European Environment Agency

2016 Freshwater Eionet Workshop
Background document for Session 1, 2, 3 and 4

EEA State of Water Assessments

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Contents

1 Session 1: EEA 2015-2016 state of water assessments

The first session of the 2016 Freshwater Eionet workshop is focused on presentation of different EEA water products (assessments and indicators) published during 2015 and 2016, and planned products later in 2016 or in 2017. The 2017 EEA state of Water assessment is described under session 3.

1.1 2016 Bathing Water Quality report, the combined report and the emissions report

1.1.1 Bathing water quality report

Each year, before the start of the bathing water season, the European Union (EU) publishes an annual report on the quality of coastal and inland bathing areas, as reported by EU Member States and other European countries (Albania and Switzerland). Since 2009, the European Environment Agency (EEA) and its European Topic Centre on Inland, Coastal and Marine Waters have been preparing the report in cooperation with the European Commission's Directorate-General for the Environment.

This report gives an overview of the 2015 bathing water quality at more than 21 000 bathing water sites. It also presents a longer-term historical perspective of the evolution in bathing water quality since 1991. Moreover, the report provides an overview of changes in monitoring programmes and the efficiency of management measures since the directives came into force.

On 25 May 2016 this year's bathing water report was published. In adition to the European summary report that are published in English, French and German the bathing water reporting consist of the following products:

- 30 National reports and Excels sheets with the bathing water quality results from each country.
- An interactive map viewer. By using the WISE map viewer the can check the bathing water quality on an interactive map. It also documents how bathing waters have changed throughout Europe in recent years and provides a full summary of Europe's bathing water quality in 2015.

Further information on the 2016 bathing water quality report is available at http://www.eea.europa.eu/themes/water/status-and-monitoring/state-of-bathing-water/state

1.1.2 Combined report - Human health and well-being in European water policies

During 2015 and 2016 EEA and its ETC/ICM has worked on a report that present main aspects from the Urban Waste Water Treatment Directive (UWWT), Bathing Water Directive (BWD) and Drinking Water Directive (DWD). It is the plan to publish the report with the title "Human health and well-being in European water policies" during the summer 2016.

The three directives, UWWTD, DWD and BWD are focusing on the management of the respective part of the human water cycle and to document the quality of the water abstracted, used, discharged and used for recreational purposes. Member States are obliged to report key parameter of water quality and management measures under these three directives.

The combined report summarises therefore the status and trend analysis of the information collected and assessed in the past and looks into some common elements and aspects of integrated management between these directives. Following the EEA mandate this focuses more on the wider integration of human wellbeing in the environment those on concrete aspects of health and human consumption of water.

At the Eionet Freshwater NRC meeting an overview of the content of the combined report will be presented.

1.1.3 Water emissions report

In 2015 the ETC/ICM started drafting a water emission report. The report will contain information on annual emissions to water at the European level for the major groups of pollutants (nutrients, organic matter, and priority substances and the key emission sources (point sources such as UWWTPs, industry, and diffuse sources like agriculture, atmospheric deposition, traffic).

The report will give both an overview at the European level and at the same time provide relevant spatial and temporal information on where emission sources are primarily located and how emission loads have developed in the last 10-20 years.

The analysis will include data from reporting of countries on relevant EU directives, e.g. on the UWWTD, the WFD and in particular the relevant information contained in the European Pollutant Release and Transfer Register (E-PRTR) and other data flows like the SoE emissions.

The report will be finalised during 2016 and published in the second half 2016. At the Eionet Freshwater NRC meeting an overview of the content of the emission report will be presented.

1.2 Use of freshwater resources (WEI+)

At the World Water Day 22 March 2016 EEA published the updated EEA core set indicator on use of freshwater resources and the water exploitation index plus (WEI+). Below find some key highligts from the indicator and more information will be presented at the Eionet NRC workshop.

The EEA indicator assessment 'Use of freshwater resources' shows that while water is generally abundant in Europe, water scarcity and droughts continue to affect some regions, especially those that are densely populated and have high demands for water from agriculture and tourism during the summer.

The water exploitation index plus (WEI+) of European River Basin Districts is the percentage of total freshwater used compared to the renewable freshwater resources available. The EEA indicator shows that around 20 river basin districts, mainly in the Mediterranean, face structural water stress issues (WEI > 20 %). These include Cyprus, Malta, Crete, the Balearic Islands and Sicily. The situation is even worse in summer. The average WEI for the summers 2002-2012 were 81 % and 55 % for Cyprus and Segura, Spain respectively which suggests severe water stress and clearly unsustainable resource use.

