- l **Mercury (Hg):** Sum of organic and inorganic mercury compounds measured in terms of mercury. Mercury is a heavy metal that is toxic to humans and animals if inhaled or swallowed. In addition, mercury accumulates in the food chain.
- m **Cadmium (Cd):** Sum of organic and inorganic cadmium compounds measured as cadmium. Cadmium is a heavy metal that is toxic to humans and animals if inhaled or swallowed.
- n **Other:** If different and/or additional water quality parameters are available, please specify the name and provide data according to the time period requested.

Footnotes

[illegible]

Section: WATER**Country:****Contact person:****Contact institution:****E-mail:****Tel:****Fax:****Table W7A: Water Quality of Selected Lakes^a** *(Please note that the variables marked with "!" indicate priority data)***Name of Lake A:****Name of Measuring station:****Surface area^b:****Mean depth:****Maximum depth:****Sampling frequency^c:****Minimum:** _____ /year**Maximum:** _____ /year**Type of stratification^d:****Inflow:****Residence time^e:****km³****years**

Code		Variable	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	
1	!	Chlorophyll-a (Chl-a) ^f	mg chl-a/l	...	...	...	...	...	...	...	...	...	...	...
2	!	Biochemical Oxygen Demand (BOD ₅) ^g	mg O ₂ /l	...	...	...	...	...	...	...	...	...	...	...
3		Chemical Oxygen Demand (COD) ^h	mg O ₂ /l	...	...	...	...	...	...	...	...	...	...	...
4		Total Dissolved Solids (TDS) ⁱ	mg/l	...	...	...	...	...	...	...	...	...	...	...
5		Total Phosphorus ^j	mg P/l	...	...	...	...	...	...	...	...	...	...	...
6		Total Nitrogen ^k	mg N/l	...	...	...	...	...	...	...	...	...	...	...
7		Faecal Coliform ^l	number/l	...	...	...	...	...	...	...	...	...	...	...
8		Lead (Pb) ^m	ug Pb/l	...	...	...	...	...	...	...	...	...	...	...
9		Mercury (Hg) ⁿ	ug Hg/l	...	...	...	...	...	...	...	...	...	...	...
10		Cadmium (Cd) ^o	ug Cd/l	...	...	...	...	...	...	...	...	...	...	...
11		Other ^p : specify .....	.....	...	...	...	...	...	...	...	...	...	...	...
12		Other ^p : specify .....	.....	...	...	...	...	...	...	...	...	...	...	...

Notes :

- a **Selected lakes:** Report on the annual averages for the selected variables at the surface layers for the two most polluted lakes. The selection of a lake should be based on the national economic, demographic and geographic importance of the lake as well as the statistical quality and quantity of the information available for the lake. If more than one monitoring station exists or if more than two lakes are continuously monitored, this table should be copied as often as necessary indicating in the header the name of the lake and monitoring station.

- b **Surface area:** Area covered by the surface of the lake.
- c **Sampling frequency:** Minimum and maximum number of samples taken per calendar year.
- d **Stratification:** The arrangement of a body of a lake into two or more horizontal layers of differing characteristics, such as temperature, density, etc. The main types refer to dimictic (two annual overturns in a water body) and meromictic (water remains partly or wholly unmixed with the main water mass).

- e **Residence time:** The time interval that a portion of water is in a lake.
- f **Chlorophyll-a (Chl-a):** Chlorophyll is the green compound found in leaves and green stems of plants that consists of two components, chlorophyll a and b in the ratio of 3 to 1. Chlorophyll-a is an indicator of the degree of eutrophication of water bodies.
- g **Biochemical Oxygen Demand (BOD₅):** Amount of dissolved oxygen required by organisms for the aerobic decomposition of organic matter present in water. This is measured at 20 degrees Celsius for a period of five days. The parameter yields information on the degree of water pollution with organic matter.
- h **Chemical Oxygen Demand (COD):** Index of water pollution measuring the mass concentration of oxygen consumed by the chemical breakdown of organic and inorganic matter. This is a measure of potassium permanganate (KMnO₄) consumed, calculated in terms of oxygen equivalent.
- i **Total Dissolved Solids (TDS):** Total weight of dissolved mineral constituents in water. Excessive amounts make water unsuitable for drinking or for use in industrial processes.
- j **Total Phosphorus:** Sum of phosphorus compounds in water measured in terms of phosphorus. Phosphorus is an element that, while being essential to life as a key limiting nutrient factor, nevertheless contributes - together with nitrogen - to the eutrophication of lakes and other bodies of water.

