Session 4.2: Water Questionnaire

برنامج الأمم المتحدة للبيئة

UNSD

شعبة الإحصاءات في الأمم المتحدة)UNSD(و برنامج الأمم المتحدة للبيئة

استمارة الإحصاءات البيئية لعام 2018

الفرع: المياه

قائمة المحتويات

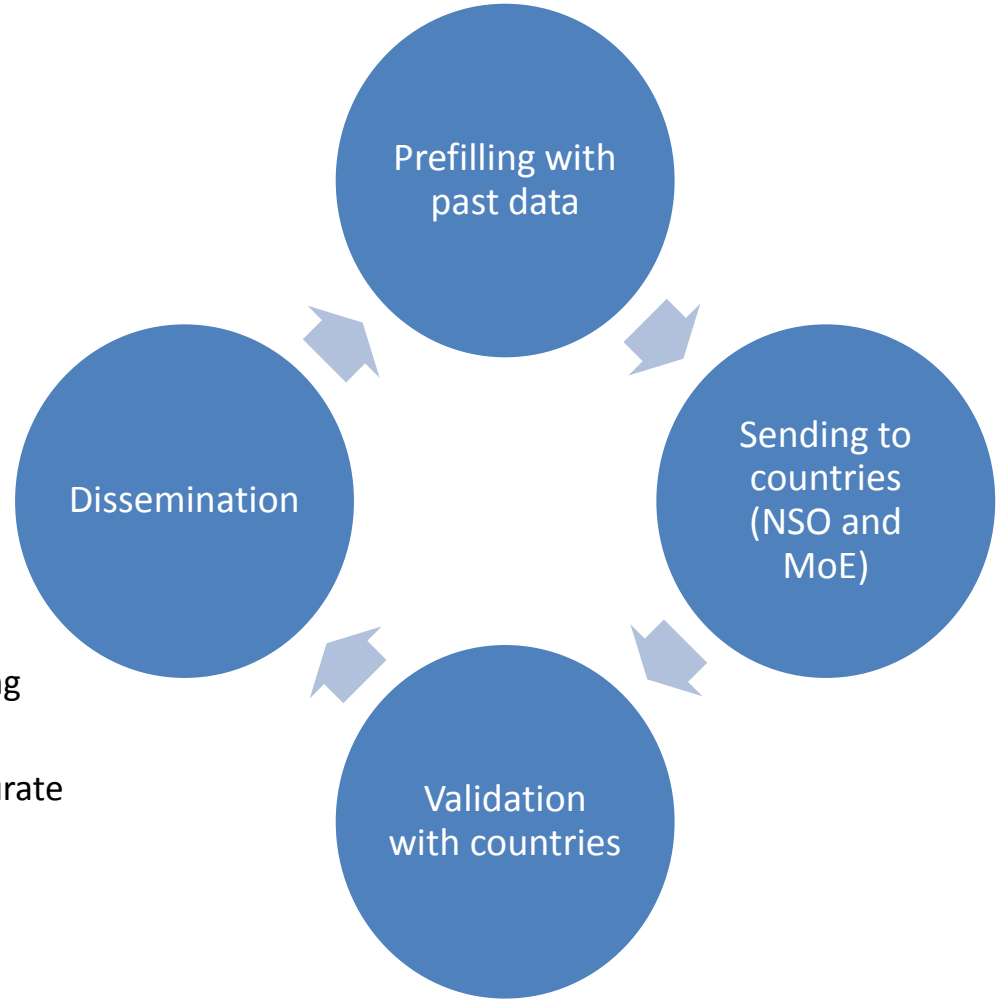
Workshop on Environment Statistics and Information for Sustainable Development in the Arab Region

(Beirut, Lebanon, 12-16 November 2018)

General Information

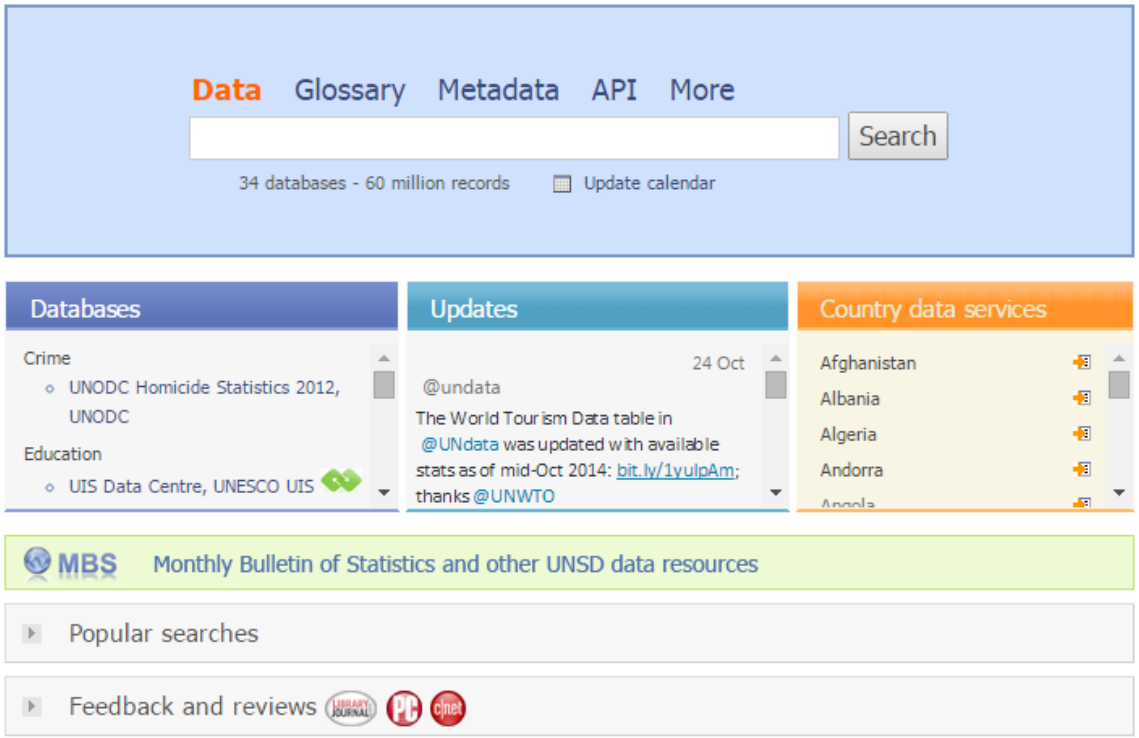
- Since 1999, about every two years. 9th round sent out in September 2018 (waste and water statistics)
- About 172 member states and areas in 5 languages
- Complemented by the OECD/Eurostat Joint Questionnaire on the State of the Environment – their member states
- Waste statistics
  - R1: Generation of Waste by Source
  - R2: Management of Hazardous Waste
  - R3: Management of Municipal Waste
  - R4: Composition of Municipal Waste
  - R5: Management of Municipal Waste — City Data
  - R6: Electronic Waste Generation and Collection
- Water statistics
  - W1: Renewable Freshwater Resources
  - W2: Freshwater Abstraction and Use
  - W3: Water Supply Industry (ISIC 36)
  - W4: Wastewater Generation and Treatment
  - W5: Population Connected to Wastewater Treatment

