

Issues relevant to water quantity reporting and country fiches

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Aim of water quantity reporting and country fiches

- To clean-up and correct data reporting
 - For data handling
 - For improvement of the spatial and temporal scale of report
 - To ensure that the relevant determinants are reported
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- 6 countries have been selected as case study for this Eionet workshop (**Germany, Spain, Portugal, Sweden, Denmark and Cyprus**), with the following criteria: the selection of small and large countries, geographical and climatological variability, federal and non-federal ones and specific water management issues

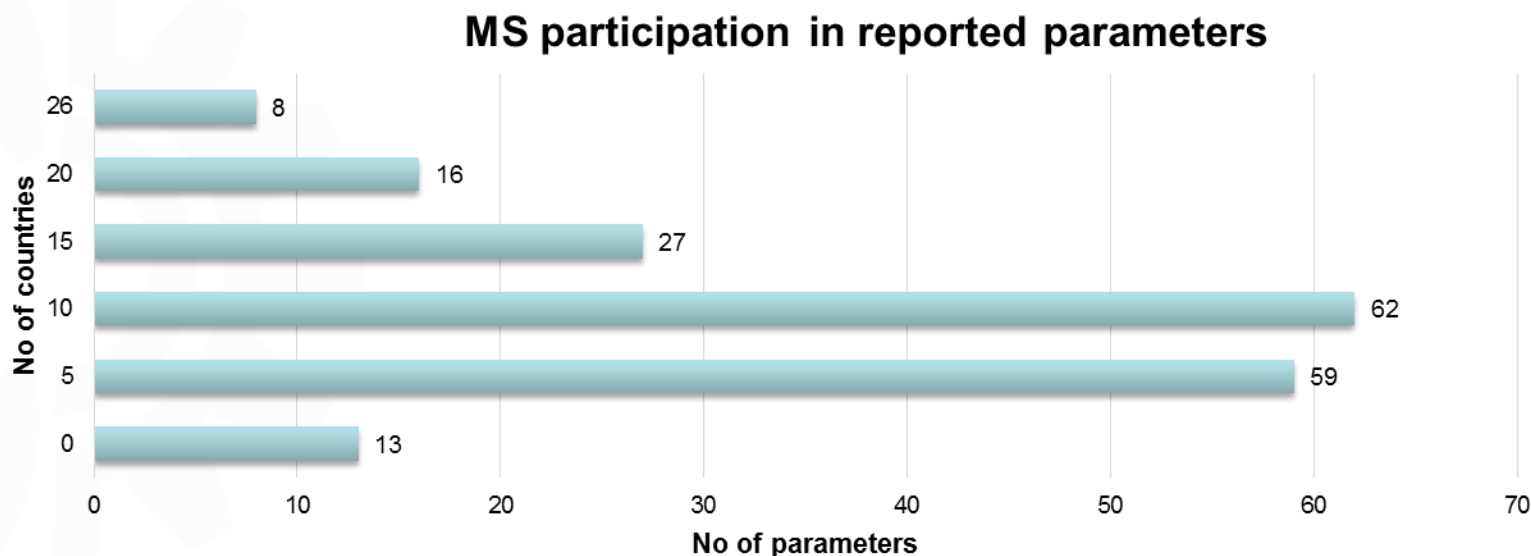


➤ Overview of main issues in Water Quantity report

1. *Limited amount of data submitted by some MS, regarding the number of parameters reported.*
2. *Coarse spatial and temporal scale of the reported data and also the time series of data usually cover a small number of years, so LTAA values cannot be derived.*
3. *The reported format is occasionally different than the proposed one.*
4. *Point measurements' ordinates are in a number of cases displaced and are sited outside the country's border or declared RBD.*
5. *There are logical inconsistencies (in water accounts etc.) of the reported data, or between data reported under different data flows. (e.g. SoE-OECD/EUROSTAT)*

1. Limited number of parameters reported

- Cyprus reported in total 27 out of 185 parameters
- Sweden reported respectively 20 parameters.
- Denmark reported 48 parameters.
- Spain reported only point data and 3 different parameters.
- Portugal reported 8 parameters.
- Germany reported point data of stream flows and groundwater level.