- k **Total Nitrogen:** Sum of inorganic and organic nitrogen compounds (excluding N₂) in water measured in terms of nitrogen. Nitrogen - together with phosphorus - contributes to eutrophication of water bodies.
- l **Faecal Coliform:** Microorganisms found in the intestinal tract of human beings and animals. Their presence in water indicates faecal pollution rendering water unsuitable for drinking without prior treatment.
- m **Lead (Pb):** Sum of organic and inorganic lead compounds measure in tems of lead. Lead is a heavy metal whose compounds are poisonous to human and animals.
- n **Mercury (Hg):** Sum of organic and inorganic mercury compounds measured in terms of mercury. Mercury is a heavy metal that is toxic to humans and animals if inhaled or swallowed. In addition, mercury accumulates in the food chain.
- o **Cadmium (Cd):** Sum of organic and inorganic cadmium compounds measured as cadmium. Cadmium is a heavy metal that is toxic to humans and animals if inhaled or swallowed.
- p **Other:** If different and/or additional water quality parameters are available, please specify the name and provide data according to the time period requested.

Footnotes

[illegible]

Section: WATER**Country:****Contact person:****Contact institution:****E-mail:****Tel:****Fax:****Table W7B: Water Quality of Selected Lakes^a** *(Please note that the variables marked with "!" indicate priority data)*

Name of Lake B:

Name of Measuring station:

Surface area^b:

Mean depth:

Maximum depth:

Sampling frequency^c

Minimum: _____ /year

Maximum: _____ /year

Type of stratification^d:

Inflow:

km³Residence time^e

years

Code	Variable	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	
1	! Chlorophyll-a (Chl-a) ^f	mg chl-a/l	...	...	...	...	...	...	...	...	...	...	...
2	! Biochemical Oxygen Demand (BOD ₅) ^g	mg O ₂ /l	...	...	...	...	...	...	...	...	...	...	...
3	Chemical Oxygen Demand (COD) ^h	mg O ₂ /l	...	...	...	...	...	...	...	...	...	...	...
4	Total Dissolved Solids (TDS) ⁱ	mg/l	...	...	...	...	...	...	...	...	...	...	...
5	Total Phosphorus ^j	mg P/l	...	...	...	...	...	...	...	...	...	...	...
6	Total Nitrogen ^k	mg N/l	...	...	...	...	...	...	...	...	...	...	...
7	Faecal Coliform ^l	number/l	...	...	...	...	...	...	...	...	...	...	...
8	Lead (Pb) ^m	ug Pb/l	...	...	...	...	...	...	...	...	...	...	...
9	Mercury (Hg) ⁿ	ug Hg/l	...	...	...	...	...	...	...	...	...	...	...
10	Cadmium (Cd) ^o	ug Cd/l	...	...	...	...	...	...	...	...	...	...	...
11	Other ^p , specify .....	.....	...	...	...	...	...	...	...	...	...	...	...
12	Other ^p , specify .....	.....	...	...	...	...	...	...	...	...	...	...	...

Notes :

- a **Selected lakes:** Report on the annual averages for the selected variables at the surface layers for the two most polluted lakes. The selection of a lake should be based on the national economic, demographic and geographic importance of the lake as well as the statistical quality and quantity of the information available for the lake. If more than one monitoring station exists or if more than two lakes are continuously monitored, this table should be copied as often as necessary indicating in the header the name of the lake and monitoring station.

