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Report on the Global Assessment of Water Statistics and Water Accounts

Prepared by the United Nations Statistics Division

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Executive summary and main conclusions

The paper reports the results and conclusions of the *Global Assessment of Water Statistics and Accounts* undertaken by the United Nations Statistics Division in 2008 under the auspices of the *United Nations Committee of Experts on Environmental-Economic Accounting* (UNCEEA). The assessment had four objectives: (a) to obtain an in-depth understanding of country practices in the compilation of water statistics and accounts; (b) to assess the use of the *System of Environmental-Economic Accounting for Water* (SEEAW), (c) to support the preparation of the *International Recommendations of Water Statistics* (IRWS) and; (d) to assist with the development of targeted technical cooperation activities in these areas,. The assessment successfully collected information from 61 countries (Table 1) relating to all four objectives and also confirmed that water issues are important or very important for a large percentage of the responding countries (Table 2).

Water statistics and water accounts – which are a relatively new way of organizing water statistics and in particular of integrating traditional water statistics with economic data from the national accounts – are collected or compiled by the national statistical offices (NSOs) and a range of other government agencies. The results and conclusions of this assessment are mainly related to the NSOs, as the scope of the assessment was to identify the role of NSOs in the compilation of water statistics and accounts. The questionnaire was mostly sent to the NSOs, hence they constituted the majority of respondents (47 of the 64 responses[1]).

One of the main challenges in the production of water statistics and accounts is the large number of agencies and the diverse range of professional disciplines (e.g. physical water scientists, economists, statisticians) that are involved in their production. This makes the legal and institutional frameworks, coordination and cooperation among different agencies a key for the success and sustainability of the water statistics and water accounting programmes in countries.

Legal frameworks or other instruments related to water management and statistics exist in all the 61 responding countries and the majority of countries report cooperation with other agencies in the production of water statistics (88%) and accounts (68%). Despite this the lack of cooperation or data sharing was identified as an issue in 32% of countries for water accounts and 56% of countries for water statistics. Data are often dispersed in various agencies which collect information for their own purposes to derive sector-specific indicators (e.g. agricultural agencies collect information on irrigation water, water ministries collect information to construct water balances, etc.). This practice often leads to significant gaps (Table 8) and duplication of data collection activity.

A growing number of countries are producing water accounts and implementing the SEEAW. The results of Phase I of the Global Assessment of Environment Statistics[2] and Environmental-Economic Accounting in 2006 indicated that 22 countries were compiling water accounts and a further 8 had plans to develop them. At that time the SEEAW existed only in draft form. Two years later, in 2008, when this global assessment was conducted 33 countries were compiling water accounts and a further 11 had plans to implement them in the next two years (Table 9). Furthermore 17 were using the SEEAW as the reference material for their compilation. It is interesting to note that almost as many countries use the

[1] Note that there were three countries where two agencies responded, so while there are 64 responses, they represent 61 countries.

[2] Global Assessment of Environmental Statistics and Environmental Economic Accounting (2007): http://unstats.un.org/unsd/statcom/doc07/Analysis_SC.pdf

SEEAW for water statistics (15 countries) as do for water accounts. In addition, of the countries that now have water accounts, 20 intend to either improve the quality of the accounts already compiled or to start producing different types of accounts (Table 15). These are clear indications that the water accounts are relevant for countries and the SEEAW provides useful material for countries that want to strengthen or start the implementation. This is being increasingly recognised.

The rapid growth in the number of countries producing water accounts may be attributed to the adoption on the SEEAW as an interim international standard by the United Nations Statistical Commission in 2007 [3] and its encouragement to implement it in countries. The subsequent implementation plan carried out by UNSD, under the auspices of the UNCEEA [4] involving regional training workshops, in-country technical assistance and cooperation with existing regional programmes on water statistics and accounting, has had a positive impact on the implementation and strengthening of the water statistics and accounts programmes in countries.

Continued growth in the implementation of SEEAW can be expected when international agencies, and especially UN agencies, OECD and Eurostat, begin to use the SEEAW for the collection, compilation and dissemination of water statistics. In addition, with the completion of the IRWS and compilation guidelines by UNSD, done in cooperation with countries and international agencies [5], countries will have access to more of the information needed to compile the accounts. Countries from Africa, Asia and Oceania need to be targeted for assistance as relatively few of the countries from these regions have produced water accounts.

It should be noted that existing international data collections (e.g. UNSD/UNEP Water Questionnaire and the OECD/Eurostat Water Questionnaire) could be used to produce some of the SEEAW standard tables. The international questionnaires, however, would need to be complemented with specific economic information related to water. Importantly UNSD, OECD, Eurostat, EEA and two of the UN regional commission (ESCWA and ECLAC) have all indicated that they will implement the SEEAW. UN Water is also examining how SEEAW can assist with the development of indicators, particularly for the World Water Development Report. The compilation, presentation and increased use of the SEEAW standard tables by international agencies will be an important next step as it will further demonstrate the usefulness of the accounts for policy development.

The NSOs have played the leading role in the majority of countries in the implementation of water accounts. From the assessment and through the UNSD experience of assisting countries with the implementation of SEEAW and the development of the IRWS, it is clear that even in the countries where the NSOs are not the lead agency in water accounts they are important players for a number of reasons:

- They are often the source of the national accounts data which is essential to the production of many of the SEEAW standard accounting tables, and especially the tables from which the economic indicators are derived (e.g. those of water productivity - industry valued added per metre cubed of water use).
- They usually collect data on water abstraction, treatment and distribution through household and business surveys.
- They can bring together the various stakeholders and help to ensure the commitment to the development and implementation of a multipurpose integrated information system (i.e. the SEEAW) in countries, to meet the wide variety of users needs. Making better use of existing

[3] Report of the 38th Session of the UN Statistical Commission (2007): http://unstats.un.org/unsd/statcom/doc07/Report-English.pdf
[4] Report of the UN Committee of Experts on Environmental-Economic Accounting (2008): http://unstats.un.org/unsd/statcom/doc08/2008-25-EnvEcoAccounting-E.pdf
[5] Expert Group Meeting on International Recommendations for Water Statistics: http://unstats.un.org/unsd/envaccounting/irws/

resources would help to address problems with data availability and data quality, which were the main impeding factors for the compilation of water statistics and accounts in countries. The NSOs can lead the development of a data collection strategy to improve and further develop the water statistics and accounts programme in countries.

- They assist in the process of harmonizing definitions and classifications related to water and ensure their harmonization with those used in economic statistics.

To date, technical cooperation by UNSD has been focused on the promotion of the SEEAW and the development of IRWS and compilation guidelines for water statistics and accounts. This assessment supports the focus of this cooperation, with the SEEAW being used by many countries for the compilation of water statistics and accounts (see above), while the development of the IRWS and its compilation guidelines directly addresses the issues of the lack of harmonised classifications, internationally agreed methodology and compilation guidance material. (Table 22).

The assessment also highlights the need for the IRWS and the compilation guidelines to address the two main barriers identified by countries to producing water statistics and accounts – that is data availability and data quality (Table 22). The issue of data availability will be addressed in the IRWS in the chapter on data collection strategies as data are unavailable chiefly for three reasons: (1) it is not systematically collected by any agency; (2) it is collected but unknown to the responding agency, or (3) it is collected but unavailable because of legal, institutional or other constraints. The IRWS will also include a chapter on data quality and metadata.

A. Introduction

1. The *Global Assessment of Environment Statistics and Environmental-Economic Accounting* is an activity of UNSD conducted under the auspices of the UN Committee of Experts on Environmental-Economic Accounting (UNCEEA). It aims to assess the status of national implementation of environment statistics and environmental-economic accounting in countries. In order to reduce the reporting burden on countries, the Global Assessment was designed in two phases. Phase 1 was carried out in October 2006 and the results were presented to the UNSC at its 38th Session[6].

2. Phase 2 consists of several in depth follow-up questionnaires including the questionnaire on water statistics and accounts. The objectives of the Global Assessment of Water Statistics and Water Accounts were: (a) to obtain an in-depth understanding of country practices in the compilation of water statistics and accounts; (b) to assess the use of the *System of Environmental-Economic Accounting for Water* (SEEAW); (c) to support the preparation of the *International Recommendations of Water Statistics* (IRWS) and (d) to assist with the development of targeted technical cooperation activities in these areas .

3. The *Global Assessment of Water Statistics and Water Accounts* was launched on April 2008. It was sent to 95 countries, which included all of the countries that reported in Phase 1 that they were compiling water statistics and/or accounts or were planning to compile water statistics and/or accounts (79 countries). It also included countries that were otherwise known to have water statistics programmes. The questionnaire was sent via email and could be filled in electronically on the UNSD website. A word version was also available (See Annex II) and with the assistance of countries, unofficial translations of the questionnaire were made to Russian and French[7].

4. At the close of the survey on 30 November 2008, 64 institutions[8], from 61 countries had responded to the assessment. Of the 64 responding agencies, 47 are national statistical offices (NSOs), 7 are environment agencies, 8 are water agencies and the other two are a central bank and a ministry of economics. For the three countries for which two responses were received (one from the national statistical office and the other from another government institution) the responses were combined to form one country response. However, the individual responses were used when assessing the differences in the scope of water statistics programmes (Section C) between the national statistical offices and the other institutions.

5. Table 1 presents the responses to the assessment by economic and geographical groupings[9]. Please note that the number of countries responding to each question varies as not all questions were required to be (or were) answered by every respondent. Percentage distributions are therefore based on a different population (countries responding to the corresponding question) in each table. The list of countries that responded to the assessment and their groupings are reported in Annex I.

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[6] The report can be found at: http://unstats.un.org/unsd/envaccounting/ceea/assessment.asp

[7] The questionnaires can be found at: http://unstats.un.org/unsd/envaccounting/ceea/surveyWAS.asp

[8] Two separate responses, from different government institutions, were received from Brazil, the Dominican Republic and the Ukraine.

[9] Standard Country or Area Codes for Statistics Use, Series M No.49/Rev.4, United Nations 1998; online: http://unstats.un.org/unsd/methods/m49/m49.htm. For the purposes of this assessment developed regions consist of Northern America, Europe, Japan, Australia and New Zealand. Developing regions consists of Africa, Americas (excluding Northern America), Caribbean, Central America, South America, Asia (excluding Japan) and Oceania (excluding Australia and New Zealand). Transition economies which include CIS countries and transition countries in South-Eastern Europe have been included in the relevant economic regions.

Table 1: Summary of responses to questionnaire

	Number of countries receiving the assessment *(1)*	*Number of countries responding to the assessment* *(2)*	*Response rate* *(3)=(2)/(1)*
Total	95	61	64%
Economic regions:			
Developed regions	33	29	88%
Developing regions	62	32	52%
Economic grouping:			
Developed economies	27	24	89%
Transition economies	9	7	78%
Developing economies	59	30	51%
Geographical grouping:			
Africa	13	7	54%
Central, Eastern, Southern South-Eastern Asia and Oceania	19	8	42%
Europe and Northern America	30	27	90%
Latin America and the Caribbean	17	9	53%
Western Asia	16	10	63%

[1] This is all of countries that reported in Phase 1 that they were compiling water statistics and/or accounts or were planning to compile water statistics and/or accounts (79). It also included countries that were otherwise known to have water statistics programmes.

6. The response rate to the questionnaire varies by both economic and geographical grouping. For the economic grouping, the response rate was: 89% developed economies; 78% in transition economies; and 51% in developing economies (Table 1). For geographical groupings, the response rate ranged from a maximum of 90% in Europe and Northern America to 42% in Central, Eastern, Southern South-Eastern Asia and Oceania.

1. Organization of report

7. This report presents the main findings and conclusions of the Global Assessment of Water Statistics and Accounts. It is organized in 8 Sections. Section B presents information on the water issues and institutional arrangements, covering legal frameworks, the main data providers, and coordination mechanisms. Section C presents the scope and coverage of water statistics programmes. Section D deals with the characteristics of the water accounting programmes. Section E covers the use of international standards, recommendations and classifications, while Section F addresses spatial and temporal references. Section G summarizes future plans. Section H deals with the dissemination and uses of water statistics and water accounts. Section I presents the factors impeding the production of water statistics and water accounts.

B. Water issues and institutional arrangements

1. Water issues

8. The water issues listed in the questionnaire were all reported as important or very important by more than 70% of the countries responding to the question (Table 2). Of the five issues listed in the questionnaire, *water pollution* and *water scarcity* were the two most important issues in both developed and developing regions. For all issues, a higher percentage of responding countries from developing regions indicated importance compared to countries from developed regions. For example, over 90% of responding countries in developing regions think that *access to sanitation or safe drinking water* and *cost of providing sanitation or drinking water* is important or very important, compared to 50% and 63% respectively for developed regions.