Water stress, increasingly, occurs in other parts of Europe. The main drivers are growing urban populations and higher living standards coupled with reduced water availability due to pollution and drought. Many large cities have developed wide networks for transporting water, often over distances of more than 100-200 km to be able to respond to the demand for water.

1.3 Flood risks and environmental vulnerability — Exploring the synergies between floodplain restoration, water policies and thematic policies

26 January 2016 EEA presented the report “Flood risks and environmental vulnerability — Exploring the synergies between floodplain restoration, water policies and thematic policies”. This report focuses on the role of floodplains in flood protection, water management, nature protection or agriculture and the impact of hydromorphological alterations on the ecosystem services that floodplains provide. The aim is to support the implementation of the EU Floods Directive (EU, 2007), in particular with regard to environmental impacts and how these can be linked to climate change adaptation and disaster risk reduction. It looks at synergies between water management, nature conservation and economic developments both in the field and on policy level. The report is available here

http://www.eea.europa.eu/publications/flood-risks-and-environmental-vulnerability#tab-news-and-articles

At the Eionet Freshwater NRC meeting key results from the floods report will be presented.

1.4 2017 report on climate change adaptation and disaster risk reduction

Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR) offer a range of complementary approaches for managing risks associated with extreme weather and climate related events. Although CCA and DRR address similar challenges, they are governed by different policy, institutional and legal frameworks. There is a growing recognition of benefits obtained from a closer policy coordination and collaboration between organisations responsible for CCA and DRR. This has been emphasised in the United Nations Sendai Framework for Disaster Risk Reduction 2015-2020 (SFDRR) and the Paris Agreement under United Nations Framework Convention on Climate Change (UNFCCC), and supported by National Reference Centres (NRCs) for Climate Change Impacts, Vulnerability and Adaptation during the EIONET workshop held in June 2015.

In the EEA Annual Work Programme for 2016 a new report is included, addressing the knowledge base, synergies, and countries' experiences of connecting CCA and DRR responses. This report will be published in 2017 under the draft title Climate change adaptation and disaster risk reduction in Europe - Synergies for the knowledge base and policies. It aims to foster a better awareness and exchange of information and experiences among policymakers, researchers and practitioners regarding potential synergies between DRR and CCA in terms of knowledge base, policy developments and implementation. The report has the ambition to support national policy development and implementation in the EEA member countries, and provide input for the European Commission's report on the EU climate change adaptation strategy, due in 2017.

At the Eionet Freshwater NRC meeting an overview of the content of the climate change adaptation and disaster risk reduction report will be presented.

2 Session 2: 2015 and 2016 SoE data request

2.1 Introduction

In 2015, the WISE SoE reporting underwent some major changes. The focus was on simplification of WISE SoE data models and harmonisation with WFD reporting. The data models for Emissions (WISE-1), Water Quantity (WISE-3) and Water Quality (WISE-4) were revised.

The revised list of *determinands* established in the WISE SoE content review of 2015, presented and discussed in the EIONET workshop 2015, provided the basis for the 2015 Data Call.
For WISE-4, the various existing code lists were consolidated and harmonised with the ones used in the WFD 2016 reporting. A similar alignment was made for pollution sources under WISE-1 and WFD.

The reporting of spatial data (WISE-5) was separated from the annual reporting of time series data. The harmonisation of WISE-5 with the WFD 2016 Spatial data flow allows the same format and quality control to be reused. Double reporting under EIONET and WFD data flows is eliminated.

From an operational perspective, the EIONET Central Data Repository was reorganised to provide a clear tree-like structure of collections for the WISE SoE reporting. Role-based permission assignment for Data Reporters was implemented. The structure and content of the CDR help section was reorganised and updated.

The thematic support and helpdesk function was moved to the WISE SoE Helpdesk system.
The WISE SoE workflow was updated to allow ETC-ICM to provide a faster final feedback on each delivery. Similarly, the Reportnet quality control procedures were updated and now incorporate tests with different severity levels (warnings, errors, blockers) to facilitate the identification and correction of potential mistakes in the deliveries, prior to the release of the envelope.