- b **Surface area:** Area covered by the surface of the lake.
- c **Sampling frequency:** Minimum and maximum number of samples taken per calendar year.
- d **Stratification:** The arrangement of a body of a lake into two or more horizontal layers of differing characteristics, such as temperature, density, etc. The main types refer to dimictic (two annual overturns in a water body) and meromictic (water remains partly or wholly unmixed with the main water mass).

- e **Residence time:** The time interval that a portion of water is in a lake.
- f **Chlorophyll-a (Chl-a):** Chlorophyll is the green compound found in leaves and green stems of plants that consists of two components, chlorophyll a and b in the ratio of 3 to 1. Chlorophyll-a is an indicator of the degree of eutrophication of water bodies.
- g **Biochemical Oxygen Demand (BOD₅):** Amount of dissolved oxygen required by organisms for the aerobic decomposition of organic matter present in water. This is measured at 20 degrees Celsius for a period of five days. The parameter yields information on the degree of water pollution with organic matter.

- h **Chemical Oxygen Demand (COD):** Index of water pollution measuring the mass concentration of oxygen consumed by the chemical breakdown of organic and inorganic matter. This is a measure of potassium permanganate (KMnO₄) consumed, calculated in terms of oxygen equivalent.

- i **Total Dissolved Solids (TDS):** Total weight of dissolved mineral constituents in water. Excessive amounts make water unsuitable for drinking or for use in industrial processes.
- j **Total Phosphorus:** Sum of phosphorus compounds in water measured in terms of phosphorus. Phosphorus is an element that, while being essential to life as a key limiting nutrient factor, nevertheless contributes - together with nitrogen - to the eutrophication of lakes and other bodies of water.

- k **Total Nitrogen:** Sum of inorganic and organic nitrogen compounds (excluding N₂) in water measured in terms of nitrogen. Nitrogen - together with phosphorus - contributes to eutrophication of water bodies.
- l **Faecal Coliform:** Microorganisms found in the intestinal tract of human beings and animals. Their presence in water indicates faecal pollution rendering water unsuitable for drinking without prior treatment.
- m **Lead (Pb):** Sum of organic and inorganic lead compounds measure in terms of lead. Lead is a heavy metal whose compounds are poisonous to human and animals.
- n **Mercury (Hg):** Sum of organic and inorganic mercury compounds measured in terms of mercury. Mercury is a heavy metal that is toxic to humans and animals if inhaled or swallowed. In addition, mercury accumulates in the food chain.
- o **Cadmium (Cd):** Sum of organic and inorganic cadmium compounds measured as cadmium. Cadmium is a heavy metal that is toxic to humans and animals if inhaled or swallowed.
- p **Other:** If different and/or additional water quality parameters are available, please specify the name and provide data according to the time period requested.

Footnotes

[illegible]

Section: WATER**Country:****Contact person:****Contact institution:****E-mail:****Tel:****Fax:****Table W8A: Water Quality in Coastal Areas^a** *(Please note that the variables marked with "!" indicate priority data)*

Name of the estuary:

Name of Measuring station:

Mean depth:

Maximum depth:

Sampling frequency^b:

Minimum:

/year

Maximum:

/year

m

m

Code		Variable	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	
1	!	Chlorophyll-a (Chl-a) ^c	mg chl-a/l	...	...	...	...	...	...	...	...	...	...	...
2	!	Biochemical Oxygen Demand (BOD ₅) ^d	mg O ₂ /l	...	...	...	...	...	...	...	...	...	...	...
3		Chemical Oxygen Demand (COD) ^e	mg O ₂ /l	...	...	...	...	...	...	...	...	...	...	...
4		Total Dissolved Solids (TDS) ^f	mg/l	...	...	...	...	...	...	...	...	...	...	...
5		Total Phosphorus ^g	mg P/l	...	...	...	...	...	...	...	...	...	...	...
6		Total Nitrogen ^h	mg N/l	...	...	...	...	...	...	...	...	...	...	...
7		Faecal Coliform ⁱ	number/l	...	...	...	...	...	...	...	...	...	...	...
8		Lead (Pb) ^j	ug Pb/l	...	...	...	...	...	...	...	...	...	...	...
9		Mercury (Hg) ^k	ug Hg/l	...	...	...	...	...	...	...	...	...	...	...
10		Cadmium (Cd) ^l	ug Cd/l	...	...	...	...	...	...	...	...	...	...	...
11		Other ^m , specify .....	.....	...	...	...	...	...	...	...	...	...	...	...
12		Other ^m , specify .....	.....	...	...	...	...	...	...	...	...	...	...	...