Cycle

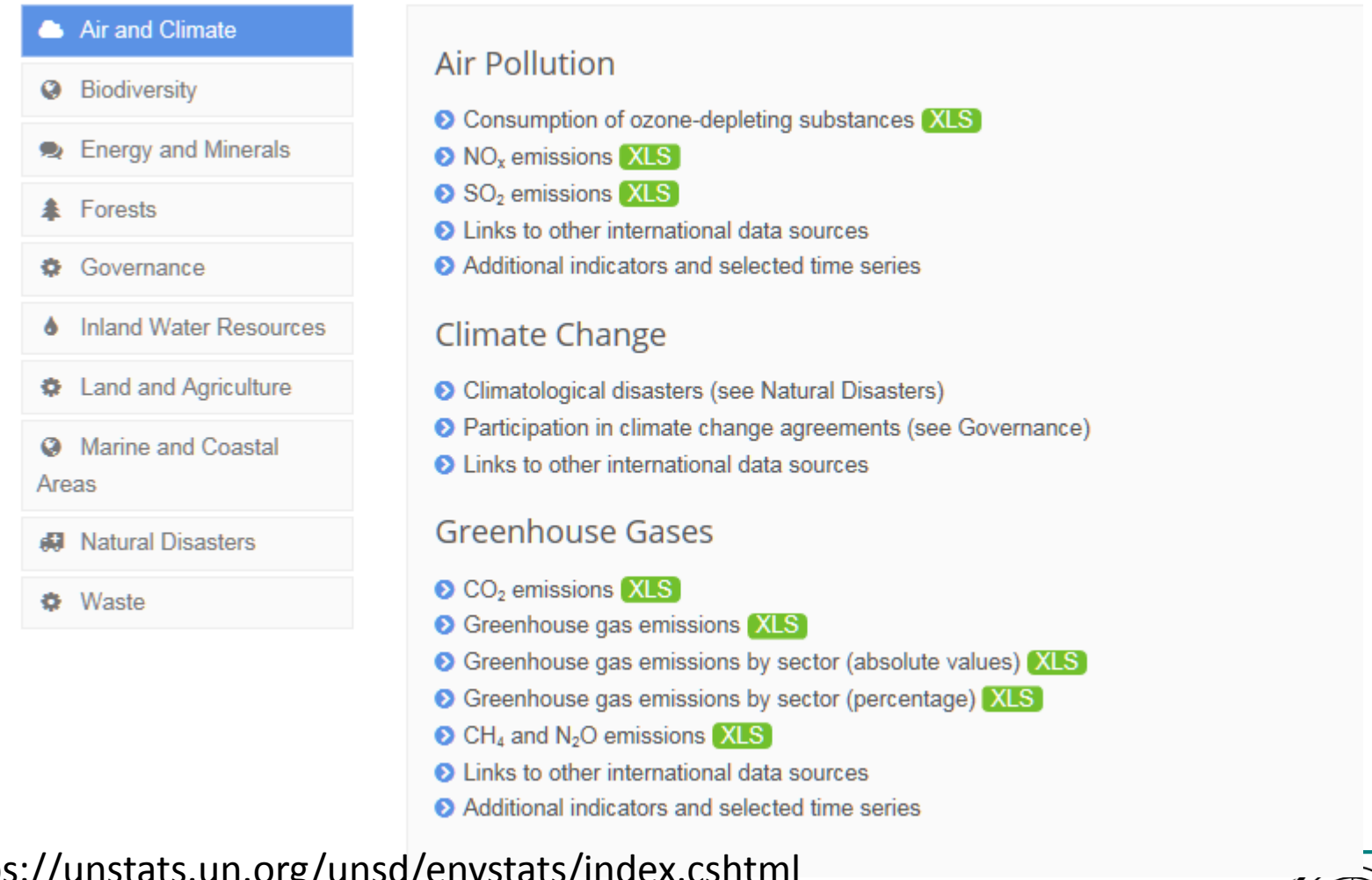


- No estimation or imputation for missing values from UNSD
- Data considered accurate only if confirmed by countries