A training and testing environment (CDRSandbox) similar to the real CDR was introduced. It can be used only for the WFD and WISE SoE reporting flows and will be operational only until the end of the WFD and WISE SoE formal reporting period. CDRSandbox is currently a pilot system used exclusively for the WFD and WISE SoE data flows. Its continuity will be evaluated after this pilot phase.

The aim of session 2 of the 2016 freshwater EIONET workshop is to reflect the experiences after the first WISE SoE reporting following the introduction of changes and identification of what needs improvement for the 2016 data call. This document provides a short summary of the data reporting under the 2015 data request.

2.2 Overview of the 2015 Data Call

The 2015 data call opened on the 3rd December 2015 and closed on the 30th April 2016.
The call was prolonged by 2 months, mainly due to technical difficulties during the reporting process. Problems with the reporting were communicated by the countries via the helpdesk system, and ETC-ICM and EEA could solve most of the reported problems. A short overview about these main issues is given in section **Error! Reference source not found.**. The EEA is fully aware of the technical problems that have been experienced by countries when trying to upload their data. There will be no country benchmarking of the SoE 2015 data request due to the technical difficulties on the EEA side.

As of 2016-06-01, a total of 31 countries had released 146 envelopes for WISE-1, WISE-3 and WISE-4. Some countries (e.g. HU, IT, PT) will be reporting later this year, due to the ongoing WFD reporting.

The ETC-ICM is checking the content and providing final feedback on the data quality to the delivery. A released envelope can be technically accepted by the ETC-ICM (if there are no blockers and no serious errors) or a correction request and redelivery can be requested if issues are found. The countries are contacted via the helpdesk system, if clarifications are needed and the feedback is posted within the envelope itself.

For WISE-1 and WISE-3, all released envelopes were already checked by ETC-ICM. For WISE 4 the process of final feedback is still in progress, 15 envelopes out of 73 still need to be checked. A detailed overview of the status of existing envelopes will be presented at the EIONET workshop (an overview of the status as of 2015-05-20 was presented in the CIS WG DIS meeting).

The 28 EU countries and Norway are expected to report their spatial data under WFD. The cooperating countries (West Balkan countries and 5 non-EU EEA member countries) report their spatial data under WISE-5. The format of the spatial data is identical for WFD and WISE-5 and is described in the WISE GIS Guidance document. Instructions on how to upload and to prepare the data are given on the CDR help page, as well as the applicable quality checks.

Information already reported under the WFD 2016 Reporting does not need to be resubmitted under WISE-5: only EIONET spatial objects which are not WFD spatial objects are requested under WISE-5. Currently, there are no released envelopes for WISE-5 at the moment (2016-06-01). The draft deliveries exist for Switzerland, Norway, Turkey and Iceland, as well as for Latvia.

The WISE SOE helpdesk is in contact with these countries to support the delivery of the spatial data so that their national data is integrated into the European spatial data sets. In session 3 of the 2016 EIONET workshop there will opportunity to discuss how the non-EU countries including the West Balkan countries could be supported to deliver data under WISE-5.

There were serious issues affecting the 2015 Data Call, which that made the reporting process very difficult for countries. The issues were reported by countries to the WISE SOE helpdesk. The EEA and ETC-ICM are fully aware of these issues and provided a solution by mid of April.

The main issues and solutions provided were:

1. Reportnet EXCEL to XML conversion failing for large files: an alternative Conversion tool from Excel to XML was provided.
2. The quality control of XML files failed if a large number of errors or warnings were flagged (namely due to the lack of the MonitoringSite vocabulary): the quality control procedures were refactored, basically by allowing for a faster check of the WISE register at Reportnet level and by truncating the results if more than 300 identical errors were detected.
3. Quality control routines skipped due to server issues, allowing a data delivery to be released while there are still critical errors in the data: the EEA infrastructure was substantially upgraded to support the work load of the ongoing WISE SoE and, mainly, the WFD reporting, additionally the envelope level quality control was adapted to deal with 'UNKNOW' results in the eventuality of system failure.
4. The processing time of quality control routines exceed the default Reportnet time-out setting: the relevant parameters were increased, and further improvement of the Reportnet infrastructure is under design/implementation.

2.3 Next steps and the 2016 Data Call

The Waterbases containing the recently reported data will be published in September 2016. For the freshwater part, Waterbase will consist mainly of three databases for WISE-1, WISE-3 and WISE-4, using the data structure adopted for the 2015 reporting.