2a. Coarse spatial scale

- Cyprus declared 1 RBD and reported in national level
- Sweden's report was divided in 9 RBDs.
- Denmark reported most areal parameters in national level and some areal parameters only from one RBD. The point parameters were divided in 4 RBDs
- Spain reported only point data from 9 RBDs.
- Portugal reported in 10 RBDs
- Germany reported on national level (only point data)

- In general only 5 countries reported areal data in Sub Unit (SU) level and 4 countries reported point data in SU level.
- Moreover 6 countries provided areal data on national level only.
- There are “missing pieces” (in RBD level) literally in every parameter regarding the spatial coverage of Europe

2b. *Coarse temporal scale*

- Cyprus preferred time scale of the reported time series was annual (111 TS) and monthly (135 TS). Three time series have been reported in seasonal time scale and 18 stream flow time series in daily time scale.
- Sweden's reported time scale is annual (183 TS) and monthly (124 TS). No seasonal or daily time scale reported
- Denmark preferred time scale was annual (807 TS)
- Spain data were reported in monthly and annual scales and refer to the years 2008 to 2012 .
- Portugal's preferred time scale of the reported time series was annual (55 TS)



2b. *Coarse temporal scale*

- The temporal scale especially of the areal reported data is annual, while point data tend to have finer temporal scales (monthly, seasonal, daily).

- Reporting of areal data in a smaller time scale (monthly instead of annual) would be very useful for further analysis and EEA assessments on European or country level (e.g. production of Water Accounts).

2c. *Limited number of years reported*

- Portugal submitted areal data for the reference year **2006**
- Spain's data refer to the years **2008 to 2012** .
- Sweden's point data cover the period **2009-2012**, while areal data cover the period **1998-2012**
- In 2011 Germany has participated in an effort of the EEA to complement and enhance the water quantity data flow to support the development of Water Asset Accounts in Europe by providing long daily stream flow data of major German rivers.
- Cyprus reported parameters the time series cover the time period **1998-2012**, which is an adequate time period
- Denmark's time series cover the time period **2000-2012** for many of the reported data

LTAAs must use a time series of at least 20 years, a condition very difficult to fulfill in the majority of parameters

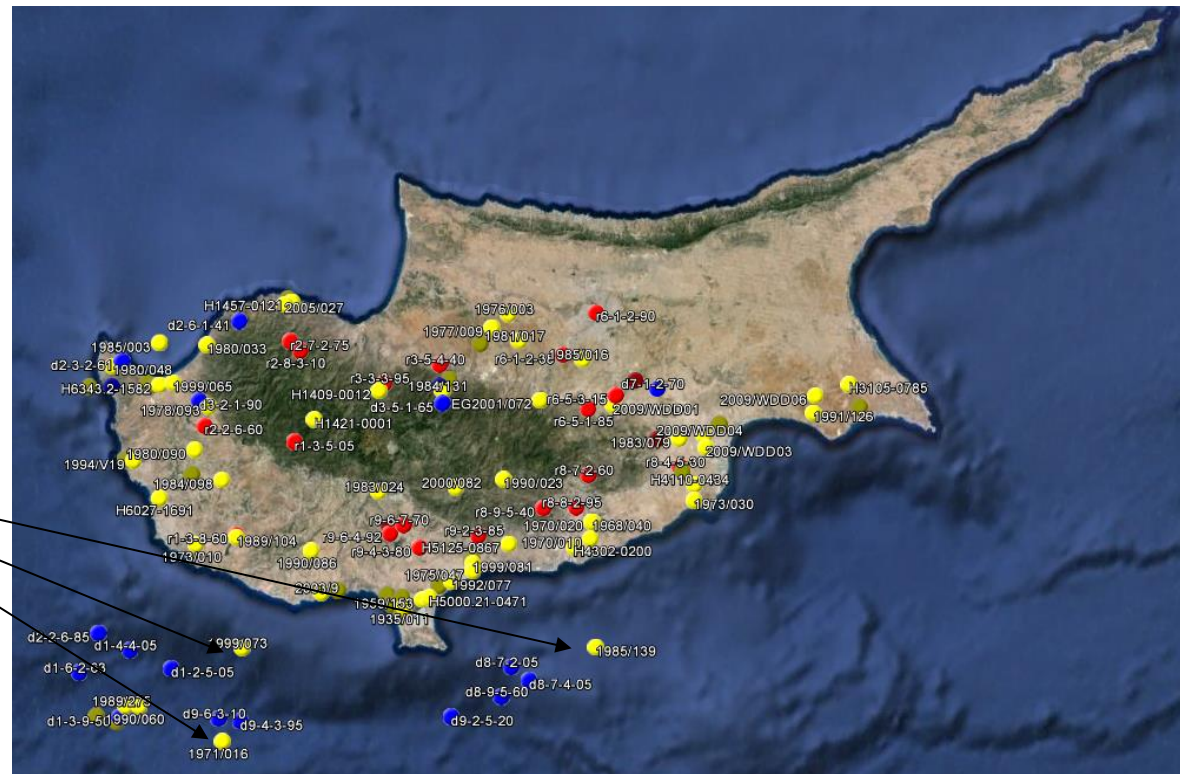
3. The reported format varies from the proposed one

- In Germany's report the submitted files were not in the requested format (XML) and coordinate system (ETRS89 or WGS84).
- Spain's reports were reported on different format (MS-Access) than the requested one (XML) Also custom routines had to be developed by the ETC/ICM Data Manager to extract the data from the provided file. Missing mandatory fields in the provided dataset e.g. region code (RBD or SU) prevented the ETC/ICM from making use of all submitted information.