Dissemination: Environment statistics — UN Data



Dissemination: UNSD Environmental Indicators



https://unstats.un.org/unsd/envstats/index.cshtml

Country Snapshot - Lebanon

Data | Sources and Footnotes

Air and climate

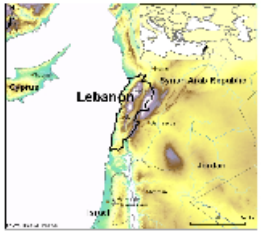
Emissions of:		Year
SO_2 (1000t)	93	2000
SO_2 per capita (kg)	29	2000
NO_x (1000t)	59	2000
NO_x per capita (kg)	18	2000
CO_2 (million tonnes)	22	2014
CO_2 per capita (tonnes)	4	2014
GHG (million tonnes CO_2 eq.)	18	2000
GHG per capita (tonnes CO_2 eq.)	6	2000
Consumption of ozone depleting CFCs (ODP t)	0	2013

Biodiversity

Proportion of terrestrial and marine areas protected (%)	1	2014
Number of threatened species	88	2016
Fish catch (tonnes)	3,638	2015
Change in fish catch from previous year (%)	18	2015

Economy

GDP growth rate from previous year (%)	1	2016
GDP per capita (at current prices - $US)	8,400	2016
% Value added: agriculture, hunting, forestry, fishing	3	2016
% Value added: mining, manufacturing, utilities	13	2015



Note: The boundaries, the names shown, and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Permanent meadows and pastures (% of agric. land)	61	2015
Change in agricultural land area since 1990 (%)	9	2015
Forest area (sq km)	1,373	2015
Change in forest area since 1990 (%)	5	2015

Population

Population (1000)	5,851	2015
Population growth rate from previous year (%)	4	2015

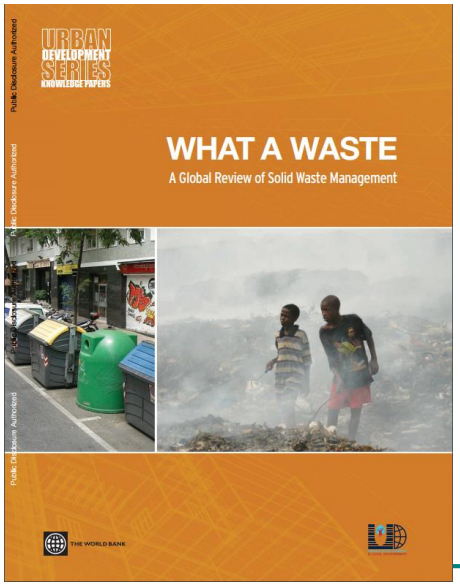
Waste

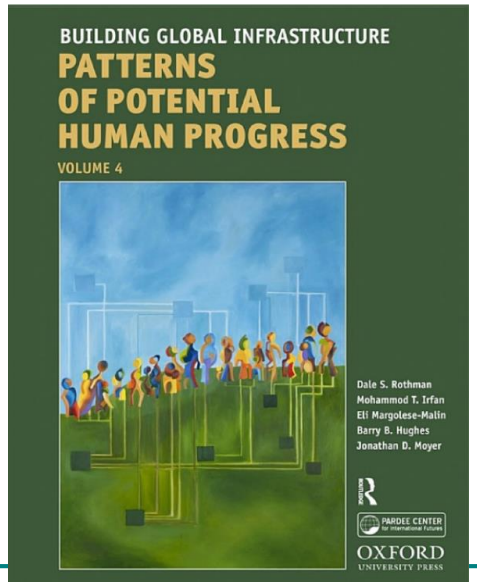
Dissemination : Country Snapshot — Lebanon

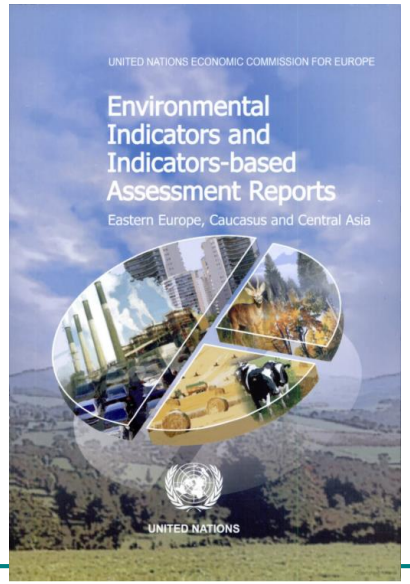
United Nations Statistics Division

Key Data Users

- International agencies (UNEP, UN-HABITAT, WORLD BANK)
- Academia/Students
- Journalists
- General Public