Table 2: The importance of water issues in the country

		Very unimportant (1)	Un-important (2)	Neutral (3)	Important (4)	Very Important (5)	Total countries responding to question (6)	Percentage of countries viewing the issue as "important" or "very important" (7) =[(4)+(5)]/(6)
		No. of countries	*No. of countries*	*No. of countries*	*No. of countries*	*No. of countries*	*No. of countries*	*Percentage of countries*
Water scarcity	All regions	3	3	2	20	32	60	87%
	Developed regions	3	3	2	12	8	28	71%
	Developing regions	0	0	0	8	24	32	100%
Water pollution	All regions	1	1	2	21	36	61	93%
	Developed regions	1	1	2	16	9	29	86%
	Developing regions	0	0	0	5	27	32	100%
Access to sanitation or safe drinking water	All regions	5	3	8	12	32	60	73%
	Developed regions	5	3	6	8	6	28	50%
	Developing regions	0	0	2	4	26	32	94%
Cost of providing sanitation or drinking water	All regions	2	4	6	25	21	58	79%
	Developed regions	2	3	5	12	5	27	63%
	Developing regions	0	1	1	13	16	31	94%
Trans-boundary issues (e.g. water resource access or water pollution)	All regions	5	5	5	19	22	56	73%
	Developed regions	3	3	4	11	6	27	63%
	Developing regions	2	2	1	8	16	29	83%

2. *Legal frameworks*

9. Legal frameworks or other instruments related to water management and statistics exist in all of the countries that responded to the question (Table 3). *National water policy* and *national water laws* are the most common frameworks in countries, with little difference between developed and developing regions. It is interesting to note that *National Integrated Water Resource Management (IWRM) plan or equivalent strategic plan document* and *National Water Efficiency Plan* are more common in responding countries from developing regions (65% and 29% respectively) than in developed regions (45% and 14% respectively).

10. *Statistical Acts* relating to water data collection are in place in 50% of countries, and they were common in the countries responding from developing regions (58%) than developed regions (41%). However, at least one country (Australia) which indicated that its *Statistical Act* did not relate to water, has broad ranging powers of data collection. While the *Act* does not explicitly mention water data, it applies also to water data. Additional countries may be in a similar position.

3. Data providers and coordination

11. Table 4 summarizes the institutions that provide data or other support for the compilation of water statistics or accounts. For the compilation of water statistics, national meteorological agencies (70%), water supply and sewerage service industries (64%), environment agencies (61%) and water agencies (57%) are the main data providers. For the compilation of water accounts, data and support are mainly from environment agencies (69%), NSOs (66%) and water agencies (63%). Within the national statistics offices, national accounts/economic statistics (56%), and environment statistics (44%) and to a lesser extent social statistics (19%) contribute to the production of water accounts.

Table 3: Legal frameworks and other instruments related to water

	All regions		Developed regions		Developing Regions	
	Number of countries	*Percentage of countries*	*Number of countries*	*Percentage of countries*	*Number of countries*	*Percentage of countries*
Total countries responding to question	60	100%	29	100%	31	100%
National water policy[10]	46	77%	22	76%	24	77%
National water law	43	72%	21	72%	21	68%
National Integrated Water Resource Management (IWRM) plan or equivalent strategic plan document	33	55%	13	45%	20	65%
National Water Efficiency Plan	13	22%	4	14%	9	29%
Statistical Act	30	50%	12	41%	18	58%
Environmental Protection Act	38	63%	19	66%	18	58%

Table 4: Institutions providing data or other support for the compilation of water statistics and accounts.

	Water Statistics		Water Accounts	
	Number of countries	*Percentage of countries*	*Number of countries*	*Percentage of countries*
Total countries responding to question	61	100%	32	100%
National Statistical Office	19	31%	21	66%
National accounts / economic statistics	13	21%	18	56%
Social statistics	8	13%	6	19%
Environment statistics	12	20%	14	44%
Water Agency	35	57%	20	63%
Environment Agency	37	61%	22	69%
Agriculture Agency	26	43%	14	44%
National Meteorological Agency	43	70%	18	56%
Water supply and sewerage service industries	39	64%	18	56%
Hydrological or water research institutes	21	34%	8	25%
Other	19	31%	7	22%

Note: Four countries that do not compile water accounts currently but plan to compile in the next two years also answered this question.

12. The majority of responding institutions (88% for water statistics and 68% for water accounts) indicated that cooperation exists between institutions in the production of water statistics and accounts. The cooperation is by a variety of means and includes formal committees as well as informal agreements to share data and information between institutions. Some countries specifically noted cooperation

[10] For the purpose of this assessment, the instruments are defined as follows: National water policy is a national plan of action produced by government to guide decisions and actions relating to water and water management. Integrated Water Resource Management (IWRM) is a process "which promotes the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems".[GWP Technical Advisory Committee 2000] National Water Efficiency Plans are plans to increase water efficiency which includes increasing: (a) use efficiency, (b) recycling and reuse; and (c) supply efficiency (e.g. reducing leakage). Adapted from Jønch-Clausen 2004.

between institutions on: the harmonization of terminology; improvement of the compatibility between different data sources; improvement of data quality, and coverage of statistical surveys.

4. Agencies leading water statistics and accounts

13. In some countries, to facilitate the production of water statistics and accounts, a leading agency is identified. For water accounts, the national statistical offices are the leading agencies in 10 out of the 19 responding countries (53%) while water or environment agencies lead in 8 countries (42%) (Table 5). For water statistics, national statistics offices play a leading role in 39% of responding countries while water or environment agencies lead in 43%.

Table 5: Leading agencies in the area of water statistics and accounts

	Water Statistics		Water Accounts	
	Number of countries	*Percentage of countries*	*Number of countries*	*Percentage of countries*
Total countries responding to question	54	100%	19	100%
National statistical office	21	39%	10	53%
Environment agency	9	17%	3	16%
Water agency	14	26%	5	26%
Other	10	19%	1	5%

C. Scope of water statistics programmes

1. Data items collected

14. To assess the scope of the water statistics programmes in countries, the questionnaire sought information on the collection and compilation on 99 different data items, drawn mostly from a list of data items of the draft IRWS. These data items are used in water accounting as well as being collected through a range of international questionnaires. The complete list of data items can be seen in the questionnaire in Annex II. These data items covered hydrological and meteorological data as well as water abstracted from the environment, physical supply and use of water in the economy, the water supply and sewerage industries, wastewater, emissions to water, water quality; economic data on water, and population connected to piped water and sewerage services.

15. Table 6 shows a selection of the physical data items and the role of NSOs in the collection and compilation of water statistics compared to other institutions. The NSOs have different levels of statistical activity depending on the data item. For example, they do not directly collect hydrological and meteorological data such as precipitation or evapo-transpiration. Instead, these data are collected by other institutions and are sometimes compiled by the NSOs from these institutions. Other data items, such as the number of households connected to water supply are commonly collected by NSOs via surveys (Table 7). A number of NSOs carry out specialized water surveys and regular household surveys or censuses to collect economic data related to water, such as economic variables related to the water supply industry. A more in depth analysis indicates that for a number of data items there is duplication of data collection by NSOs and other agencies.

16. The country level information on the data items collected show that countries from all regions have large data gaps (Table 8). Apart from the economic data items, common examples of data items not collected include, volume of water used in rain-fed agriculture (the so-called green water or water abstracted from soil water), volume of precipitation collected for use, and volume of water losses in distribution.

Table 6: Activity of national statistical office compared to other institutions – selected physical data items

	National statistical offices activity				
	Regular business surveys	Specialized water surveys	Regular household surveys or census	Administrative data collected from other agencies	Data collected by other agencies
	No. of agencies	*No. of agencies*	*No. of agencies*	*No. of agencies*	*No. of agencies*
Precipitation (e.g. rainfall, snow)	0	1	0	11	29
Evapo-transpiration (evaporation and transpiration)	0	0	0	11	26
Water abstraction from:					
Surface water	3	15	0	9	17
Groundwater	2	15	0	8	18
Soil water	0	3	0	3	6
Water supply by					
The water supply industry	4	16	0	7	19
0ther industries	2	11	0	5	9
Water use by:					
Agriculture	4	10	1	9	16
Electric power generation industry	2	14	0	6	14
Other industries (e.g. mining, manufacturing, etc)	6	14	3	6	11
Households	2	15	6	8	18
Wastewater					
Collected by the sewerage industry	3	15	1	7	20
Treated by the sewerage industry	3	14	1	8	20
Discharged to inland waters	2	14	0	4	11
Discharged to sea	1	9	0	5	10
Emissions to water:					
Total nitrogen (N)	5	7	0	5	19
Total phosphorous (P)	5	7	0	5	19
Total Dissolved Solids (TDS)	4	2	0	5	18
Biochemical Oxygen Demand (BOD)	5	8	0	7	18
Arsenic (Ar)	4	6	0	3	16
Heavy metals (e.g. Cd, Hg, Cu, Cr, N, Pb, etc)	3	7	0	5	20
Ambient water queality:					
Total nitrogen (N)	2	1	1	8	28
Total phosphorous (P)	1	1	1	8	29
Total Dissolved Solids (TDS)	1	1	1	7	29
Biochemical Oxygen Demand (BOD)	2	1	1	7	28
Chemical Oxygen Demand (COD)	1	1	1	6	25
Dissolved oxygen (DO)	1	1	1	5	27

Table 7: Activity of national statistical office compared to other institutions – selected economic and social data items

	National statistical offices activity				
	Regular business surveys	Specialized water surveys	Regular household surveys or census	Administrative data collected from other agencies	Data collected by other agencies
	No. of agencies	*No. of agencies*	*No. of agencies*	*No. of agencies*	*No. of agencies*
Water supply industry					
Sales of water	1	11	7	8	18
Government subsidies	0	9	1	5	14
Compensation of employees	1	17	3	5	10
Capital expenditure	1	19	4	4	12
Cost of water used by					
Agriculture	0	5	1	6	11
Mining	0	8	2	3	11
Manufacturing	0	7	2	3	11
Electricity generation	0	6	2	4	9
Other industries	0	6	1	3	9
Households	5	3	4	5	14
Households or population connected to piped water	21	3	11	4	8
Households or population connected to sewer	20	2	13	5	4

Table 8: Average number of gaps in data items by geographic grouping and economic grouping.

	Average number of gaps in data items per country, of which:			
	Physical	Economic	Social	Total
Number of data items:	49	40	5	94
Geographic grouping:				
Africa	17	11	0	28
Europe and Northern America	14	19	1	34
Oceania	16	20	2	37
Western Asia	17	21	1	39
Other Asia	20	21	2	42
Latin America and the Caribbean	22	21	1	44
Economic grouping:				
Transition economies	13	19	1	33
Developed economies	14	19	1	34
Developing economies	19	19	1	38

D. Water accounting

15. Table 9 shows the existence of water accounts in countries by economic and geographical groupings. 33 of the 59 countries responding to this question compiled water accounts. This includes 28 countries where the responding agency compiles water accounts and 5 countries where the responding agency does not compile water accounts but indicated that another agency in the country compiles water accounts.

16. The distribution of water accounting programmes varies both by economic and geographical grouping. In the responding countries, water accounting programmes exist in 15 countries with developed economies, 17 countries with developing economies and 1 country with economies in transition. The geographical distribution ranges from a maximum 14 countries in Europe and Northern America to 3 in Western Asia. In addition to the 33 countries currently compiling water accounts, another 11 countries plan to start their compilation in the next 2 years (Table 9).

Table 9: Water accounting programmes

	Number of countries *(1)*	*Number of countries currently compiling* *(2)*	*Percentage of countries currently compiling* *(3)=(2)/(1)*	*Number of countries planning to start compiling in the next 2 years* *(4)*	*Number of countries compiled in the past and will not continue* *(5)*	*Total* *(6) = (2)+(4)+(5)*	*Percentage of countries compiling, planning to compile, or compiled water accounts* *(7)=(6)/(1)*
Total countries responding to question	59	33	56%	11	2	46	78%
Economic regions							
Developed regions	28	16	57%	5	2	23	82%
Developing regions	31	17	55%	6	0	23	74%
Economic grouping:							
Developed economies	23	15	65%	4	1	20	87%
Transition economies	7	1	14%	2	1	4	57%
Developing economies	29	17	59%	5	0	22	76%
Geographical grouping:							
Africa	6	4	67%	2	0	6	100%
Central, Eastern, Southern South-Eastern Asia and Oceania	8	5	63%	1	0	5	63%
Europe and Northern America	26	14	54%	4	2	21	81%
Latin America and the	9	7	78%	0	0	7	78%
Western Asia	10	3	30%	4	0	7	70%

17. The institutions that compile water accounts vary from country to country. In 17 of the 33 countries that currently compile water accounts, it is done exclusively by the NSOs. In 6 countries NSOs and other agencies both compile water accounts. In 10 countries other agencies compile the water accounts. Other agencies mainly include environment agencies and water agencies. It should be noted that in these countries there is usually cooperation with the NSO or the agency responsible for the production of the national accounts. The water accounts are compiled as part of the regular work programme in two thirds (22) of the responding countries.