Notes :

- a **Coastal areas:** Report on the annual averages for the selected variables at the surface water layers for two most polluted coastal areas. The selection of an estuary should be based on the national economic, demographic and geographic importance of the area as well as the statistical quality and quantity of the information available for the estuary. If more than one measuring station exists or if more than two estuaries are regularly monitored, this table should be copied as often as necessary indicating in the header the name of the estuary and monitoring station.

- b **Sampling frequency:** Minimum and maximum number of samples taken per calendar year.
- c **Chlorophyll-a (Chl-a):** Chlorophyll is the green compound found in leaves and green stems of plants that consists of two components, chlorophyll a and b in the ratio of 3 to 1. Chlorophyll-a is an indicator of the degree of eutrophication.
- d **Biochemical Oxygen Demand (BOD₅):** Amount of dissolved oxygen required by organisms for the aerobic decomposition of organic matter present in water. This is measured at 20 degrees Celsius for a period of five days. The parameter yields information on the degree of water pollution with organic matter.
- e **Chemical Oxygen Demand (COD):** Index of water pollution measuring the mass concentration of oxygen consumed by the chemical breakdown of organic and inorganic matter. This is a measure of potassium permanganate (KMnO₄) consumed, calculated in terms of oxygen equivalent.
- f **Total Dissolved Solids (TDS):** Total weight of dissolved mineral constituents in water. Excessive amounts make water unsuitable for drinking or for use in industrial processes.
- g **Total Phosphorus:** Sum of phosphorus compounds in water measured in terms of phosphorus. Phosphorus is an element that, while being essential to life as a key limiting nutrient factor, nevertheless contributes - together with nitrogen - to the eutrophication of lakes and other bodies of water.
- h **Total Nitrogen:** Sum of inorganic and organic nitrogen compounds (excluding N₂) in water measured in terms of nitrogen. Nitrogen - together with phosphorus - contributes to eutrophication of water bodies.
- i **Faecal Coliform:** Micro-organism found in the intestinal tract of human beings and animals. Its presence in water indicates faecal pollution and dangerous bacterial contamination.
- j **Lead (Pb):** Sum of organic and inorganic lead compounds measure in terms of lead. Lead is a heavy metal whose compounds are poisonous to human and animals.
- k **Mercury (Hg):** Sum of organic and inorganic mercury compounds measured in terms of mercury. Mercury is a heavy metal that is toxic to humans and animals if inhaled or swallowed. In addition, mercury accumulates in the food chain.
- l **Cadmium (Cd):** Sum of organic and inorganic cadmium compounds measured as cadmium. Cadmium is a heavy metal that is toxic to humans and animals if inhaled or swallowed.
- m **Other:** If different and/or additional water quality parameters are available, please specify the name and provide data according to the time period requested.

Footnotes

[illegible]

Section: WATER**Country:****Contact person:****Contact institution:****E-mail:****Tel:****Fax:****Table W8B: Water Quality in Coastal Areas^a** *(Please note that the variables marked with "!" indicate priority data)*

Name of the estuary:

Name of Measuring station:

Mean depth:

Maximum depth:

Sampling frequency^b:

Minimum:

/year

Maximum:

/year

m

m

Code		Variable	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	
1	!	Chlorophyll-a (Chl-a) ^c	mg chl-a/l	...	...	...	...	...	...	...	...	...	...	...
2	!	Biochemical Oxygen Demand (BOD ₅) ^d	mg O ₂ /l	...	...	...	...	...	...	...	...	...	...	...
3		Chemical Oxygen Demand (COD) ^e	mg O ₂ /l	...	...	...	...	...	...	...	...	...	...	...
4		Total Dissolved Solids (TDS) ^f	mg/l	...	...	...	...	...	...	...	...	...	...	...
5		Total Phosphorus ^g	mg P/l	...	...	...	...	...	...	...	...	...	...	...
6		Total Nitrogen ^h	mg N/l	...	...	...	...	...	...	...	...	...	...	...
7		Faecal Coliform ⁱ	number/l	...	...	...	...	...	...	...	...	...	...	...
8		Lead (Pb) ^j	ug Pb/l	...	...	...	...	...	...	...	...	...	...	...
9		Mercury (Hg) ^k	ug Hg/l	...	...	...	...	...	...	...	...	...	...	...
10		Cadmium (Cd) ^l	ug Cd/l	...	...	...	...	...	...	...	...	...	...	...
11		Other ^m , specify .....	.....	...	...	...	...	...	...	...	...	...	...	...
12		Other ^m , specify .....	.....	...	...	...	...	...	...	...	...	...	...	...

Notes :

- a **Coastal areas:** Report on the annual averages for the selected variables at the surface water layers for two most polluted coastal areas. The selection of an estuary should be based on the national economic, demographic and geographic importance of the area as well as the statistical quality and quantity of the information available for the estuary. If more than one measuring station exists or if more than two estuaries are regularly monitored, this table should be copied as often as necessary indicating in the header the name of the estuary and monitoring station.

- b **Sampling frequency:** Minimum and maximum number of samples taken per calendar year.
- c **Chlorophyll-a (Chl-a):** Chlorophyll is the green compound found in leaves and green stems of plants that consists of two components, chlorophyll a and b in the ratio of 3 to 1. Chlorophyll-a is an indicator of the degree of eutrophication.
- d **Biochemical Oxygen Demand (BOD₅):** Amount of dissolved oxygen required by organisms for the aerobic decomposition of organic matter present in water. This is measured at 20 degrees Celsius for a period of five days. The parameter yields information on the degree of water pollution with organic matter.
- e **Chemical Oxygen Demand (COD):** Index of water pollution measuring the mass concentration of oxygen consumed by the chemical breakdown of organic and inorganic matter. This is a measure of potassium permanganate (KMnO₄) consumed, calculated in terms of oxygen equivalent.
- f **Total Dissolved Solids (TDS):** Total weight of dissolved mineral constituents in water. Excessive amounts make water unsuitable for drinking or for use in industrial processes.
- g **Total Phosphorus:** Sum of phosphorus compounds in water measured in terms of phosphorus. Phosphorus is an element that, while being essential to life as a key limiting nutrient factor, nevertheless contributes - together with nitrogen - to the eutrophication of lakes and other bodies of water.
- h **Total Nitrogen:** Sum of inorganic and organic nitrogen compounds (excluding N₂) in water measured in terms of nitrogen. Nitrogen - together with phosphorus - contributes to eutrophication of water bodies.
- i **Faecal Coliform:** Micro-organism found in the intestinal tract of human beings and animals. Its presence in water indicates faecal pollution and dangerous bacterial contamination.
- j **Lead (Pb):** Sum of organic and inorganic lead compounds measure in terms of lead. Lead is a heavy metal whose compounds are poisonous to human and animals.
- k **Mercury (Hg):** Sum of organic and inorganic mercury compounds measured in terms of mercury. Mercury is a heavy metal that is toxic to humans and animals if inhaled or swallowed. In addition, mercury accumulates in the food chain.
- l **Cadmium (Cd):** Sum of organic and inorganic cadmium compounds measured as cadmium. Cadmium is a heavy metal that is toxic to humans and animals if inhaled or swallowed.
- m **Other:** If different and/or additional water quality parameters are available, please specify the name and provide data according to the time period requested.

Footnotes

[illegible]

Section: WATER**Country:****Contact person:****Contact institution:****E-mail:****Tel:****Fax:****Table W9: Supplementary Information Sheet on the Water Section**

(Calculation method used for various inflows and outflows; the reference period covered in the long-term annual averages; the methodology used for estimating evapotranspiration etc.)