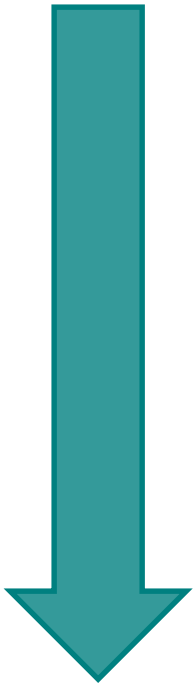




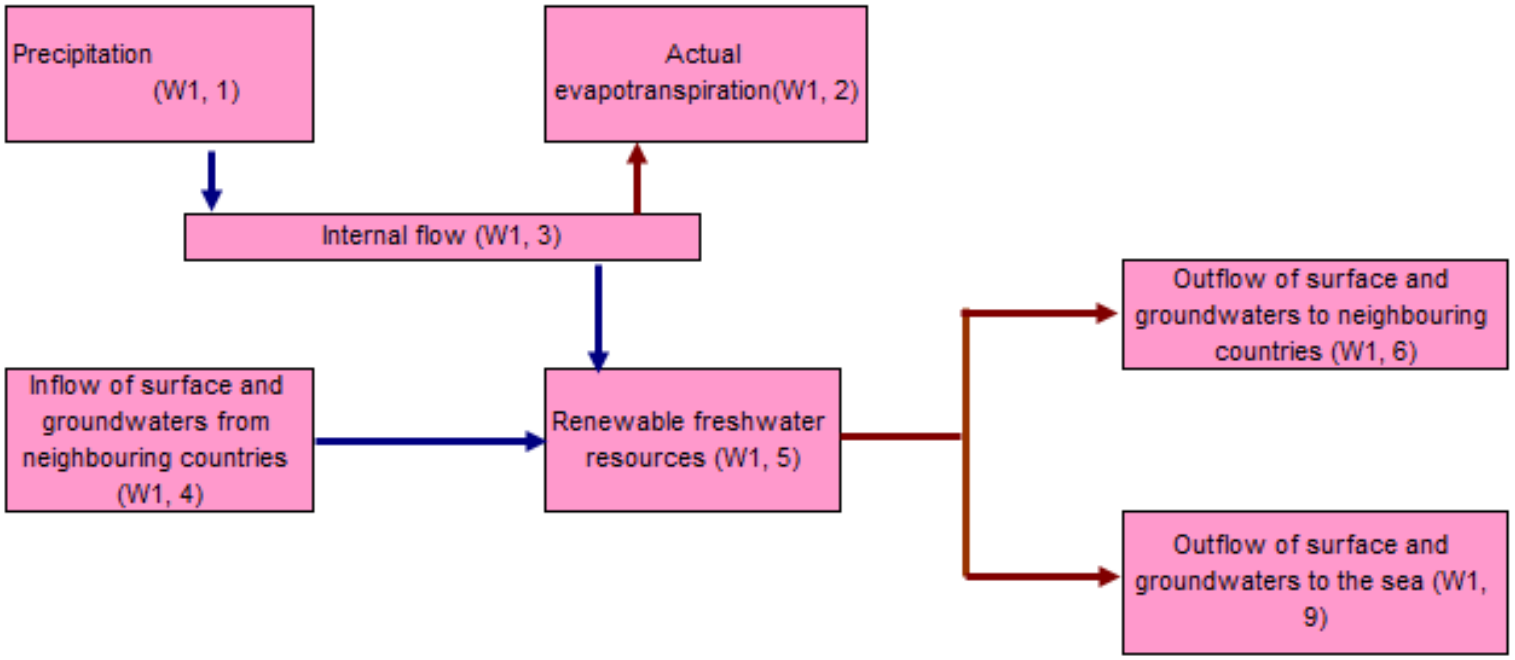


Water Section

- Introduction, Steps to Follow, Description of Tables
- List of Definitions
- W1: Renewable Freshwater Resources
- W2: Freshwater Abstraction and Use
- W3: Water Supply Industry (ISIC 36)
- W4: Wastewater Generation and Treatment
- W5: Population Connected to Wastewater Treatment



W1 Renewable Freshwater Resources



W1 Renewable Freshwater Resources (mio m3/y)

Country	Precipitation		Actual evapotranspiration		Internal flow		Inflow of surface and groundwaters from neighbouring countries		Renewable freshwater resources		Outflow of surface and groundwaters to neighbouring countries		Outflow of surface and groundwaters to the sea	
Algeria	2015	106806	2012	67500	2012	12400	2015	67 [1]	2012	12707	2015	268 [2]		
Bahrain	2015	51					1990	112			2015	0	1990	4
Egypt	2015	1300	2003	2100	2015	1300	2015	55500	2015	56800	2015	0	2015	14
Iraq	2015	62326	2015	52415	2015	9911	2015	35340	2015	45251			2015	2122
Jordan	2015	8884	2015	8154	2015	730	2015	142	2015	872				
Kuwait	2013	118	2013	10	2013	108			2013	108				
Lebanon	2009	8600	2009	4500	2009	4100			2009	4100				
Morocco	2012	91000	2012	79500	2012	11500	1999	0	2009	43000				
Oman	2000	9481												
Qatar					2011	66 [3]	2011	2 [4]	2011	68	2011	0 [5]	2011	18
Saudi Arabia	2016	192000												
Sudan	2011	7087												
Syrian Arab Republic	2007	39131	2007	33653	2007	5478	2007	9734	2007	15212				
Tunisia	2013	18360	2013	16539	2013	1821			2013	1821				
United Arab Emirates	2015	1496												
Yemen	2002	55000	2002	51000	2002	4000	2015	0	2002	4000	2015	0		

1 The surface water and groundwater inflows from neighboring countries have been evaluated only from Tunisia to Algeria, and this according to a study made at the level of the National Agency for Hydraulic Resources (ANRH) . Algeria receives a volume of 66.8 hm3 from the watersheds bordering the far north-west of Tunisia. Inflows from Morocco are not known.