18. Among the national statistical offices that responded to this question and currently compile water accounts or plan to compile water accounts, 9 have the water accounts programme located within national accounts programmes, and in 11 it is located within the environment statistics programme.

1. Types of water accounts compiled

19. The types of water accounts compiled by responding countries are presented in Table 10. The two most commonly compiled accounts are the supply and use tables (75%) and economic accounts (61%), followed by asset accounts (43%) and emission accounts (36%). The order of importance of the accounts compiled varies by region, but in both developed and developing regions supply and use tables and the economic accounts are the two most commonly produced types of accounts. In developed regions, emission accounts (40%) are the third, followed by hybrid accounts (27%) and asset accounts (27%). In developing regions, asset accounts (62%) rank the third, followed by emission accounts and quality accounts in four countries (31%).

Table 10: Types of water accounts compiled

	All regions		***Developed regions***		***Developing Regions***	
	Number of countries	*Percentage of countries*	*Number of countries*	*Percentage of countries*	*Number of countries*	*Percentage of countries*
Total countries responding to question	28	100%	15	100%	13	100%
Supply and use tables	21	75%	9	60%	12	92%
Emission accounts	10	36%	6	40%	4	31%
Hybrid accounts	7	25%	4	27%	3	23%
Economic accounts – *Please specify*:	17	61%	8	53%	9	69%
National expenditure accounts for wastewater management	11	39%	6	40%	5	38%
National expenditure accounts for water management	11	39%	7	47%	4	31%
Government accounts for water–related collective consumption services	8	29%	3	20%	5	38%
Financing accounts for wastewater management	5	18%	3	20%	2	15%
Financing accounts for water management	4	14%	2	13%	2	15%
Water supply / sewerage for own use	8	29%	3	20%	5	38%
Asset accounts	12	43%	4	27%	8	62%
Quality accounts	6	21%	2	13%	4	31%
Other - *Please describe*:	3	11%	2	13%	1	8%

20. Economic accounts are the second most commonly compiled water accounts in the responding countries from both developed and developing regions. Economic accounts are further disaggregated into different types whose importance varies between regions. The most commonly compiled accounts in developed regions include: national expenditure accounts for water management (47%) and national expenditure accounts for wastewater management (40%). The economic accounts most commonly compiled in developing regions include water supply / sewerage for own use, national expenditure accounts for wastewater management, and government accounts for water–related collective consumption services (38% each).

21. Questions in the Global Assessment aimed at identifying the components of the physical supply and use tables. In 15 of the 20 countries responding to this question, the water supply industry and sewerage service industry are separately identified (i.e. distinct from each other) in the physical supply and use tables. In 17 out of the 21 countries responding to this question (or 81%) losses are recorded in distribution in the physical supply and use tables. In more than half (62%) of these countries the losses are separately identified. Returns to the environment (from the economy) by industry and household are recorded in 16 of 21 countries (76%) in the physical supply and use tables.

22. Table 11 presents the flows that are recorded in the physical supply and use tables. Almost all of the 21 responding countries (95%) record abstractions from the environment. Among the flows that are abstracted from the environment, the most commonly recorded, are: (1) Abstractions from surface water (86%); (2) Abstractions from ground water (76%), and; (3) Abstractions for distribution (71%).

23. The supply and use of water between economic units are recorded in the physical supply and use tables by 90% of responding countries. The majority of countries record flow of distributed water (76%) and flow of wastewater to/from sewerage (76%). Returns to the environment are less commonly recorded, with surface water the most commonly recorded return flow to the environment, recorded in 11 (or 52%) of the countries.

Table 11: Types of flow recorded in the physical supply and use tables

	Number of countries	*Percentage of countries*
Total countries responding to question	21	100%
Abstractions from the environment	20	95%
For own use	12	57%
For distribution	15	71%
From surface water	18	86%
From ground water	16	76%
From soil water	3	14%
From other sources (desalination/rainwater harvesting)	4	19%
Supply and use of water between economic units	19	90%
Distributed water	16	76%
Wastewater (to/from sewerage)	16	76%
Returns to the environment	17	81%
To surface water	11	52%
To ground water	8	38%
To soil water	3	14%
To sea	8	38%

E. Use of international standards, recommendations and classifications

24. Table 12 shows the use by responding countries of international standards, recommendations, guidance material and classifications used in the compilation of water statistics and accounts. International Standard Industrial Classification of all Economic Activities (ISIC) / Classification of Economic Activities in the European Community (NACE) is the most commonly used international classification (39 countries)

25. In the collection, compilation, and dissemination of water statistics, 42 countries indicated that they use international standards. Half (21) of these countries use the System of National Accounts (SNA 1993). Other commonly used international guidelines include the SEEAW (15 countries) and *Handbook of National Accounting: Integrated Environment and Economic Accounting 2003* (SEEA-2003) (11). A number of OECD/EU countries also indicated that they use the data collection manual for the OECD/EUROSTAT questionnaire on inland water.

26. In the collection, compilation, and dissemination of water accounts, 21 countries (including 3 countries that plan to compile water accounts in the next 2 years) indicated that they use either the SEEAW and/or the SEEA-2003.

Table 12: Use of international standards, recommendations and guidelines in water statistics and accounts

	Water Statistics		***Water Accounts***	
	Number of countries	*Percentage of countries*	*Number of countries*	*Percentage of countries*
Total countries responding to question	42	100%	21	100%
International standards				
System of Environment-Economic Accounting for Water	15	36%	17	81%
System of National Accounts (SNA 1993)	21	50%	n.a.	n.a.
Recommendations and guidelines				
Handbook of National Accounting: Integrated Environmental and Economic Accounting 2003 (SEEA-2003)	11	26%	14	67%
Concepts and Methods of Environment Statistics: Human Settlements Statistics - A Technical Report (1988)	1	2%	n.a.	n.a.
Framework for the Development of Environment Statistics (1984)	7	17%	n.a.	n.a.
Concepts and Methods of Environment Statistics – Statistics of the Natural Environment – A Technical Report (1991)	7	17%	n.a.	n.a.
Other countries' experience	5	12%	n.a.	n.a.
Total countries responding to question	52	100%	n.a.	n.a.
Classifications				
Central Product Classification (CPC)	15	29%	n.a.	n.a.
International Standard Industrial Classification of all Economic Activities (ISIC) / Classification of Economic Activities in the European Community (NACE)	39	75%	n.a.	n.a.
Classification of Environmental Protection Activities (CEPA 2000)	15	29%	n.a.	n.a.
Classification of the Functions of the Government (COFOG)	6	12%	n.a.	n.a.
Own national classification	15	29%	n.a.	n.a.

Note: Countries were not asked about the use of recommendations, guidance and classifications with respect to water accounts.

F. Spatial level and temporal references

27. Table 13 presents the spatial level at which the water statistics and accounts are produced by responding countries (60 countries responded to this question). For water statistics, the majority of the responding countries produce water statistics at the national territory level (85%) and a large percentage produces them at the administrative regional level (73%). For countries that produce water statistics at administrative regional level, the majority (58%) of them produce water statistics for all administrative regions within the national boundary. For river basins the number was lower, with 28% of countries producing data for all river basins within the national boundary.

28. In all of the 28 responding countries, the water accounts are produced at national territory level. Just over one third (36%) of the countries produce water accounts at the administrative regional level and slightly less at the river basin level (32%). In some countries, the spatial level at which the water statistics

or accounts are produced depends on the type of water statistics or accounts and the way data are collected.

Table 13: Spatial level that the water statistics and accounts are produced

	Water Statistics		*Water Accounts*	
	Number of countries	*Percentage of countries*	*Number of countries*	*Percentage of countries*
Total countries responding to question	60	100%	28	100%
National territory	51	85%	28	100%
Administrative regions	44	73%	10	36%
For all administrative regions within the national boundary	35	58%	6	21%
For selected administrative regions only	8	13%	3	11%
River basin	29	48%	9	32%
For all river basins within national boundary	17	28%	3	11%
For selected river basins only	9	15%	4	14%
Other	9	15%	2	7%

29. Table 14 shows that the majority of responding countries use the same reference period as the national accounts statistics for both water statistics (63%) and water accounts (64%),. Some countries, though, use the hydrological year and the calendar year (Table 14).

Table 14: Temporal reference of water statistics and accounts

	Water Statistics		*Water Accounts*	
	Number of countries	*Percentage of countries*	*Number of countries*	*Percentage of countries*
Total countries responding to question	57	100%	28	100%
Same reference period as national accounts	36	63%	18	64%
Hydrological year	8	14%	5	18%
Other	15	26%	7	25%

G. Future plans

30. Table 15 shows the planned changes in the existing water statistics and accounts programmes of the countries. Part A shows that a large number of countries (44 of the 55 respondents) intend to make changes to the collection or compilation of water statistics. In developed regions, the majority (81%) intend to increase the scope of data collection and compilation, while some also intend to increase frequency of data collection and compilation (24%). Similarly, in developing regions, the majority of countries intend to increase the scope (87%) and the frequency (65%) of data collection and compilation.

Table 15 A: Future plans for existing water statistics programmes

	All regions		*Developed regions*		*Developing Regions*	
Intend to make changes to the current water statistics	*Number of countries*	*Percentage of countries*	*Number of countries*	*Percentage of countries*	*Number of countries*	*Percentage of countries*
Total countries responding to question	55	100%	27	100%	28	100%
No changes	11	20%	6	22%	5	18%
Yes., intend to make changes	44	80%	21	78%	23	82%
Total number of countries intending to make changes	44	100%	21	100%	23	100%
Types of changes:						
Increasing frequency of data collection and compilation	20	45%	5	24%	15	65%
Increasing scope of data collection and compilation	37	84%	17	81%	20	87%
Decreasing frequency of data collection and compilation	1	2%	1	5%	0	0%
Decreasing scope of data collection and compilation	0	0%	0	0%	0	0%
Other	9	20%	5	24%	4	17%

Table 15 B: Future plans for existing water accounts programmes

	All regions		*Developed regions*		*Developing Regions*	
Intend to make changes to the current water accounts	*Number of countries*	*Percentage of countries*	*Number of countries*	*Percentage of countries*	*Number of countries*	*Percentage of countries*
Total countries responding to question	28	100%	15	100%	13	100%
No changes	8	29%	5	33%	3	23%
Yes, intend to make changes	20	71%	10	67%	10	77%
Total number of countries intending to make changes	20	100%	10	100%	10	100%
Types of changes						
Increasing frequency of compilation	8	40%	2	20%	6	60%
Decreasing frequency of compilation	0	0%	0	0%	0	0%
Start producing accounts at regional level (e.g. river basin or administrative regions)	6	30%	2	20%	4	40%
Stop producing accounts at regional level (e.g. river basin or administrative regions)	1	5%	0	0%	1	10%
Improving quality	14	70%	8	80%	6	60%
Stop producing	0	0%	0	0%	0	0%
Start producing	12	60%	5	50%	7	70%
Total number of countries starting producing water accounts	12	100%	5	100%	7	100%
Types of accounts						
Supply use tables	6	50%	2	40%	4	57%
Emission accounts	3	25%	1	20%	2	29%
Hybrid accounts	3	25%	3	60%	0	0%
Economic accounts	1	8%	1	20%	0	0%
Asset accounts	7	58%	2	40%	5	71%
Quality accounts	4	33%	2	40%	2	29%

31. Table 15B shows that 20 of 28 countries indicated that they intend to make changes to the current water accounts programmes. The top four changes identified are: (1) improving quality (70%); (2) starting producing additional water accounts (60%); (3) increasing frequency of compilation (40%), and; (4) start producing accounts at regional levels (30%).

32. The types of changes that responding countries intend to make are different in economic regions: in developed regions improving quality (80%) is the highest ranked change, while for developing regions it is to start producing additional types of water accounts (70%).

33. The asset accounts were identified as the highest priority to start producing additional water accounts by 71% of the countries in developing regions, followed by the supply and use tables (57%). In the developed regions, the hybrid accounts (60%), were the most common accounts planned to be produced.

34. Of the responding agencies that do not currently compile water accounts, 11 indicated that they plan to start compilation in the next two years. Table 16 lists the type of water accounts these countries are planning to compile. Supply and use tables are identified as the top water accounts that countries plan to compile.

Table 16: Plans to compile water accounts in the next two years in countries with no water accounts programme

	Number of countries	*Percentage of countries*
By water account		
Total countries responding to question	11	100%
Supply and use tables	10	91%
Emission accounts	3	27%
Hybrid accounts	4	36%
Economic accounts	2	18%
Asset accounts	3	27%
Quality accounts	2	18%

H. Dissemination and uses

35. The assessment identified the dissemination strategies, the uses of water statistics and accounts and the reporting of water statistics to international/regional organizations.