In 2015, the European spatial datasets (river basin districts, water bodies, monitoring sites) will still reflect mostly the status prior to the WFD 2016 reporting, i.e. the 1st RBMP spatial units. Updates to the European data sets will be provided, as the 2016 WFD reporting progresses.

The preliminary calendar for the 2016 Data Call is October to December 2016, using the existing data structure. Corrections and improvement to the quality control procedures will done were required. Countries are requested to provide suggestions/requests on issues where improvements would be beneficial - WISE SoE helpdesk should be used for this purpose.

3 Session 3: EEA 2017 state of water assessment

It is the European Environment Agency's (EEA) task to provide objective, reliable and comparable information on the environment in order to allow the European Commission, member countries and the general public to judge the effectiveness of environmental policy and the needs for policy development. This comprises 'state of the environment' assessments using indicators to assess current status, pressures and impacts as well as trends in the mid and long-term.

The next EEA assessment on the state of Europe's water will be published in 2017 and will again cover a wide range of water related topics. The analyses will be based on data reported by EU Member States to WISE WFD for the 2nd River Basin Management Plans (RBMPs) as well as on data reported from EEA Member Countries under SoE.

In the spring 2016 Member States have started reporting their 2nd River Basin Management Plans (RBMPs). The European Commission will then assess the compliance of the plans with the legal requirements of the WFD and report the results of the assessment to the European Parliament and the Council by the end of 2018. The EEA 2017 report on the status and the pressures on Europe's waters will contribute to Commission report on the WFD implementation.

As some EEA member and collaborating countries are not implementing the WFD and reporting RBMPs there are at the workshop a special session focused on the the non-WFD countries with the aim to ensure that results on the status and pressures affecting those countries are also available and incorporated in the 2017 State of Water (SoW) assessment.

3.1 Questions we want to answer

- What is the status of EU/European waters?
- What pressures are they subject to?
- What progress has been achieved in the 1st RBMP cycle/last 5-10years?
- What commitments (= objectives & exemptions) have been made for the 2nd and 3rd cycle?

3.2 The focus and coverage of the 2017 State of water assessment

The starting point of the 2017 SoW will be an update of the 2012 report "European waters - assessment of status and pressures"[1] supplemented by an analysis of the progress over the last 5-10 years.

The focus was on the following aspects with the first two items being the priority:

- providing an overview of status, pressures and impacts (update of baseline – state 2012-2015),
- illustrating change in status or pressures from 1st to 2nd RBMPs,
- illustrating how relationships between pressure and status (what is causing less than good status) can be illustrated and how pressures can be related to driving forces,

[1] http://www.eea.europa.eu/themes/water/water-assessments-2012

- illustrating effects of measures where possible (focussing on measures implemented during the first RBMP cycle).

The assessment will cover all water categories (incl. groundwater, transitional and coastal waters) and ecological, chemical and quantitative status. The data will be analysed at water body/river basin district/Member State level with the aim of providing European overviews, Member State and River Basin District comparisons as well as comparisons between the 1st and 2nd RBMPs. These analysis will as far as possibly be supplemented by status and pressure information by the countries not covered by WFD.

The following topics are covered in the 2017 SoW assesment:

- Water body delineation;
- Ecological status – Surface waters;
- Chemical status and River Basin Specific Pollutants in surface waters;
- Groundwater chemical status;
- Groundwater quantitative status ;
- Pollution pressures & measures; and
- Hydromorphology status and pressures.

The results will be supplemented with case studies both to illustrate relevant results that cannot be aggregated on European scale and to ensure that similar results from non-EU Member countries are integrated.

Most of the general analyses and diagrams of the 2012 assessment can be repeated in the 2017 assessment, i.e. updated with the most recent data. However, there is a range of possible additional analyses. A major task will thus be to select, focus and prioritise.