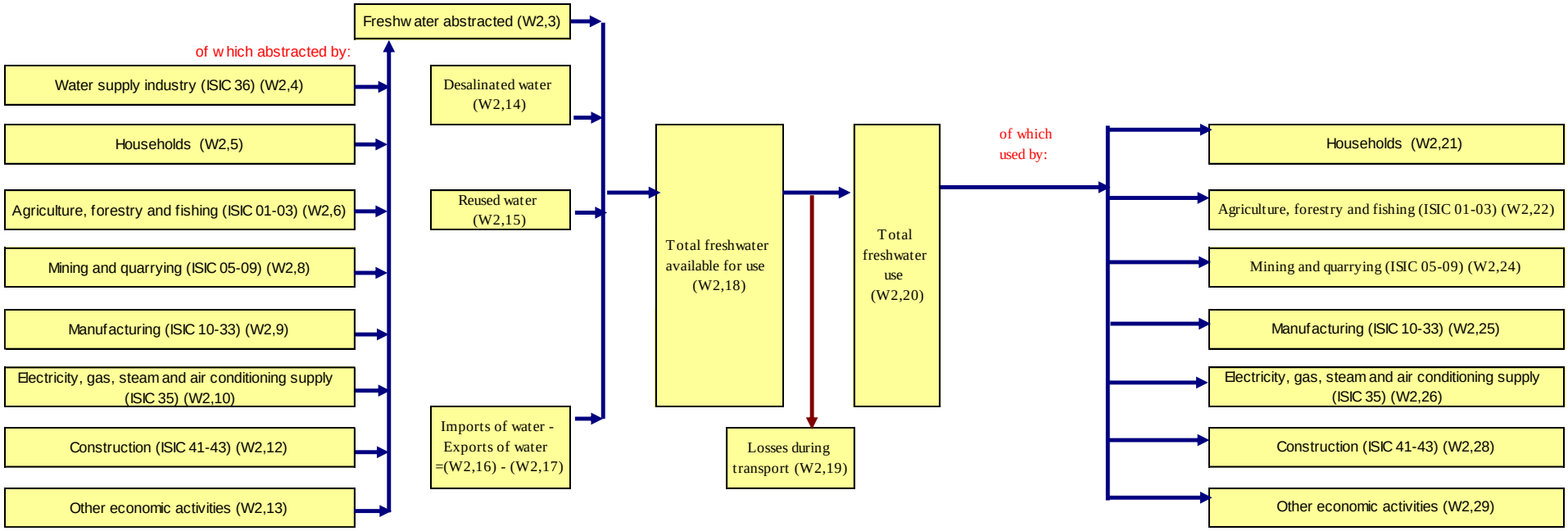
2 Tunisia receives a volume of 268 hm3 from Algerian border watersheds. Outflows to Morocco are not known.

3 No data about rainfall and evapotranspiration in terms of volume are available. However, the internal flow can be considered as equal to water recharge (from rainfall) to groundwaters, as there are no surface waters in Qatar. Data source: Water Balance of the Ministry of Environment.

4 Only one estimate exists: 2.2 million m3/year; data source: Department of Agricultural and Water Research (DAWR, 2006).

5 No outflow to neighboing countries.

W2 Freshwater Abstraction and Use



Freshwater Abstraction as a % of Renewable Freshwater Resources (%)

Country	1990	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Algeria			55.2	59.5	59.5	54.1	55.9	57.2	51.2	53.9	54.7	56.3
Egypt						97.3	127.7	107.3	85.6	71.3	82.4	112.9
Iraq									41.8	52.5	73.9	
Jordan					58.0	51.9	66.1		131.5	126.5 [2]	158.5 [2]	113.7
Morocco							28.3			34.8	16.2	17.8
Qatar				428.0	1017.7	538.3	673.1	397.1	217.9	759.9	857.5	364.9
Tunisia	29.8 [3,4]	70.9 [3,4]	81.9 [3,4]	97.4 [3,4]	112.3 [3,4]	60.7 [3,4]	53.5 [3,4]	80.7 [3,4]	71.4 [3,4]	69.6 [3,4]	122.0 [3]	75.8 [3]
Yemen		157.7	196.9									

Country	2010	2011	2012	2013	2014	2015
Algeria	56.7	59.1	61.4			
Egypt						101.9
Iraq		56.1	79.5	69.1 [1]	86.9 [1]	82.1 [1]
Jordan	92.3	130.5	126.9	123.6	142.7	97.7
Morocco						
Qatar	1065.3	368.3				
Tunisia	127.0 [3]	94.1 [3]	89.5 [3]	161.7 [3]		
Yemen						

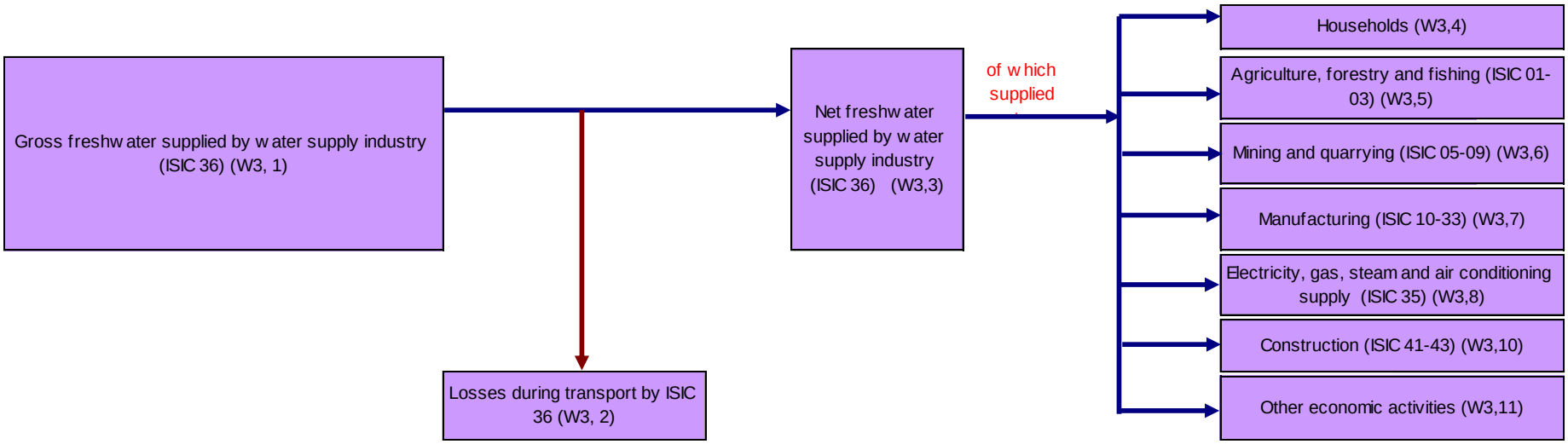
1 Figure may exclude water abstracted from cofferdams. Figure subject to be modified in future.