1. Dissemination

36. The 59 responding countries use different means to disseminate water statistics and accounts (Table 17). The two most common are paper publications (88%) and the internet (86%). In developed regions, the internet was more commonly used than paper publications, (90% versus 70% of countries), while in developing countries, the paper publication (97%) was used by more countries than the internet (83%). A greater number of countries in developed regions than in developing regions disseminate data in the form of maps or in GIS layers.

Table 17: Dissemination of water statistics and accounts

Water statistics	All regions		Developed regions		Developing Regions	
	Number of countries	*Percentage of countries*	*Number of countries*	*Percentage of countries*	*Number of countries*	*Percentage of countries*
Total countries responding to question	59	100%	29	100%	30	100%
Paper publication	52	88%	23	79%	29	97%
On the internet	51	86%	26	90%	25	83%
As a publication (e.g. PDF or word file)	34	58%	19	66%	15	50%
As fixed tables or summary data (e.g. spreadsheet)	21	36%	11	38%	10	33%
In an interactive database	11	19%	7	24%	4	13%
As maps or in GIS layers	12	20%	9	31%	3	10%

Water accounts	All regions		Developed regions		Developing Regions	
	Number of countries	*Percentage of countries*	*Number of countries*	*Percentage of countries*	*Number of countries*	*Percentage of countries*
Total countries responding to question	23	100%	13	100%	10	100%
Paper publication	17	74%	9	69%	8	80%
On the internet	17	74%	10	77%	7	70%
As a publication (e.g. PDF or word file)	10	43%	6	46%	4	40%
As fixed tables or summary data (e.g. spreadsheet)	5	22%	4	31%	1	10%
In an interactive database	4	17%	3	23%	1	10%
As maps or in GIS layers	3	13%	2	15%	1	10%

37. Table 18 shows the formats used by responding countries for the dissemination of water statistics. Most countries use data compendia (42 of 56 responding countries) and thematic publications (31 of 56 responding countries). The most common method in developed countries to disseminate water statistics is through thematic publications (79%) whereas in developing countries it is data compendia (82%).

Table 18: Formats of dissemination of water statistics

	All regions		Developed regions		Developing Regions	
	Number of countries	*Percentage of countries*	*Number of countries*	*Percentage of countries*	*Number of countries*	*Percentage of countries*
Total countries responding to question	56	100%	28	100%	28	100%
Data compendia (e.g. yearbooks)	42	75%	19	68%	23	82%
Thematic publications	31	55%	22	79%	11	39%
Indicator sets	22	39%	13	46%	9	32%
Water Accounts	15	27%	8	29%	7	25%
Other	4	7%	1	4%	3	11%

2. Timeliness, frequency and time series

38. Of the 57 responding countries, 34 (60%) have an average of one-year time lag between reference period and publication of water statistics, while 16 (30%) have a two-year time lag and 6 (10%)

have a three-year time lag. As for the frequency of dissemination, the majority of responding countries (72% (33) for water statistics and 58% (10) for water accounts) disseminate data annually.

39. For water statistics, more than half the responding countries (mainly from developed regions) have at least 10-20 years time series of water statistics disseminated. A few countries have 40 to 50 years time series. Countries from developing regions normally have less than 10 years time series. For water accounts, which are relatively new and not formalized until the publication of SEEA 1993, the times series available for most countries are less than 10 years.

3. Uses

40. Table 19 presents the main uses of water statistics and accounts. The most common uses of water statistics in the responding countries are: (1) basis for reporting to international organizations (71%); (2) input in policy making (64%), and; (3) to support Integrated Water Resources Management (54%). Derivation of indicators and development of water accounts are other common uses of water statistics (49% and 47%, respectively). It is interesting to note that a greater percentage of countries in developing regions (63%) than developed regions (54%) use water statistics to support Integrated Water Resources Management.

Table 19: Main uses of water statistics and accounts

	All regions		***Developed regions***		***Developing Regions***	
Water statistics	*Number of countries*	*Percentage of countries*	*Number of countries*	*Percentage of countries*	*Number of countries*	*Percentage of countries*
Total countries responding to question	59	100%	29	100%	30	100%
Support Integrated Water Resources Management (IWRM)	32	54%	13	45%	19	63%
Basis for reporting to international organizations	42	71%	23	79%	19	63%
Development of water accounts	28	47%	14	48%	14	47%
Input in national accounts	22	37%	8	28%	14	47%
Input in policy making	38	64%	19	66%	19	63%
Input in research and modeling	25	42%	13	45%	12	40%
Derivation of indicators	29	49%	15	52%	14	47%
	All regions		***Developed regions***		***Developing Regions***	
Water accounts	*Number of countries*	*Percentage of countries*	*Number of countries*	*Percentage of countries*	*Number of countries*	*Percentage of countries*
Total countries responding to question	25	100%	15	100%	10	100%
Support Integrated Water Resources Management (IWRM)	11	44%	4	27%	7	70%
Basis for reporting to international organizations	10	40%	6	40%	4	40%
Input in national accounts	9	36%	6	40%	3	30%
Input in policy making	14	56%	8	53%	6	60%
Input in research and modeling	10	40%	6	40%	4	40%
Derivation of indicators	8	32%	7	47%	1	10%

41. In the 25 responding countries, water accounts are used more for policy making (56%) than for Integrated Water Resource Management (44%), reporting to international agencies (40%) or research and modeling (40%).

42. Responding countries noted that water statistics and accounts are used as input to the following issues: development of national water policies; water pricing; water resources allocation; improving water use efficiency; and budgeting and designing of water projects. Water statistics and accounts are also used in research and modeling for: predicting future demands for water; input-output analyses; predicting implications of water reforms for the national economy; flood forecasting; and modeling for climate change scenarios. The indicators that are derived from water statistics and accounts are mainly for sustainable development, water resource and use, and water quality.

4. Users

43. Table 20 presents the main users of water statistics and accounts as reported by the 59 responding countries. The Ministries of Environment are the most common users of water statistics (88%), while the other users of water statistics include academia (73%), other government institutions (69%), Ministries of Agriculture (58%) and media (47%). The main users of water accounts are Ministries of Environment (72%), academia (60%) and other government institutions (52%).

Table 20: Main users of water statistics and accounts

	All regions		***Developed regions***		***Developing Regions***	
Water statistics	*Number of countries*	*Percentage of countries*	*Number of countries*	*Percentage of countries*	*Number of countries*	*Percentage of countries*
Total countries responding to question	59	100%	29	100%	30	100%
Ministry of Finance	17	29%	5	17%	12	40%
Ministry of Environment	52	88%	26	90%	26	87%
Ministry of Agriculture	34	58%	13	45%	21	70%
Other Government institutions	41	69%	18	62%	23	77%
Academia	43	73%	19	66%	24	80%
Media	28	47%	14	48%	14	47%
Industries	23	39%	12	41%	11	37%
	All regions		***Developed regions***		***Developing Regions***	
Water accounts	*Number of countries*	*Percentage of countries*	*Number of countries*	*Percentage of countries*	*Number of countries*	*Percentage of countries*
Total countries responding to question	25	100%	15	100%	10	100%
Ministry of Finance	7	28%	4	27%	3	30%
Ministry of Environment	18	72%	12	80%	6	60%
Ministry of Agriculture	7	28%	4	27%	3	30%
Other Government institutions	13	52%	7	47%	6	60%
Academia	15	60%	9	60%	6	60%
Media	5	20%	4	27%	1	10%
Industries	6	24%	3	20%	3	30%

5. International questionnaires

44. As noted above, the majority of responding countries report or transmit water statistics to international or regional organizations (Table 21). This includes the UNSD/UNEP Questionnaire on Water Statistics and to the OECD/Eurostat Joint Questionnaire on Inland Waters as well as other international or regional organizations that collect data from countries.

Table 21: Reporting or transmitting water statistics to international/regional organizations

	Total countries responding to questions	*Responding agency transmits*	*Both the responding agency and other agency transmits*	*Other agency transmits*	*Do not Know*
UNSD/UNEP Questionnaire on Water Statistics	40	27	2	3	8
OECD/Eurostat Joint Questionnaire on Inland Waters	44	25	4	5	10
FAO (Aquastat)	31	3	2	7	19
European Commission (e.g. *Water Framework Directive)*	33	5	2	12	14
World Bank (e.g. IBNET)	25	1	1	4	19
UNEP Gems/Water	26	2	1	4	19
World Water Assessment Programme	25	3	1	1	20
UN Regional Commissions (ECA, ECE, ECLAC, ESCAP, ESCWA)	27	10	2	1	14
Others	15	7	0	4	4

I. Factors impeding the compilation of water statistics and accounts

45. The factors impeding the compilation of water statistics and accounts are shown in Table 22. The two most common impeding factors for the compilation of both water statistics and water accounts are data availability (83% for water statistics and 74% for water accounts) and data quality (55% for both water statistics and water accounts). The table 22 shows that the impeding factors are more commonly experienced in the countries responding from developing regions than in developed regions.

46. For the compilation of water statistics, the lack of cooperation/data sharing with other institutions was also identified by 54 responding countries from both developed regions (54%) and developing regions (57%) as a major impeding factor. The 30 responding countries in the developing regions also identified the lack of harmonized measurement units within the country (47%), the lack of compilation guidance material (37%), and the lack of harmonized classifications (37%) as factors impeding water statistics. For the compilation of water accounts the 16 responding countries in developing regions also identified the lack of compilation guidance material (50%) as an impeding factor, after data availability (81%) and data quality (63%). A key difference between water statistics and accounts is that the lack of cooperation or data sharing was less of an impeding factor for water accounts (32%) than for water statistics (56%).

Table 22: Impeding factors for the compilation of water statistics and accounts

	All regions		*Developed regions*		*Developing Regions*	
Water statistics	*Number of countries*	*Percentage of countries*	*Number of countries*	*Percentage of countries*	*Number of countries*	*Percentage of countries*
Total countries responding to question	54	100%	24	100%	30	100%
Lack of a cooperation/data sharing with other institutions	30	56%	13	54%	17	57%
Lack of compilation guidance material	16	30%	5	21%	11	37%
Lack of harmonized measurement units within the country	19	35%	5	21%	14	47%
Lack of internationally agreed methodology	11	20%	2	8%	9	30%
Lack of harmonized classifications	15	28%	4	17%	11	37%
Data availability	45	83%	21	88%	24	80%
Data quality	30	56%	11	46%	19	63%
Lack of interest from users	13	24%	4	17%	9	30%
Confidentiality	13	24%	5	21%	8	27%
	All regions		***Developed regions***		***Developing Regions***	
Water accounts	*Number of countries*	*Percentage of countries*	*Number of countries*	*Percentage of countries*	*Number of countries*	*Percentage of countries*
Total countries responding to question	31	100%	15	100%	16	100%
Lack of a cooperation/data sharing with other institutions	10	32%	4	27%	6	38%
Lack of compilation guidance material	11	35%	3	20%	8	50%
Lack of harmonized measurement units within the country	7	23%	3	20%	4	25%
Lack of internationally agreed methodology	6	19%	3	20%	3	19%
Lack of harmonized classifications	4	13%	1	7%	3	19%
Data availability	23	74%	10	67%	13	81%
Data quality	17	55%	7	47%	10	63%
Lack of interest from users	10	32%	3	20%	7	44%
Confidentiality	6	19%	2	13%	4	25%

Note: Four countries that do not compile water accounts currently but plan to compile in the next two years also answered this question.

47. Among the 31 agencies that responded saying that they do not currently compile water accounts, 18 (58%) indicated that they do not plan to start the compilation in the next two years. The main reasons for not compiling water accounts are shown in table 23. The lack of human and financial resources (50% and 44%, respectively) and the lack of data (44%) are the most commonly impeding factors identified by the countries.