Generally, the number of potential analyses and diagrams is higher in the 2017 assessment compared to the 2012 assesment. The final product will consist of

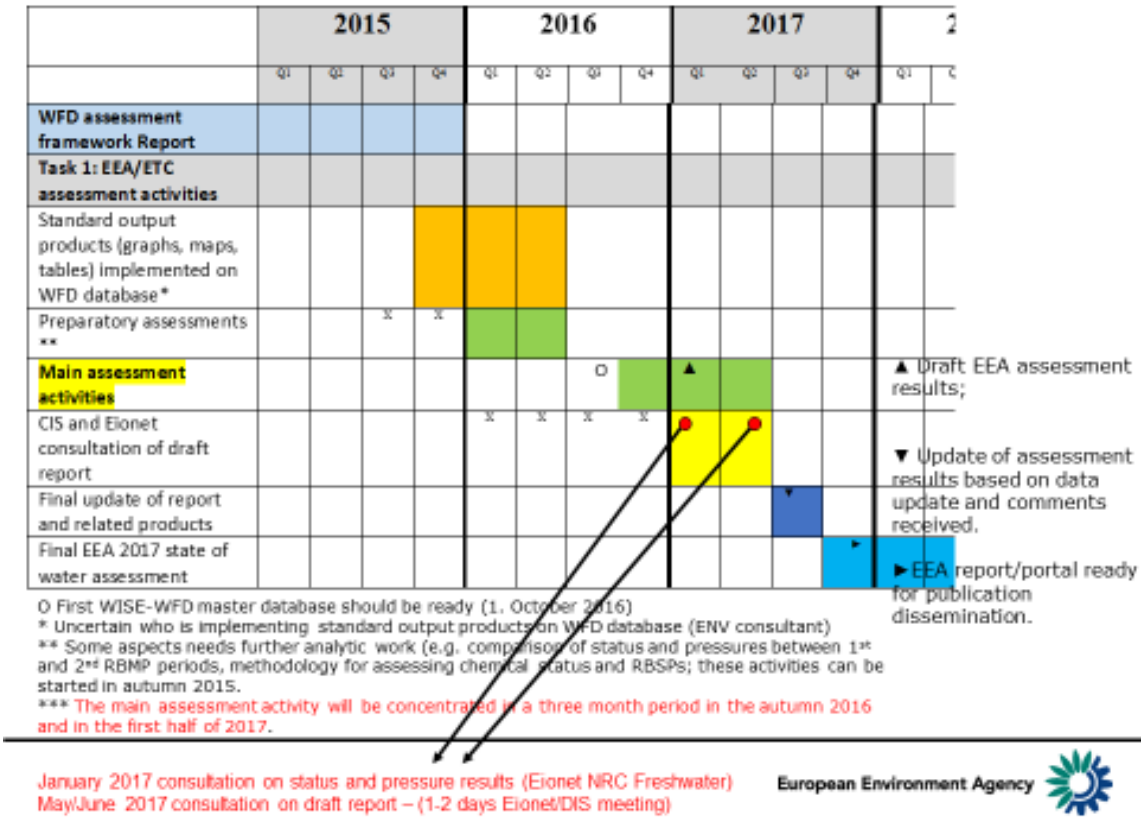
- a printed report including an electronic version of the “State of Water Assessment 2017” (50+ pages),
- a SoW portal containing all diagrams, maps, tables available including “mini” assessments and interpretations of the results,
- the results of indicators on status (ecological, chemical, and quantitative), pollution pressures and on hydromorphological alterations.

3.3 Activities in relation to the 2017 State of Water assessment

During 2015 ETC/ICM and EEA produced WFD assessment framework report. The WFD Assessment Framework provides a common understanding of the intended assessments of the 2016 River Basin Management Plans (RBMPs). It included aspects related to learning of experience from the 2011/2012 assessment; understanding the WFD 2016 reporting guidance compared with the 2010 reporting; review of some draft 2nd RBMPs (learn and use good examples) and prioritisation: 1) products we have to do and 2) products that are relevant to do.

During 2016 and 2017 the main activity on the 2017 SoW assessment is run (Figure 1). As Member States reporting of the results from the 2nd RBMPs are delayed. The main assessment activity will start when there are data from 12-15 Member States and a robust WFD database (probably 1 October 2016). The assessment activity may be concentrated in the last quarter 2016 and the first half of 2017.

Figure 1: Overview of the planning of EEA 2017 state of water assessment.



3.4 Consultation with EEA member countries – Freshwater NRCs

During the process of preparing the 2017 State of Water assessment EEA plans to consult with the experts in Eionet and the WFD Common Implementation Strategy on draft results, on how results are presented and chapter of the draft report.

We need your advice, expertise and comments on:

- How the European results on status and pressures are presented.
- Illustration of progress – comparison 1st and 2nd RBMP period
- Cause-effect relationship between status, pressures and measures implemented during the 1st RBMP period.
- Information on good case studies

The first consultations are planned to be in end January 2017 when most of the results on status and pressures are ready. The second consultation will be in May/June and will be a consultation of the draft report, this consultation will probably be the main focus of the 2017 Freshwater NRC meeting.