2 It consists of 823.3 million cubic meters abstracted from all sources and 11.68 million cubic meters abstracted from saline ground water and desalinized.

3 Desalinated water is included.

4 Renewable freshwater resources = Internal flow. The external inflow of surface water and groundwater is not included.

W3 Water Supply Industry (ISIC 36)



Gross freshwater supplied by water supply industry (ISIC 36) (mio m3/y)

Country	1990	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Algeria											5886.0	6139.0
Bahrain	105.0						157.1	162.4	173.6	175.9	204.1	223.8
Egypt			5300.0			5874.0	6074.0	6274.0	8504.0	7675.0	9000.0	9500.0
Iraq		1883.0	2169.0	2327.0	2514.0	1597.6	1597.6	2239.3	2092.9	2613.8	3016.7	3616.8
Jordan								291.0	284.6	286.9	307.4	318.2
Kuwait	216.2	279.8	402.2	416.1	443.9	464.0	475.9	506.9	521.0	544.5	582.2	598.8
Lebanon							1000.0 [1]	1000.0 [1]				
Qatar				148.9 [2]	154.9 [2]	158.2 [2]	172.1 [2]	188.5 [2]	217.3 [2]	242.5 [2]	301.8 [2]	333.3 [2]
Saudi Arabia												
Tunisia	929.0	1038.0	1349.0	1071.0	1402.0	1373.0	1309.0	1464.0	1516.0	1564.0	1488.0	1492.0
United Arab Emirates										1514.6	1594.1	1652.7
Yemen			101.0 [3]	105.9 [3]	110.2 [3]	115.0 [3]	121.2 [3]	130.0 [3]	132.0 [3]	139.5 [3]	142.2 [3]	150.1 [3]

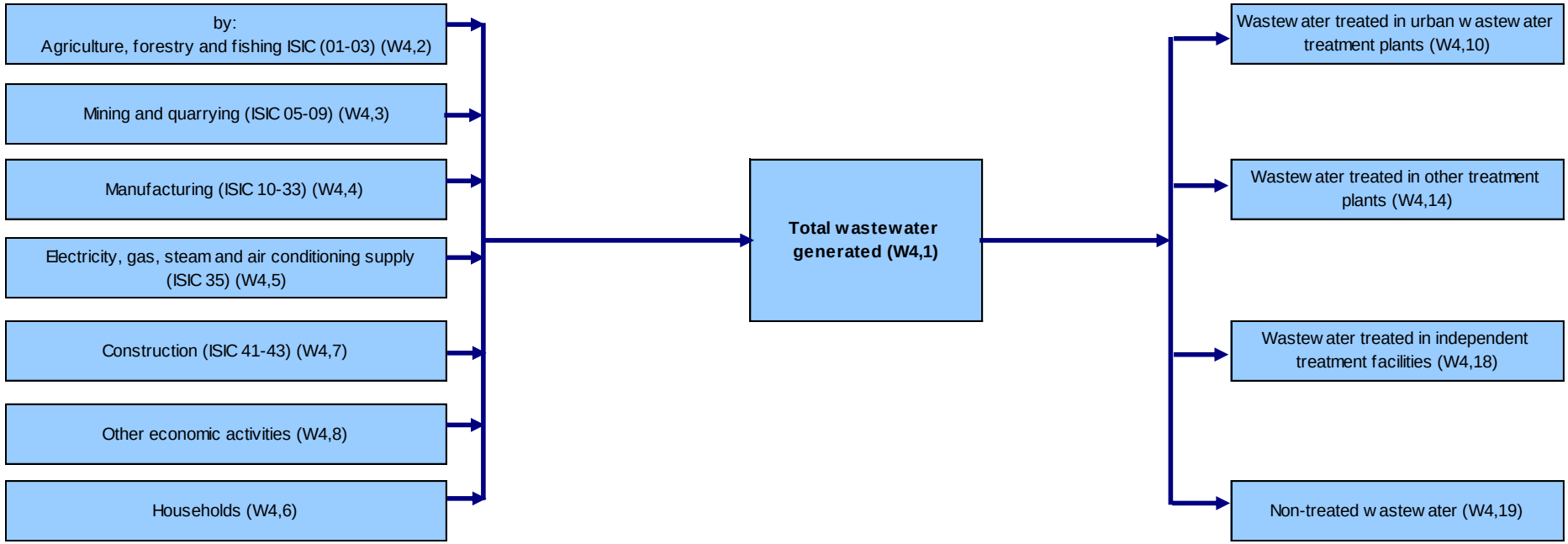
Country	2010	2011	2012	2013	2014	2015	2016
Algeria	6313.0	6353.0	6552.0	3000.0	3100.0	3600.0	
Bahrain	240.3	250.0	250.7	257.6	268.6	267.9	
Egypt						9200.0	
Iraq	3728.9	4106.3	4584.6	4866.4	5102.0	4883.4	
Jordan	343.8	341.5	345.5	381.0	429.0	440.0	
Kuwait	609.8	627.8	638.4	643.3			
Lebanon							
Qatar	362.4 [2]	391.2 [2]	426.1 [2]				
Saudi Arabia		2423.0	2527.0	2731.0	2874.0	3026.0	3129.0
Tunisia	1584.0	1569.0	1695.0	1747.0			
United Arab Emirates	1679.6	1713.3	1818.6	1874.6	1949.2		
Yemen	151.8 [3]	146.7 [3]	146.8 [3]	151.1 [3]			