Table 23: Impeding factors in countries not planning to compile water accounts in next two years

	Number of countries	*Percentage of countries*
Total countries responding to question	18	100%
Lack of financial resources	8	44%
Lack of interest from the users	6	33%
Lack of human resources	9	50%
Lack of data	8	44%
Others	2	11%

Annex I

Countries responding to Global Assessment of Water Statistics and Water Accounts

Responding countries	Economy regions	Economy grouping	Geographical grouping	Countries with or planning water accounts (see footnotes)
Andorra	Developed Region	Developed economy	Europe and Northern America	Yes[1]
Armenia	Developing Region	Transition economy	Western Asia	Yes[3]
Australia	Developed Region	Developed economy	Central, Eastern, Southern South-Eastern Asia and Oceania	Yes[1]
Austria	Developed Region	Developed economy	Europe and Northern America	Yes[1]
Azerbaijan	Developing Region	Transition economy	Western Asia	
Bahamas	Developing Region	Developing economy	Latin America and the Caribbean	Yes[1]
Belgium	Developed Region	Developed economy	Europe and Northern America	Yes[2]
Bosnia and Herzegovina	Developed Region	Transition economy	Europe and Northern America	
Botswana	Developing Region	Developing economy	Africa	Yes[1]
Brazil	Developing Region	Developing economy	Latin America and the Caribbean	
Bulgaria	Developed Region	Transition economy	Europe and Northern America	Yes[2]
Canada	Developed Region	Developed economy	Europe and Northern America	Yes[1]
Chile	Developing Region	Developing economy	Latin America and the Caribbean	
China	Developing Region	Developing economy	Central, Eastern, Southern South-Eastern Asia and Oceania	Yes[1]
Colombia	Developing Region	Developing economy	Latin America and the Caribbean	Yes[1]
Cyprus	Developing Region	Developing economy	Western Asia	
Czech Republic	Developed Region	Developed economy	Europe and Northern America	
Denmark	Developed Region	Developed economy	Europe and Northern America	Yes[1]
Dominican Republic	Developing Region	Developing economy	Latin America and the Caribbean	Yes[1]
Egypt	Developing Region	Developing economy	Africa	Yes[1]
Estonia	Developed Region	Developed economy	Europe and Northern America	Yes[3]
France	Developed Region	Developed economy	Europe and Northern America	Yes[1]
Germany	Developed Region	Developed economy	Europe and Northern America	Yes[1]
Greece	Developed Region	Developed economy	Europe and Northern America	Yes[3]
Guatemala	Developing Region	Developing economy	Latin America and the Caribbean	Yes[1]
Hungary	Developed Region	Developed economy	Europe and Northern America	Yes[1]

Responding countries	Economy regions	Economy grouping	Geographical grouping	Countries with or planning water accounts (see footnotes)
India	Developing Region	Developing economy	Central, Eastern, Southern South-Eastern Asia and Oceania	
Indonesia	Developing Region	Developing economy	Central, Eastern, Southern South-Eastern Asia and Oceania	
Iraq	Developing Region	Developing economy	Western Asia	Yes[1]
Israel	Developing Region	Developing economy	Western Asia	Yes[1]
Italy	Developed Region	Developed economy	Europe and Northern America	Yes[1]
Jordan	Developing Region	Developing economy	Western Asia	Yes[1]
Kenya	Developing Region	Developing economy	Africa	
Lebanon	Developing Region	Developing economy	Western Asia	Yes[3]
Luxembourg	Developed Region	Developed economy	Europe and Northern America	
Malaysia	Developing Region	Developing economy	Central, Eastern, Southern South-Eastern Asia and Oceania	
Mauritius	Developing Region	Developing economy	Africa	Yes[3]
Mexico	Developing Region	Developing economy	Latin America and the Caribbean	Yes[1]
Namibia	Developing Region	Developing economy	Africa	Yes[1]
Netherlands	Developed Region	Developed economy	Europe and Northern America	Yes[1]
New Zealand	Developed Region	Developed economy	Central, Eastern, Southern South-Eastern Asia and Oceania	Yes[1]
Norway	Developed Region	Developed economy	Europe and Northern America	Yes[3]
Occupied Palestinian Territory	Developing Region	Developing economy	Western Asia	Yes[3]
Peru	Developing Region	Developing economy	Latin America and the Caribbean	Yes[1]
Philippines	Developing Region	Developing economy	Central, Eastern, Southern South-Eastern Asia and Oceania	Yes[1]
Poland	Developed Region	Developed economy	Europe and Northern America	
Portugal	Developed Region	Developed economy	Europe and Northern America	Yes[1]
Republic of Serbia	Developed Region	Transition economy	Europe and Northern America	
Romania	Developed Region	Transition economy	Europe and Northern America	Yes[3]
Singapore	Developing Region	Developing economy	Central, Eastern, Southern South-Eastern Asia and Oceania	Yes[1]

Responding countries	Economy regions	Economy grouping	Geographical grouping	Countries with or planning water accounts (see footnotes)
Slovenia	Developed Region	Developed economy	Europe and Northern America	
South Africa	Developing Region	Developing economy	Africa	Yes[1]
Spain	Developed Region	Developed economy	Europe and Northern America	Yes[1]
Sweden	Developed Region	Developed economy	Europe and Northern America	Yes[1]
Switzerland	Developed Region	Developed economy	Europe and Northern America	Yes[1]
Trinidad and Tobago	Developing Region	Developing economy	Latin America and the Caribbean	Yes[1]
Tunisia	Developing Region	Developing economy	Africa	Yes[3]
Turkey	Developing Region	Developing economy	Western Asia	Yes[3]
Ukraine	Developed Region	Transition economy	Europe and Northern America	Yes[1]
United Arab Emirates	Developing Region	Developing economy	Western Asia	
United Kingdom	Developed Region	Developed economy	Europe and Northern America	Yes[3]

Footnotes:

1. Currently compiling water accounts

2. Previously compiled water accounts

3. Planning to start compile water accounts in the next two years

Annex II

Global Assessment of Water Statistics and Water Accounts

Part A – Water Statistics

Please provide your contact information

Country: ____

Name of institution: ____

Contact person: ____

Email: ____

Tel: ____

Fax: ____

Website: ____

☐ PLEASE CHECK THIS BOX if you do not wish that your response be shared with other international, regional or supranational organizations

GENERAL

1. In your opinion, how important are the following water issues in your country?

	Very unimportant	Unimportant	Neutral	Important	Very important
Water scarcity	☐	☐	☐	☐	☐
Water pollution	☐	☐	☐	☐	☐
Access to sanitation or safe drinking water	☐	☐	☐	☐	☐
Cost of providing sanitation or drinking water	☐	☐	☐	☐	☐
Trans-boundary issues (e.g. water resource access or water pollution)	☐	☐	☐	☐	☐

2. Which of the following instruments or legal frameworks related to water are in place in your country? *Please mark all that apply.*

- ☐ National water policy
- ☐ National water law
- ☐ National Integrated Water Resource Management (IWRM) plan or equivalent strategic plan document
- ☐ National Water Efficiency Plan
- ☐ Statistical Act
- ☐ Environmental Protection Act
- ☐ Other - *Please specify*: ___

DATA COLLECTION, COMPILATION and MANAGEMENT

3. For each of the physical water variables below, please mark if your agency collects data (by type of collection), receives data from other agencies, compiles and/or disseminates data and, to the best of your knowledge, if other agencies collect data. *Please mark all that apply.*

	Type of water data collection by your agency via:						
	Regular business surveys	Specialized water surveys	Regular household surveys or census	Administrative data from other agencies	Water data received by your agency from other agencies	Water data compiled and/or disseminated by your agency	Water data collected by other agencies
Hydrological/meteorological:							
▪ Precipitation (e.g. rainfall, snow)	☐	☐	☐	☐	☐	☐	☐
▪ Evapo-transpiration (evaporation and transpiration)	☐	☐	☐	☐	☐	☐	☐
▪ Run-off	☐	☐	☐	☐	☐	☐	☐
▪ Outflows to sea	☐	☐	☐	☐	☐	☐	☐
▪ Outflows to other territories	☐	☐	☐	☐	☐	☐	☐
Volume of water stocks in:							
▪ Surface water	☐	☐	☐	☐	☐	☐	☐
○ Reservoirs	☐	☐	☐	☐	☐	☐	☐
○ Other	☐	☐	☐	☐	☐	☐	☐
▪ Groundwater	☐	☐	☐	☐	☐	☐	☐
Volume of water abstracted from:							
▪ Surface water	☐	☐	☐	☐	☐	☐	☐
○ Reservoirs	☐	☐	☐	☐	☐	☐	☐
○ Other	☐	☐	☐	☐	☐	☐	☐
▪ Groundwater	☐	☐	☐	☐	☐	☐	☐
▪ Soil water	☐	☐	☐	☐	☐	☐	☐
▪ Volume of water desalinized	☐	☐	☐	☐	☐	☐	☐
▪ Volume of precipitation collected	☐	☐	☐	☐	☐	☐	☐
Volume of water supplied by:							
▪ The water supply industry	☐	☐	☐	☐	☐	☐	☐
▪ 0ther industries	☐	☐	☐	☐	☐	☐	☐
Volume of water losses in distribution by water supplier from:							
▪ Leakage (e.g. from leaky or burst pipes)	☐	☐	☐	☐	☐	☐	☐
▪ Evaporation (e.g. from open channels)	☐	☐	☐	☐	☐	☐	☐
▪ Theft	☐	☐	☐	☐	☐	☐	☐

	Type of water data collection by your agency via:						
	Regular business surveys	Specialized water surveys	Regular household surveys or census	Administrative data from other agencies	Water data received by your agency from other agencies	Water data compiled and/or disseminated by your agency	Water data collected by other agencies
Volume of water used by:							
▪ Agriculture	☐	☐	☐	☐	☐	☐	☐
▪ Electric power generation industry	☐	☐	☐	☐	☐	☐	☐
▪ Other industries (e.g. mining, manufacturing, etc)	☐	☐	☐	☐	☐	☐	☐
▪ Households	☐	☐	☐	☐	☐	☐	☐
Irrigation:							
▪ Area irrigated by crop type	☐	☐	☐	☐	☐	☐	☐
▪ Volume of water applied to irrigated area	☐	☐	☐	☐	☐	☐	☐
▪ Irrigation techniques or management practices	☐	☐	☐	☐	☐	☐	☐
Wastewater:							
▪ Volume collected by the sewerage industry	☐	☐	☐	☐	☐	☐	☐
▪ Volume treated by the sewerage industry	☐	☐	☐	☐	☐	☐	☐
▪ Volume of wastewater reused	☐	☐	☐	☐	☐	☐	☐
▪ Volume discharged to inland waters	☐	☐	☐	☐	☐	☐	☐
▪ Volume discharged to sea	☐	☐	☐	☐	☐	☐	☐
Emissions to water:							
▪ Total nitrogen (N)	☐	☐	☐	☐	☐	☐	☐
▪ Total phosphorous (P)	☐	☐	☐	☐	☐	☐	☐
▪ Total Suspended Solids (TSS)	☐	☐	☐	☐	☐	☐	☐
▪ Total Dissolved Solids (TDS)	☐	☐	☐	☐	☐	☐	☐
▪ Biochemical Oxygen Demand (BOD)	☐	☐	☐	☐	☐	☐	☐
▪ Chemical Oxygen Demand (COD)	☐	☐	☐	☐	☐	☐	☐
▪ Arsenic (Ar)	☐	☐	☐	☐	☐	☐	☐
▪ Heavy metals (e.g. Cd, Hg, Cu, Cr, N, Pb, etc)	☐	☐	☐	☐	☐	☐	☐
▪ Other emissions - *Please specify* ____	☐	☐	☐	☐	☐	☐	☐

	Type of water data collection by <u>your</u> agency via:						
	Regular business surveys	Specialized water surveys	Regular household surveys or census	Administrative data from other agencies	Water data received by <u>your</u> agency from other agencies	Water data compiled and/or disseminated by <u>your</u> agency	Water data collected by <u>other</u> agencies
Ambient water quality:							
▪ Total nitrogen (N)	☐	☐	☐	☐	☐	☐	☐
▪ Total phosphorus (P)	☐	☐	☐	☐	☐	☐	☐
▪ Total Dissolved Solids (TDS)	☐	☐	☐	☐	☐	☐	☐
▪ Biochemical Oxygen Demand (BOD)	☐	☐	☐	☐	☐	☐	☐
▪ Chemical Oxygen Demand (COD)	☐	☐	☐	☐	☐	☐	☐
▪ Dissolved oxygen (DO)	☐	☐	☐	☐	☐	☐	☐
▪ Faecal coliform	☐	☐	☐	☐	☐	☐	☐
▪ Other parameters - *Please specify* ____	☐	☐	☐	☐	☐	☐	☐
▪ Length/surface/volume of ambient water according to quality classes	☐	☐	☐	☐	☐	☐	☐
Other physical water variables:							
▪ *Please specify* ____	☐	☐	☐	☐	☐	☐	☐

4. For each of the economic variables related to water below, please mark if your agency collects data (by type of collection), receives data from other agencies, compiles and/or disseminates data and, to the best of your knowledge, if other agencies collect data. *Please mark all that apply.* ?