4. Point measurements' ordinates are in a number of cases displaced and are sited outside the country's border or declared RBD.

- Reservoir
- Station measuring groundwater level (well)
- Rain gauge station
- Stream flow station

Wrong coordinates in Cyprus



4. Point measurements' ordinates are in a number of cases displaced and are sited outside the country's border or declared RBD.

Wrong coordinates in Sweden

Station code	Longitude	Latitude	Declared RBD
105	12.8901	63.514	SE5
84_54	57.287671	15.641546	SE4
84_55	57.282023	15.642725	SE4

5. There are logical inconsistencies (in water accounts etc.) of the reported data, or between data reported under different data flows. (e.g. SoE-OECD/EUROSTAT)

Sweden

RBD	Rule	Equation	Ref. year	Equation analysis
SE4	wu_public_water_supply-total + wu_self_supply-total = wu_total_freshwater_used-total	671.200000 = 713.100000	2007	227.500000 + 443.700000 = 713.100000
SE5	wu_public_water_supply-total + wu_self_supply-total = wu_total_freshwater_used-total	524.300000 = 481.900000	2007	215.500000 + 308.800000 = 481.900000

Cyprus

Ref. year	Parameter	Value (JQ) (x10 ⁶ m ³)	Value (SoE) (x10 ⁶ m ³)
2000	Total actual outflow	90	65
2003	Total gross abstraction from surface water	84.25	71.5
2003	Recharge into the Aquifer	188.39	70
2007	Total gross abstraction from surface water	71.2	63.6
2007	Precipitation	2766	3597
2008	Total gross abstraction from surface water	30.54	25
2009	Total gross abstraction from surface water	39.3	32.6
2009	Imports of water	2	2.99
2011	Total surface and groundwater for public water supply	52.9	32.6

5. There are logical inconsistencies (in water accounts etc.) of the reported data, or between data reported under different data flows. (e.g. SoE-OECD/EUROSTAT)

Denmark

Ref. Year	Rule code	Rule definition	Time step	Equation	Equation analysis
2003	WA002-EQ	wa_for_public_wss_gw + wa_abstraction_for_self_suply_total_gw-total = wa_total_abstraction_gw	annual	800.410000 = 632.530000	417.510000 + 382.900000 = 632.530000
2003	WA004-EQ	wa_for_public_wss_sw + wa_for_public_wss_gw = wa_for_public_wss	annual	422.330000 = 651.160000	4.820000 + 417.510000 = 651.160000

Ref. year	Parameter	Value (JQ) (x10 ⁶ m ³)	Value (SoE) (x10 ⁶ m ³)
2004	Total gross abstraction from surface water	17.44	20.85
2004	Fresh surface water abstraction for agriculture, forestry, fishing	3.48	4.28
2004	Fresh surface water abstraction for the manufacturing industry	5.63	9.58
2004	Fresh groundwater abstraction for irrigation	146.73	188.5

Possible reasons for inconsistencies

- Same meaning of parameter definitions in both streamflows but differences in the wording may lead to confusion
- Different national agencies report the same parameters, possibly using different methodologies, measurements etc.
- Parameter definition not understood (e.g. systematic confusion between ETa and PET, inclusion/exclusion of cooling water and hydropower)
- Confusion in unit selection



Improvement goals of MS reporting under SoE water quantity dataflow.

- Water quantity data are very important for the estimation of water scarcity and drought on European level and especially for South European countries. Also a variety of EEA assessments uses water quantity data. So an increase of MS participation must be achieved in the number of parameters reported, the temporal and the spatial scale, as well as the reported years.



Improvement goals of MS reporting under SoE water quantity dataflow.

- Need for data format homogeneity.
- Need for streamlining of definitions among different organizations.
- Need for development of innovative products (like WEI+), addressed to policy makers and the public, relative to water consumption, water pressure to the ecosystems, and Water Accounts, in order to improve dataflow acceptance.



Issues and questions

Issues to be discussed

- *Reasons for inconsistencies in datasets and how to increase data quality*

Questions to NRCs

- *Why are there differences between the SoE and JQ water quantity data?*