1 From a total amount of 1250 mio m3/y of abstracted freshwater, 1000 mio m3/y are from public institutions and 250 mio m3/y are abstructed by private individual wells.

2 System Volume Input according to Kahramaa

3 These data on fresh water provided by the water supply industry are provided by the public institution only (the public network) and it is under the control of the government (public sector only), mostly in urban areas. They do not include the private network and the cooperative network. This applies to the proportion of the population supplied.

W4 Wastewater Generation and Treatment



Wastewater generation, treatment, and proportion of wastewater treated

Country	Total wastewater generated		Total wastewater treated		Proportion of wastewater treated	
	1000 m^3/d		1000 m^3/d		%	
Bahrain	2015	425.4	2015	425.4	2015	100.0
Egypt	2015	32600.0				
Iraq	2015	1930.4	2015	1386.0	2015	71.8
Morocco	2015	2054.8	2015	1366.2	2015	66.5
Saudi Arabia	2016	6858.1				
United Arab Emirates	2015	1985.6	1			

1 Wastewater collected in government and semi-government water treatment plants.

W5 Population Connected to Wastewater Treatment

Line	Category	Unit
1	**Population connected to wastewater collecting system**	%
2	**Population connected to wastewater treatment**	%
3	*of which at least secondary treatment*	%
4	Population with independent wastewater treatment (e.g., septic tanks)	%
5	Population not connected to wastewater treatment (100% - (2) - (4))	%

Population Connected to Wastewater Treatment

Country	Latest year available	Population connected to wastewater collecting system	Population connected to wastewater treatment	Population with independent wastewater treatment (e.g., septic tanks)	Population not connected to wastewater treatment
Algeria	2015	90.0	65.0	10.0	25.0
Bahrain	2015	88.0	88.0	12.0	0.0
Iraq	2015	38.4 [1]	27.1	45.3	27.6
Jordan	2015	62.1	62.1		
Kuwait	2013	100.0	100.0	0.0	0.0
Lebanon	2004	67.4			
Morocco	2015	74.0			
Saudi Arabia	2013	100.0	47.0		
State of Palestine	2015	53.9			
Tunisia	2014	58.3			
United Arab Emirates	2007	78.3 [2]	78.3 [2]		22.0 [2]
Yemen	2013	37.1 [3]			

1 The reason for the high percentage of employees is the result of the integration of workers with wastewater networks with those employed by the shared water network (wastewater and rain).

2 The ratio represents the number of housing units according to the Household Income and Expenditures Survey for the year 2007-2008.

3 This is the proportion of inhabitants connected to the national wastewater collection system (the sanitation and sewerage system) in urban areas only, not in the country as a whole.

The Sustainable Development Goals

The Sustainable Development Goals

IAEG-SDGs tier classification for global SDG indicators (updated 15 Dec 2017):
https://unstats.un.org/sdgs/iaeg-sdgs/tier-classification/

Ensure availability and sustainable management of water and sanitation for all

Target 6.3: By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.

=> **Indicator 6.3.1: Proportion of wastewater safely treated**

Target 6.4: By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.

=> **Indicator 6.4.1: Change in water-use efficiency over time**

=> **Indicator 6.4.2: Level of water stress: freshwater withdrawal as a proportion of available freshwater resources**

Indicator 6.3.1: Proportion of wastewater safely treated (tier II)

- Custodian Agencies: WHO, UN-Habitat, UNSD; partner agencies: UN Environment, OECD and Eurostat
- Endeavouring to use the UNSD/UN Environment Questionnaire to the extent possible.
  - Response rates remain a challenge
- UNSD participated in an Expert Group Meeting on Global Wastewater Monitoring for the SDGs with co-custodians and other experts.
- Available metadata are here: https://unstats.un.org/sdgs/metadata/

Table W4, Line:	Category	Unit
1	**Total wastewater generated**	1000 m^3/d
10	Wastewater treated in urban wastewater treatment plants	
14	Wastewater treated in other treatment plants	
18	Wastewater treated in independent treatment facilities	

Indicator = (Lines 10 + 14 + 18)/Line 1

Table W4: Wastewater Generation and Treatment

Line	Category	Unit
1	Total wastewater generated	Millions metres^3 per year
2	By: Agriculture, forestry and fishing (ISIC 01-03)	
3	Mining and quarrying (ISIC 05-09)	
4	Manufacturing (ISIC 10-33)	
5	Electricity, gas, steam and air conditioning supply (ISIC 35)	
6	Electricity industry (ISIC 351)	
7	Construction (ISIC 41-43)	
8	Other economic activities	
9	Households	
10	Wastewater treated in urban wastewater treatment plants	
11	Of which: Primary treatment	
12	Secondary treatment	
13	Tertiary treatment	
14	Wastewater treated in other treatment plants	
15	Of which: Primary treatment	
16	Secondary treatment	
17	Tertiary treatment	
18	Wastewater treated in independent treatment facilities	
19	**Non-treated wastewater**	
20	Sewage sludge production (dry matter)	1000 t