	Type of water data collection by your agency via:						
	Regular business surveys	Specialized water surveys	Regular household surveys or census	Administrative data from other agencies	Water data received by your agency from other agencies	Water data compiled and/or disseminated by your agency	Water data collected by other agencies
Water supply industry:							
▪ Sales of water	☐	☐	☐	☐	☐	☐	☐
▪ Government subsidies	☐	☐	☐	☐	☐	☐	☐
▪ for operating costs	☐	☐	☐	☐	☐	☐	☐
▪ for specific capital items	☐	☐	☐	☐	☐	☐	☐
▪ Other revenue	☐	☐	☐	☐	☐	☐	☐
▪ Compensation of employees (e.g. wages)	☐	☐	☐	☐	☐	☐	☐
▪ Other production costs (e.g. insurance, rent, fuel, electricity, chemicals, etc.)	☐	☐	☐	☐	☐	☐	☐
▪ Taxes	☐	☐	☐	☐	☐	☐	☐
▪ Capital expenditure	☐	☐	☐	☐	☐	☐	☐
Sewerage industry:							
▪ Sales of sewerage services	☐	☐	☐	☐	☐	☐	☐
▪ Government subsidies	☐	☐	☐	☐	☐	☐	☐
▪ for operating costs	☐	☐	☐	☐	☐	☐	☐
▪ for specific capital items	☐	☐	☐	☐	☐	☐	☐
▪ Other revenue	☐	☐	☐	☐	☐	☐	☐
▪ Compensation of employees in (e.g. wages)	☐	☐	☐	☐	☐	☐	☐
▪ Other production costs (e.g. insurance, rent, fuel, electricity, chemicals, etc.)	☐	☐	☐	☐	☐	☐	☐
▪ Taxes	☐	☐	☐	☐	☐	☐	☐
▪ Capital expenditure	☐	☐	☐	☐	☐	☐	☐
Value of the water supply infrastructure (i.e. fixed capital):							
▪ Water supply industry (e.g. dams, pipes, etc.)	☐	☐	☐	☐	☐	☐	☐
▪ Agriculture (e.g. wells, sprinklers and pump for irrigation)	☐	☐	☐	☐	☐	☐	☐
▪ Other industries – mining industry, manufacturing industry, etc	☐	☐	☐	☐	☐	☐	☐
▪ Households (including rainwater tanks and wells)	☐	☐	☐	☐	☐	☐	☐

	Type of water data collection by your agency via:						
	Regular business surveys	Specialized water surveys	Regular household surveys or census	Administrative data from other agencies	Water data received by your agency from other agencies	Water data compiled and/or disseminated by your agency	Water data collected by other agencies
Value of the sewerage infrastructure (i.e. fixed capital):							
▪ Sewerage industry (e.g. sewers, wastewater treatment plants, etc.)	☐	☐	☐	☐	☐	☐	☐
▪ Agriculture (e.g. drainage channels)	☐	☐	☐	☐	☐	☐	☐
▪ Other industries (e.g. mining, manufacturing, etc)	☐	☐	☐	☐	☐	☐	☐
▪ Households (including septic tanks)	☐	☐	☐	☐	☐	☐	☐
Tariffs and charges							
▪ Water tariffs and charges (price to users, industries and households)	☐	☐	☐	☐	☐	☐	☐
▪ Sewerage service tariffs and charges (price to users, industries and households)	☐	☐	☐	☐	☐	☐	☐
Cost of water used by:							
▪ Agriculture	☐	☐	☐	☐	☐	☐	☐
▪ Mining industry	☐	☐	☐	☐	☐	☐	☐
▪ Manufacturing industry	☐	☐	☐	☐	☐	☐	☐
▪ Electricity industry	☐	☐	☐	☐	☐	☐	☐
▪ Other industries	☐	☐	☐	☐	☐	☐	☐
▪ Households	☐	☐	☐	☐	☐	☐	☐
Cost of sewerage services by:							
▪ Agriculture	☐	☐	☐	☐	☐	☐	☐
▪ Mining industry	☐	☐	☐	☐	☐	☐	☐
▪ Manufacturing industry	☐	☐	☐	☐	☐	☐	☐
▪ Electricity industry	☐	☐	☐	☐	☐	☐	☐
▪ Other industries	☐	☐	☐	☐	☐	☐	☐
▪ Households	☐	☐	☐	☐	☐	☐	☐
Other economic variables:							
▪ *Please specify* ____	☐	☐	☐	☐	☐	☐	☐

5. For each of the social variables related to water below, please mark if your agency collects data (by type of collection), receives data from other agencies, compiles and/or disseminates data and, to the best of your knowledge, if other agencies collect data. *Please mark all that apply.*

	Type of water data collection by your agency via:						
	Regular business surveys	Specialized water surveys	Regular household surveys or census	Administrative data from other agencies	Water data received by your agency from other agencies	Water data compiled and/or disseminated by your agency	Water data collected by other agencies
Population with access to improved water source	☐	☐	☐	☐	☐	☐	☐
Population with access to improved sanitation	☐	☐	☐	☐	☐	☐	☐
Households or population connected to piped water	☐	☐	☐	☐	☐	☐	☐
Households or population connected to sewer	☐	☐	☐	☐	☐	☐	☐
Households or population connected to waste water treatment plant	☐	☐	☐	☐	☐	☐	☐
Other variables - *Please specify* ____	☐	☐	☐	☐	☐	☐	☐

6. At what spatial level are the water statistics produced? *Please mark all that apply.*

- ☐ National territory
- ☐ Administrative regions
  - ☐ For all administrative regions within the national boundary
  - ☐ For selected administrative regions only
- ☐ River basin
  - ☐ For all river basins within national boundary
  - ☐ For selected river basins only
- ☐ Other – *Please specify*: ____

7. What is the temporal reference of the water statistics?

- ☐ Same reference period as national accounts
- ☐ Hydrological year – *Please specify starting date* ____
- ☐ Other - *Please specify and provide starting date* ____

8. Please specify from which agencies your agency receives data. *Please mark all that apply.*

- ☐ National Statistical Office
  - ☐ National accounts / economic statistics
  - ☐ Social statistics
  - ☐ Environment statistics
- ☐ Water Agency
- ☐ Environment Agency
- ☐ Agriculture Agency
- ☐ National Meteorological Agency
- ☐ Water supply and sewerage service industries
- ☐ Hydrological or water research institutes
- ☐ Other – *Please specify*: ____
- ☐ No data received from other agencies

9. Does your agency cooperate with other agencies in your country in the area of water statistics?

- ☐ Yes - *Please describe the cooperation mechanism and the name of the institutions involved*: _____
- ☐ No – *Please skip to Question 11*

10. If yes to Question 9, is your agency the leading agency in the compilation of water statistics?

- ☐ Yes
- ☐ No - *Please specify the name of the leading agency*: _____

USE of INTERNATIONAL CLASSIFICATIONS, STANDARDS and GUIDELINES

11. Which of the following classifications are used in compiling water statistics? *Please mark all that apply.*

- ☐ Central Product Classification (CPC)
- ☐ International Standard Industrial Classification of all Economic Activities (ISIC) / Classification of Economic Activities in the European Community (NACE)
- ☐ Classification of Environmental Protection Activities (CEPA 2000)
- ☐ Classification of the Functions of the Government (COFOG)
- ☐ Own national classification – *Please enumerate water related activities* ____

12. How many economic activities are separately identified at the most detailed level of water statistics related to industries?

_____

13. In the collection, compilation and dissemination of water statistics does your institution make use of any of the following? *Please mark all that apply.*

- ☐ System of Environment-Economic Accounting for Water 2007 (SEEAW 2007) or earlier versions
- ☐ Handbook of National Accounting: Integrated Environment and Economic Accounting 2003 (SEEA-2003)
- ☐ System of National Accounts (SNA 1993)
- ☐ Concepts and Methods of Environment Statistics of the Natural Environment (1991)
- ☐ Concepts and Methods of Environment Statistics: Human Settlements Statistics (1988)
- ☐ Framework for the development of environment statistics (1984)
- ☐ United Nations searchable archive of environmental accounting publications
- ☐ Other countries' experience – *Please indicate countries*: ____
- ☐ Other – *Please specify*: ____

DISSEMINATION

14. In your publications containing water statistics, what is the average time lag between reference period and publication? *Only mark one response and use other to explain differences.*

- ☐ 1 year
- ☐ 2 year
- ☐ 3 year
- ☐ Other – *Please specify year*: ____

15. How are the water statistics disseminated? *Please mark all that apply.*

- ☐ with national accounts
- ☐ with environment statistics programme
- ☐ Other - *Please specify*: _____

16. What is the time series of water statistics disseminated by your agency? *Please elaborate if different for different types of statistics.*

Time series: ____

17. What is the frequency of dissemination of water statistics by your agency? *Please elaborate if different for different types of statistics.*

Frequency: ____

18. How are the water statistics disseminated? *Please mark all that apply.*

- ☐ Paper publication
- ☐ On the internet - *Please provide link*: ____
  - ☐ As a publication (e.g. PDF or word file)
  - ☐ As fixed tables or summary data (e.g. spreadsheet)
  - ☐ In an interactive database
- ☐ As maps or in GIS layers
- ☐ Other - *Please specify* _____

19. In what formats are water statistics published? *Please mark all that apply.*

- ☐ Data compendia (e.g. yearbooks)
- ☐ Thematic publications
- ☐ Indicator sets
- ☐ Water Accounts
- ☐ Other – *Please specify*: ____

20. To which of the following international/regional organizations does your country report or transmit water statistics – *Please mark one response only for each line.*

	Your agency	Other agency	Do not know
UNSD/UNEP Questionnaire on Water Statistics	☐	☐	☐
OECD/Eurostat Joint Questionnaire on Inland Waters	☐	☐	☐
FAO (Aquastat)	☐	☐	☐
European Commission (e.g. *Water Framework Directive)*	☐	☐	☐
World Bank (e.g. IBNET)	☐	☐	☐
UNEP Gems/Water	☐	☐	☐
World Water Assessment Programme	☐	☐	☐
UN Regional Commissions (ECA, ECE, ECLAC, ESCAP, ESCWA)	☐	☐	☐
Others – *Please specify* ____	☐	☐	☐

USES

21. In your country, what are the main uses of water statistics? *Please mark all that apply.*

- ☐ Support Integrated Water Resources Management (IWRM)
- ☐ Basis for reporting to international organizations
- ☐ Development of water accounts
- ☐ Derivation of indicators - *Please specify*: ____
- ☐ Input in national accounts
- ☐ Input in policy making – *Please list examples of policy uses*: ____
- ☐ Input in research and modeling – *Please list examples*: ____
- ☐ Other - *Please specify*: ____

22. In your country, who are the main users of water statistics? *Please mark all that apply.*

- ☐ Ministry of Finance
- ☐ Ministry of Environment
- ☐ Ministry of Agriculture
- ☐ Other Government institutions
- ☐ Academia
- ☐ Media
- ☐ Industries
- ☐ Other – *Please specify*: _____

23. In your opinion, what are the factors impeding the compilation of water statistics in your country? *Please mark all that apply.*

- ☐ Lack of a cooperation/data sharing with other institutions
- ☐ Lack of compilation guidance material
- ☐ Lack of harmonized measurement units within the country
- ☐ Lack of internationally agreed methodology
- ☐ Lack of harmonized classifications
- ☐ Data availability
- ☐ Data quality
- ☐ Lack of interest from users
- ☐ Confidentiality
- ☐ Other - *Please specify*: _____

24. In your view, what are the compilation and implementation issues in water statistics that should be addressed by the international statistical community?

_____

FUTURE PLANS

25. Do you intend to make any changes to the current water statistics collection or compilation?

- ☐ Yes - *Please mark all that apply*
  - ☐ Increasing frequency of data collection and compilation
  - ☐ Increasing scope of data collection and compilation
  - ☐ Decreasing frequency of data collection and compilation
  - ☐ Decreasing scope of data collection and compilation
  - ☐ Other – *Please specify*: ____
- ☐ No

Please provide additional comments below:

____

Part B – Water Accounts

Note: Part B should be filled out by all countries, even if countries do not produce water accounts. The answers to questions will determine the number and sequence of questions to be answered in Part B. Please be careful as you will be asked to skip some questions.