Indicator 6.4.1: Change in water-use efficiency over time (tier II)

- Custodian Agency: FAO; partner agencies: UNSD, UN Environment, IUCN, OECD and Eurostat
- The indicator can be derived using the seven variables in the table below.
- Application of International Standard Industrial Classification of All Economic Activities (ISIC) Rev. 4.
- Ensuring data provided by countries can inform SDG indicator compilation, but also environment statistics, and environmental-economic accounting.
- Issues raised in discussions include definition of “abstraction” as opposed to “use”. Per the Questionnaire, “Total freshwater available for use” is equal to “Freshwater abstracted” + “Desalinated water” + “Reused water” + “Imports of water” – “Exports of water”.
- Abstraction is known to be used as a proxy for Use.
- Available metadata are here: https://unstats.un.org/sdgs/metadata/

Tables W2 and W3, line:	Category	Unit
W2, 4	Freshwater abstracted by water supply industry (ISIC 36)	millions m^3/y
W2, 5	Freshwater abstracted by households	
W2, 6	Freshwater abstracted by agriculture, forestry and fishing (ISIC 01-03)	
W2, 8	Freshwater abstracted by mining and quarrying (ISIC 05-09)	
W2, 9	Freshwater abstracted by manufacturing (ISIC 10-33)	
W2, 10	Freshwater abstracted by electricity, gas, steam and air conditioning supply (ISIC 35)	
W2, 11	*Of which for:* Electric power generation, transmission and distribution (ISIC 351)	
W2, 12	Freshwater abstracted by construction (ISIC 41-43)	
W2, 13	Freshwater abstracted by other economic activities	
W3,1	Gross freshwater supplied by water supply industry (ISIC 36)	

Table W2: Freshwater Abstraction and Use

Line	Category	Unit
1	Fresh surface water abstracted	Millions m^3 per year
2	Fresh groundwater abstracted	
3	**Freshwater abstracted (=1+2)**	
4	*Of which abstracted by:* Water supply industry (ISIC 36)	
5	Households	
6	Agriculture, forestry and fishing (ISIC 01-03)	
7	*of which for:* Irrigation in agriculture	
8	Mining and quarrying (ISIC 05-09)	
9	Manufacturing (ISIC 10-33)	
10	Electricity, gas, steam and air conditioning supply (ISIC 35)	
11	*of which for:* Electric power generation, transmission and distribution (ISIC 351)	
12	Construction (ISIC 41-43)	
13	Other economic activities	

Table W3: Water Supply Industry (ISIC 36)

Line	Category	Unit
1	Gross freshwater supplied by water supply industry (ISIC 36)	Millions m^3 per year
2	Losses during transport by (ISIC 36)	
3	Net freshwater supplied by water supply industry (ISIC 36) (=1-2) (=4+5+6+7+8)	
of which supplied to:		
4	Households	
5	Agriculture, forestry and fishing (ISIC 01-03)	
6	Mining and quarrying (ISIC 05-09)	
	Manufacturing (ISIC 10-33)	
7	Electricity, gas, steam and air conditioning supply (ISIC 35)	
	of which to: Electric power generation, transmission and distribution (ISIC 351)	
8	Construction (ISIC 41-43)	
	Other economic activities	
	Population supplied by water supply industry (ISIC 36)	
19	Total population supplied by water supply industry (ISIC 36)	%
10	Urban population supplied by water supply industry (ISIC 36)	
11	Rural population supplied by water supply industry (ISIC 36)	

Indicator 6.4.2: Level of water stress: freshwater withdrawal as a proportion of available freshwater resources (tier I)

- Custodian Agency: FAO; partner agencies: UNSD, UN Environment, IUCN, OECD and Eurostat
- The two variables below contribute to the calculation of the indicator.
- Metadata are available here: https://unstats.un.org/sdgs/metadata/

Tables W1, W2, line:	Category	Unit
W1,5	Renewable freshwater resources	millions m^3/y
W2,3	Freshwater abstracted	

Indicator = Line W2,3/Line W1,5

Table W2: Freshwater Abstraction and Use

Line	Category	Unit
1	Fresh surface water abstracted	Millions m^3 per year
2	Fresh groundwater abstracted	
3	**Freshwater abstracted (=1+2)**	
4	*Of which abstracted by:* Water supply industry (ISIC 36)	
5	Households	
6	Agriculture, forestry and fishing (ISIC 01-03)	
7	*of which for:* Irrigation in agriculture	
8	Mining and quarrying (ISIC 05-09)	
9	Manufacturing (ISIC 10-33)	
10	Electricity, gas, steam and air conditioning supply (ISIC 35)	
11	*of which for:* Electric power generation, transmission and distribution (ISIC 351)	
12	Construction (ISIC 41-43)	
13	Other economic activities	

Table W1: Renewable Freshwater Resources

Line	Category	Unit
1	Precipitation	Millions m^3 per year
2	Actual evapotranspiration	
3	Internal flow (=1-2)	
4	Inflow of surface and groundwaters from neighbouring countries	
5	**Renewable freshwater resources (=3+4)**	
6	Outflow of surface and groundwaters to neighbouring countries	
7	Of which: Secured by treaties	
8	Not secured by treaties	
9	Outflow of surface and groundwaters to the sea	

Thank you for your attention!

For more information please contact
the Environment Statistics Section
at the UN Statistics Division:
E-mail: envstats@un.org

website: https://unstats.un.org/unsd/envstats/