Please provide your contact information (if different):

Country: ____

Name of institution: ____

Contact person: ____

Email: ____

Tel: ____

Fax: ____

Website: ____

☐ PLEASE CHECK THIS BOX if you do not wish that your response be shared with other international, regional or supranational organizations

INSTITUTIONAL

26. Does your agency currently compile water accounts?
- ☐ Yes – *Please skip to 29*
- ☐ No – *Please answer 27, 28 and 29 ONLY*

27. Did your agency compile water accounts in the past and did not continue?
- ☐ Yes – *Please specify the reasons for not continuing*:
  - ☐ Lack of financial resources
  - ☐ Lack of interest from the users
  - ☐ Lack of human resources
  - ☐ Lack of data
  - ☐ Other – *Please specify*: ____
- ☐ No

28. Does your institution have plans to start the compilation of any of the following water accounts in the next 2 years?
- ☐ Yes – *Please specify*:
  - ☐ Supply and use tables
  - ☐ Emission accounts
  - ☐ Hybrid accounts
  - ☐ Economic accounts
  - ☐ Asset accounts
  - ☐ Quality accounts
- ☐ No - *Please specify the reasons for not compiling*:
  - ☐ Lack of financial resources
  - ☐ Lack of interest from the users
  - ☐ Lack of human resources
  - ☐ Lack of data
  - ☐ Other – *Please specify*: ____

29. Are there other agencies that compile water accounts?
- ☐ Yes - *Please specify name of institution(s) and type of account(s) they compile*
  - Institution(s): ____
  - Accounts(s): ____
- ☐ No

30. Which agencies provide data or other support for the compilation of water accounts? *Please mark all that apply.*
- ☐ National Statistical Office
  - ☐ National accounts / economic statistics
  - ☐ Social statistics
  - ☐ Environment statistics
- ☐ Water Agency
- ☐ Environment Agency
- ☐ Agriculture Agency
- ☐ National Meteorological Agency
- ☐ Water supply and sewerage service industries
- ☐ Hydrological or water research institutes
- ☐ Other – *Please specify*: ____

31. Does your agency cooperate with other agencies in your country in the area of water accounts?
- ☐ Yes - *Please describe the cooperation mechanism and the name of the institutions involved*: ____
- ☐ No – *Please skip to Question 33*

32. If yes to Question 31, is your agency the leading agency in the compilation of water accounts?
- ☐ Yes
- ☐ No - *Please specify the name of the leading agency*: ____

33. Are the water accounts compiled as part of the regular work programme?
- ☐ Yes
- ☐ No - as part of a pilot project

34. Where is the water accounts programme located within your agency?
- ☐ Within economic statistics
- ☐ Within environment statistics
- ☐ Other unit – *Please specify*: ____

SCOPE and COVERAGE

35. Which of the following types of water accounts does your agency compile?
- ☐ Supply and use tables
- ☐ Emission accounts
- ☐ Hybrid accounts
- ☐ Economic accounts – *Please specify*:
  - ☐ National expenditure accounts for wastewater management
  - ☐ National expenditure accounts for water management
  - ☐ Government accounts for water–related collective consumption services
  - ☐ Financing accounts for wastewater management
  - ☐ Financing accounts for water management
  - ☐ Water supply / sewerage for own use
- ☐ Asset accounts
- ☐ Quality accounts
- ☐ Other - *Please describe*: ____

36. At what spatial level are the water accounts produced? *Please mark all that apply.*
- ☐ National territory
- ☐ Administrative regions
  - ☐ For all administrative regions within the national boundary
  - ☐ For selected administrative regions only
- ☐ River basin
  - ☐ For all river basins within national boundary
  - ☐ For selected river basins only
- ☐ Other – *Please specify*: ____

37. What is the temporal reference of the water accounts?
- ☐ Same reference period as national accounts
- ☐ Hydrological year – *Please specify starting date*

  ____
- ☐ Other - *Please specify and provide starting date*

  ____

38. Are the water supply industry and sewerage service industry separately identified (i.e. distinct from each other) in the physical supply and use tables?
- ☐ Yes
- ☐ No

39. Which flows are recorded in the physical supply and use tables?
- ☐ Abstractions from the environment
  - ☐ For own use
  - ☐ For distribution
  - ☐ From surface water
  - ☐ From ground water
  - ☐ From soil water
  - ☐ From other sources (desalination/rainwater harvesting)
- ☐ Supply and use of water between economic units
  - ☐ Distributed water
  - ☐ Wastewater (to/from sewerage)
- ☐ Returns to the environment
  - ☐ To surface water
  - ☐ To ground water
  - ☐ To soil water
  - ☐ To sea
- ☐ Other – *Please describe* ____

40. Are the losses from distribution included in the physical supply and use tables?
- ☐ Yes
  - ☐ Separately identified
  - ☐ Not identified
- ☐ No

41. Are returns to the environment (from the economy) recorded by industry and household in the physical supply and use tables?
- ☐ Yes
- ☐ No

42. How many industries are separately identified in the physical supply and use tables?

____

USE of INTERNATIONAL CLASSIFICATIONS, STANDARDS and GUIDELINES

43. In the collection, compilation and dissemination of water statistics does your institution make use of any of the following? *Please mark all that apply.*

- ☐ System of Environment-Economic Accounting for Water 2007 (SEEAW 2007) or earlier versions
- ☐ Handbook of National Accounting: Integrated Environment and Economic Accounting 2003 (SEEA-2003)

DISSEMINATION

44. What is the time series of water accounts disseminated by your agency? *Please elaborate if different for different types of account.*

Time series: ____

45. What is the frequency of dissemination of water accounts by your agency? *Please elaborate if different for different types of accounts.*

Frequency: ____

46. How are water accounts made available?

- ☐ Paper publication
- ☐ On the internet - *Please provide link*: ____
  - ☐ As a publication (e.g. PDF or word file)
  - ☐ As fixed tables or summary data (e.g. spreadsheet)
  - ☐ In an interactive database
- ☐ As maps or data in GIS files
- ☐ Other - *Please specify*: ____

USES

47. In your country, what are the main uses of the water accounts?

- ☐ Support Integrated Water Resources Management (IWRM)
- ☐ Basis for reporting to international organizations
- ☐ Input in national accounts
- ☐ Derivation of indicators (e.g. water intensity)

  Please specify: ____
- ☐ Input in policy making – *Please list examples of policy uses*: ____
- ☐ Input in research and modeling – *Please list examples*: ____
- ☐ Other - *Please specify*: ____

48. In your country, who are the main users of water accounts? *Please mark all that apply.*

- ☐ Ministry of Finance
- ☐ Ministry of Environment
- ☐ Ministry of Agriculture
- ☐ Other Government institutions
- ☐ Academia
- ☐ Media
- ☐ Industries
- ☐ Other – *Please specify*: _____

49. In your opinion, what are the factors impeding the compilation of water accounts in your country? *Please mark all that apply.*

- ☐ Lack of cooperation/data sharing with other institutions
- ☐ Lack of compilation guidance material
- ☐ Lack of harmonized measurement units within the country
- ☐ Lack of internationally agreed methodology
- ☐ Lack of harmonized classifications
- ☐ Data availability
- ☐ Data quality
- ☐ Lack of interest from users
- ☐ Confidentiality
- ☐ Other - *Please specify*: _____

50. In your view, what are the compilation and implementation issues in water accounts that should be addressed by the international statistical community?

_____

FUTURE PLANS

51. Do you intend to make any changes to the current water accounts?

- ☐ Yes - *Please mark all that apply*
  - ☐ Increasing frequency of compilation
  - ☐ Decreasing frequency of compilation
  - ☐ Start producing accounts at regional level (e.g. river basin or administrative regions)
  - ☐ Stop producing accounts at regional level (e.g. river basin or administrative regions)
  - ☐ Improving quality
  - ☐ Start producing
    - ☐ Supply use tables
    - ☐ Emission accounts
    - ☐ Hybrid accounts
    - ☐ Economic accounts
    - ☐ Asset accounts
    - ☐ Quality accounts
  - ☐ Stop producing
    - ☐ Supply use tables
    - ☐ Emission accounts
    - ☐ Hybrid accounts
    - ☐ Economic accounts
    - ☐ Asset accounts
    - ☐ Quality accounts
- ☐ No

Please provide additional comments in the box below:

Help on selected questions

Question 2. Which of the following instruments or legal frameworks related to water or water governance are in place in your country?

For the purpose of this assessment, the **instruments** are defined as follows:

- **National water policy** is a national plan of action produced by government to guide decisions and actions relating to water and water management.
- **Integrated Water Resource Management** (IWRM) is a process "which promotes the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems".[GWP Technical Advisory Committee 2000]
- **National Water Efficiency Plans** are plans to increase water efficiency which includes increasing: (a) use efficiency, (b) recycling and reuse; and (c) supply efficiency (e.g. reducing leakage). Adapted from Jønch-Clausen 2004 http://www.gwpforum.org/gwp/library/TEC%2010.pdf

Questions 3, 4 and 5. For the purpose of this assessment, the **terms in the column headings** of the tables of questions 3, 4 and 5 are defined as follows**:**

- **Type of data collection** refers to the main process used in the collection of statistical data by the primary source of the data, those commonly used being survey data collection and administrative data collection. Each of these broad types may be further broken down on the basis of some characteristic, e.g. the nature of the data provider (enterprise/household) or exhaustiveness (sample survey, complete enumeration, and census). [*OECD glossary of statistical terms*]
- **Regular business surveys** refer to both sample surveys and censuses of businesses where the primary purpose is to collect data not related to water. For example, when questions on use of water or source of water are added to existing questionnaires (e.g. in surveys of economic activity).
- **Specialized water surveys** refer to both sample surveys and censuses carried out with the primary purpose of collecting data related to water. Such surveys may be undertaken for businesses or households.
- **Regular household surveys** refer to both sample surveys and censuses of households where the primary purpose is to collect data not related to water. For example, when questions on use of water or source of water are added to existing questionnaires.
- **Administrative data** are the set of units and data derived from an administrative source (that is, the organizational unit responsible for implementing an administrative regulation (or group of regulations), for which the corresponding register of units and the transactions are viewed as a source of statistical data). [*OECD glossary of statistical terms*]. Examples of administrative data are registers of licensed water users, custom data on imports/exports, data from tax records etc.
- **Water data received by your agency from other agencies** are the data collected outside of your own agency but are provided to your agency for the purpose of compiling or disseminating water statistics.
- **Water data compiled and/or disseminated by your agency**. Compilation refers to a process of condensing information by classifying and tabulating statistical data into various categories or groups with the object of producing statistics according to a determined tabulation programme. [Based on *OECD glossary of statistical terms*]. The compilation process may involve date collected by your agency, by other agencies or both. The water data disseminated by your agency may be the result of collection or compilation process by your agency. Your agency may also disseminate data that has been collected by other agencies without further statistical processing.
- **Water data collected by other agencies** are the data collected outside of your own agency but are not received or compiled by your agency. These data are compiled and disseminated to the public by other agencies.

The **industries** identified in the tables of questions 3 and 4 are defined according to **ISIC Revision 4**, See http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=27 :

- **Agriculture** (ISIC Revision 4, Section A)
- **Mining** (ISIC Revision 4, Section B)
- **Manufacturing** (ISIC Revision 4, Section C)
- **Electric power generation** (ISIC Revision 4, Section D)

- **Water supply** (ISIC Revision 4, Section E, Division 36, Class 3600). This class includes water collection, treatment and distribution activities for domestic and industrial needs. Collection of water from various sources, as well as distribution by various means is included. The operation of irrigation canals is also included; however the provision of irrigation services through sprinklers, and similar agricultural support services, is not included.
- **Sewerage** (ISIC Revision 4, Section E, Division 37, Class 3700). This class includes:
  - Operation of sewer systems or sewer treatment facilities;
  - Collecting and transporting of human or industrial wastewater from one or several users, as well as rain water by means of sewerage networks, collectors, tanks and other means of transport (sewage vehicles etc.);
  - Emptying and cleaning of cesspools and septic tanks, sinks and pits from sewage; servicing of chemical toilets;
  - Treatment of wastewater (including human and industrial wastewater, water from swimming pools etc.) by means of physical, chemical and biological processes like dilution, screening, filtering, sedimentation etc.;
  - Maintenance and cleaning of sewers and drains, including sewer rodding.

Question 3. For each of the physical water variables below, please mark if your agency collects data or if another agency collects data, compiles data and/or disseminates data.

Please see the general guidance on questions 3, 4 and 5 above.

For the purpose of this assessment, the **physical water variables** are defined as follows**:**

- **Precipitation** is the total volume of atmospheric wet precipitation (e.g. rain, snow, hail etc.) on a territory in a given period of time.
- **Evapo-transpiration** is the quantity of water transferred from the soil to the atmosphere by evaporation and plant transpiration.
- **Run-off** is the part of precipitation in a given country/territory and period of time, that appears as stream flow.
- **Outflows** are the flow of water out of a stream, lake, reservoir, container, basin, aquifer system, etc. Outflows can be to sea or to downstream countries.
- **Surface water** is water which flows over, or is stored on the ground surface. This includes water in reservoirs (dams), lakes, rivers, snow, ice and glaciers.
- **Groundwater** is subsurface water occupying the saturated zone. (UNESCO/WMO International Glossary of Hydrology, 2nd edition, 1992)
- **Soil water** is the water suspended in the uppermost belt of soil, or in the zone of aeration near the ground surface, that can be discharged in to the atmosphere by evapo-transpiration.
- **Water abstraction** is the amount of water that is removed from any source, either permanently or temporarily, in a given period of time for consumption and production activities. Water used for hydroelectric power generation, is also considered abstraction. Total water abstraction can be broken down according to the type of source, i.e. water resources (surface water, groundwater, soil water) and other sources (desalinized and rainwater) and the type of use.
- **Water desalinized**. Desalinization is when salty water, typically seawater, is converted to fresh water suitable for use. The volume refers to the amount of freshwater that results from desalination
- **Precipitation collected** is water collected by industries and households directly from falling rain, snow, sleet and collected by contact with dew and mist. A typical example of collection of precipitation is roof rain harvesting by households.
- **Water losses in distribution** is the volume of water lost during distribution of water from one economic unit to another. For example, between a point of abstraction and a point of use or between points of use and reuse. This question also asks that this information be split into **leakage, evaporation** and **theft**.
- **Water used** is the water intake of industries and households for production and consumption activities. This question asks that this be broken into the water used by agriculture (ISIC Section A), electric power generation (ISIC Revision 4, Section D), all other industries and households.
- **Water supplied** refers to the amount of water that is supplied by one economic unit to another economic unit. This should be recorded net of losses. In the case of this question it asks that this be broken into to the water supplied by the water supply industry (ISIC Revision 4, Division 36) and that by all other industries.

- **Wastewater** is 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. It includes discharges of cooling water.
- **Emissions to water** includes the release of pollutants directly to water by industries and households as well as the indirect release by transfer to an off-site wastewater treatment plant.
- **Treated wastewater** is the volume of water from which pollutants have been removed.
- **Wastewater reuse** is the wastewater delivered to a user for further use with or without prior treatment. Recycling within industrial sites is excluded.
- **Wastewater discharged to inland waters** includes the water discharged to rivers, lakes, reservoirs or to groundwater. It does not include water discharged to artificial ponds used within wastewater treatment or sewerage plants**.**
- **Irrigation** is the artificial application of water to lands for agricultural purposes.
- **Irrigation techniques** or **management practices** are ways water is applied to the land (e.g. flooding, sprinklers, or drip-lines). Management practices include the leveling of land, irrigation scheduling, use of soil moisture probes, etc)
- **Ambient water quality** refers to data from measurements of pollutant concentrations in ambient water bodies. Water quality classes are usually based on ranges of concentrations of selected pollutants and other quality parameters.

Question 4. For each of the economic variables related to water below, please mark if your agency collects data or if another agency collects data, compiles data and/or disseminates data

Please see the general guidance on questions 3, 4 and 5 above.

For the purposes of this assessment the **economic water variables** are defined as follows**:**

- **Sales of water** by the water supply industry (ISIC Revision 4, Division 36) is defined for the purposes of this survey as the value of the water sold, including supply charges, but excluding taxes and subsidies.
- **Sales of sewerage services** by the sewerage industry (ISIC Revision 4, Division 37) is defined for the purposes of this survey as the value of sewerage services sold, but excluding taxes and subsidies.
- **Government subsidies** are any subsidy received from government by industry (See SNA 1993 paragraphs 7.78), in the context of this questionnaire for the water supply industry (ISIC, Revision 4, Division 36) or the sewerage industry (ISIC Revision 4, Division 37):
  - **For operating costs -** to cover intermediate consumption or the compensation of employees.
  - **For specific capital items** – to cover the purchase of the fixed assets used for managing, storing, transporting, treating and discharging of natural water (CPC Version 2, Class 1800) and sewerage (CPC Version 2, Class 941). This includes reservoirs, pipes, purification (drinking water treatment) plants, wastewater treatment plants, sewers, pumps, septic tanks, sewerage meters, administration buildings and the land use for these activities
- **Other revenue** is any revenue not from sales of drinking water or sewerage services, e.g. revenue from the output of other good and services, interest on deposits, etc.
- **Compensation of employees** (e.g. wages) is the total remuneration, in cash or in kind, payable by an enterprise to an employee in return for work done by the latter during the accounting period. See SNA 1993 paragraph 7.21.
- **Other production costs** are equivalent to intermediate consumption in the SNA 1993 and consist of the value of the goods and services consumed as inputs by a process of production, excluding fixed assets whose consumption is recorded as consumption of fixed capital; the goods or services may be either transformed or used up by the production process (e.g. insurance, rent, fuel, electricity, chemicals, etc.). See SNA 1993 paragraph 6.147.
- **Taxes** are compulsory, unrequited payments, in cash or in kind, made by institutional units to government units; they are described as unrequited because the government provides nothing in return to the individual unit making the payment, although governments may use the funds raised in taxes to provide goods or services to other units, either individually or collectively, or to the community as a whole. See SNA 1993 paragraphs 7.48 and 8.43.
- **Capital expenditure** is the expenditure in a reference period on the fixed assets used for managing, storing, transporting, treating and discharging sewerage (CPC Version 2, Class 941). This includes wastewater treatment plants, sewers, pumps, septic tanks, sewerage meters, administration buildings and the land use for these activities. This is equivalent to gross fixed capital formation in the SNA 1993 which is measured by the total value of a producer's acquisitions, less

disposals, of fixed assets during the accounting period plus certain additions to the value of non-produced assets (such as subsoil assets or major improvements in the quantity, quality or productivity of land) realized by the productive activity of institutional units. See SNA 1993 paragraphs 10.33 and 10.51.

- **Value of the water supply infrastructure** (i.e. fixed capital) is the total value at the end of a reference period of the fixed assets used for managing, storing, treating, transporting, pumping and applying water (CPC Version 2, Class 1800). This includes reservoirs, pipes, pumps, water tanks, sprinkler systems, water meters, administration buildings and the land use for these activities. Fixed assets are tangible or intangible assets produced as outputs from processes of production that are themselves used repeatedly or continuously in other processes of production for more than one year. See SNA 1993 paragraph 10.33.
- **Value of the sewerage infrastructure** (i.e. fixed capital) is the total value at the end of a reference period of the fixed assets used for managing, storing, transporting, treating and discharging sewerage (CPC Version 2, Class 941). This includes wastewater treatment plants, sewers, pumps, septic tanks, sewerage meters, administration buildings and the land use for these activities. Fixed assets are tangible or intangible assets produced as outputs from processes of production that are themselves used repeatedly or continuously in other processes of production for more than one year. See SNA 1993 paragraph 10.33.
- **Tariffs and charges** are the schedule rates or fees associated with the supply of water or sewerage services. This includes the price per m^3 (which may vary depending on the volume used) as well as fixed charges (e.g. a connection or service charge) which are applied irrespective of the volume of water or sewerage services used.
- **Cost of water use** to industry and household is the total price paid by the users for the water (CPC Version 2, Class 1800), i.e. the price (e.g. $ per m^3) multiplied by the volume (m^3) of water used plus any service charges associated with the delivery of water.
- **Cost of sewerage services** to industry and households is the total price paid by the users of sewerage services (CPC Version 2, Class 941).

Question 5. For each of the social variables related to water below, please mark if your agency collects data, receives data from other institutions, compiles data and/or disseminates data.

Please see the general guidance on questions 3.4 and 5 above.

For the purposes of this assessment, the **social water variables** are defined as follows:

- **Population with access to improved water source** is amount of the population using improved drinking water sources (including household water connection, public standpipe, borehole, protected dug well, protected spring, rainwater collection and bottled water). See MDG 7, indicator 30: http://mdgs.un.org/unsd/mdg/Metadata.aspx.
- **Population with access to improved sanitation** is the amount of the population using improved sanitation facilities (including flush to piped sewer system, flush to septic tank, flush/pour flush to pit, flush/pour flush to elsewhere). See MDG 7, indicator 31 and http://mdgs.un.org/unsd/mdg/Metadata.aspx
- **Households or population connected to piped water** is the amount of the households or population with water supplied via a pipe, usually by the water supply industry (ISIC Revision 4, Division 36). It does not include household with rainwater tanks or wells from which water is piped onto dwellings.
- **Households or population connected to sewer** is the amount of the households or population supplied with sewerage services, usually by the sewerage industry (ISIC Revision 4, Division 37). It does not include household connected to septic tanks or with chemical or other portable toilets.

Question 6. At what spatial level are the water statistics produced?

Administrative regions include states/provinces, municipalities, counties, shires, local government areas, census collection districts, postcodes/zip codes.

Question 9. Does your agency cooperate with other agencies in your country in the area of water statistics?

For the purpose of this assessment, a cooperation mechanism refers to a formal or informal agreement between agencies for data sharing.

Question 10. If yes to Question 9, is your agency the leading agency in the compilation of water statistics?

The agency in charge of water statistics, responsible for the coordination with other agencies and for dissemination of water statistics, is considered to be the **leading agency**. Note that different agencies

may collect or compile different areas of water statistics. If this convention is not considered applicable in the country, the respondent is kindly requested to provide a comment on the specific organizational set-up.

Question 20: To which of the following international organizations/regional organizations does your country report or transmit water statistics

- UNSD/UNEP questionnaire on water statistics. (http://unstats.un.org/unsd/environment/questionnaire2006.htm)
- OECD/Eurostat questionnaire.
- FAO / Aquastat www.fao.org/nr/water/aquastat/main/index.stm
- European Commission
- UNEP Gems / Water (http://www.gemswater.org/about_us/index-e.html)
- World Water Assessment Programme (http://www.unesco.org/water/wwap/index.shtml)
- World Bank (IBNET stand for Water and Sanitation International Benchmarking Network www.ib-net.org)
- Questionnaires from UN Regional Commissions

Question 21. In your country, what are the main uses of water statistics?

- **Integrated Water Resource Management** (IWRM) is a process "which promotes the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems".[GWP Technical Advisory Committee 2000]

Questions 28, 35 and 51 require information of the **types of water accounts.**

These are defined in the SEEAW 2007. See http://unstats.un.org/unsd/envaccounting/SEEAWDraftManual.pdf and brief description in below:

- **Physical supply and use tables** record abstraction of water from the environment, the supply and use of water within the economy and returns of water to the environment.
- **Emission accounts** describe the release of pollutants into water resources through the direct and indirect (through a wastewater treatment plant) discharge of wastewater into water resources.
- **Hybrid accounts** present, in a consistent manner, physical and monetary information on the supply and use of water by juxtaposing the conventional 1993 SNA supply and use tables with the corresponding physical tables.
- **Economic accounts** describe the economic transactions related to water (taxes, permits, licenses) and consist of environmental protection expenditure accounts for wastewater management or water management and exploitation; government accounts for water–related collective consumption services; financing accounts for wastewater management or water management and exploitation; water supply / sewerage for own use.
- **Asset accounts** describe the stocks and changes in stocks (natural and anthropogenic) during the accounting period.
- **Quality accounts** describe the quality of natural resources at the beginning and end of the accounting period.

Question 31. Does your agency cooperate with other agencies in your country in the area of water accounts?

For the purpose of this assessment, a cooperation mechanism refers to a formal or informal agreement between agencies for data sharing.

Question 32. Is your agency the leading agency in the compilation of water accounts?

The agency in charge of water account is responsible for the coordination with other agencies and for dissemination of water accounts is considered to be the **leading agency**. Note that different agencies may collect or compile different areas of water accounts. If this convention is not considered applicable in the country, the respondent is kindly requested to provide a comment on the specific organizational set-up.

Question 39. Which flows are recorded in the physical supply and use tables?

The types of **flows in the physical supply and use tables** are defined in the SEEAW 2007 (see http://unstats.un.org/unsd/envaccounting/SEEAWDraftManual.pdf) and a brief description of each is provided below:

- **Abstractions from the environment** (as defined in question 3)
  - **For own use** is the water abstracted and used by the industry or household abstracting the water. Once water is used, it can be delivered to another user for re-use or for treatment or returned directly to the environment. It includes non-consumptive uses such as hydro-electric power generation and mine-dewatering.
  - **For distribution** is the water abstracted for the purpose of distributing it.
  - **Surface water, ground water** and **soil water** are as defined in question 3
  - **From other sources** (desalination/rainwater harvesting) are as defined in question 3
- **Supply and use of water between economic units** refers to the amount of water that is supplied by an economic unit to another
  - **Wastewater** (to/from sewerage) as defined in question 3.
- **Returns to the environment** is the water returned into the environment by an economic unit during a given period of time after use (use includes non-consumptive uses such as hydro-electric power generation and mine-dewatering). Returns can be classified according to the receiving media (i.e. water resources and sea water) and to the type of water (e.g. treated water, cooling water, etc.).
  - **Surface water**, **ground water**, and **soil water** are as defined in question 3

Question 40. Are the losses from distribution included in the physical supply and use tables?

Losses in distribution are recorded in the water account as the volume of water lost during distribution of water from one economic unit to another, i.e. between a point of abstraction and the point of use, and between points of use and reuse. It includes leakage (e.g. from leaky or burst pipes), evaporation (e.g. from open channels), and theft.