4 Session 4: Special session for non-EU countries regarding ecological/-chemical status assessments and spatial data

The last session of the Eionet Freshwater Workshop Wednesday afternoon is focused on the countries not reporting WFD data. The aim is to ensure that results from these countries are presented in EEAs 2017 State of Water assessment and other water products.

4.1 Coverage of non-WFD countries in the 2012 state of water assessment

In EEAs 2012 State of Water assessment ´much of the results on status and pressures were based on data being reported by EU Member States and the 1st RBMPs. EEA tried as far as possible to include additional and similar information from the countries not monitoring and reporting WFD results. Below you find some of the information included into the 2012 State of Water assessment.

Over the last few years, European countries that are not EU Member States have developed similar river basin activities to those introduced by the Water Framework Directive (Box 1).

Box 1: River basin management activities in EEA member and co-operating countries outside the EU

Norway and Iceland have activities for implementing the EU Water Framework Directive (Vannportalen, 2012; Guðmundsdóttir, 2010), and in Switzerland and Turkey, there are water policies comparable to the Water Framework Directive regarding water protection and management (EEA, 2010d; Cicek, 2012).

Countries are also involved in transboundary activities. The Sava is the third-longest tributary of the Danube, and runs through Slovenia, Croatia, Bosnia and Herzegovina, and Serbia, with part of its catchment in Montenegro and Albania. The International Sava River Commission is working together with these countries on the development of the Sava River Basin Management Plan, in line with the Water Framework Directive. Similarly, Switzerland cooperates with neighbouring states to achieve water protection goals, and thus indirectly adopts certain principles of the Water Framework Directive.

In these countries outside the EU, a large proportion of waters are affected by similar pressures as those identified by the EU River Basin Management Plans. Many of the West Balkan river basins are heavily affected by hydromorphological alterations and pollution from municipal, industrial, and agrochemical sources. This pollution is a major threat to freshwater ecosystems (Skoulikidis, 2009). In Switzerland there are significant deficits in the ecological status of surface waters, particularly in the intensively used lowland areas (Swiss Plateau) with recent assessments showing that 38 % of medium and large river sites have insufficient macroinvertebrate quality and that roughly half of the total river length **below** 1200 m asl. is in a modified, non-natural, artificial or covered state.

4.2 Coverage of the non-WFD countries in the 2017 State of Water assessment

EEA hope that together with the non-WFD countries that the coverage of the state of water in these countries can be improved in the next SoW assessment.

In this session EEA is interested in hearing the non-WFD countries experience with ecological and chemical assessment of water bodies and pressures affecting waters. We therefore hope that the participants in this session can prepare summaries of their activities in relation to these aspects. This will be the basis for a discussion on how the results from these countries are presented in EEAs 2017 State of Water assessment and other water products

Questions to non-WFD countries

- Do you have activities on biological, ecological assessment, physico-chemical of state of water?
- If yes, which water categories are covered, and can the results of these assessment be compared with the WFD results on ecological status?
- Do you have assessment of the chemical status, or water quality related to hazardous substances?
- If yes, which water categories (e.g. groundwater, rivers etc.) are covered and which substance groups are monitored, and can the results of these assessment be compared with the WFD results on chemical status?
- Do you have an inventory of the pollutant pressures (e.g. urban waste water discharges or diffuse pollution from agriculture) and hydromorphological pressures (e.g. number of barriers/obstacles in rivers)?
- Your opinion and suggestions on how to include results from the non-WFD countries are very welcomed.

4.3 Availability of relevant spatial data (River Basin Districts (RBD), water bodies) in non-WFD countries

Several of EEA water products are based on aggregation of observations to RBD level. The EEA map viewers for example use average nitrate concentation at RBD level (see example http://www.eea.europa.eu/data-and-maps/explore-interactive-maps/nitrate-in-rivers). See also the WISE - Spatial Data (WISE-5) available at http://cdr.eionet.europa.eu/help/WISE_SoE/wise5.

Via the WFD reporting EEA has a reference layer on RBD covering the 28 EEA Member States and Norway. In the future EEA hope to use WFD water bodies to link information from different sources/databases. For the non-WFD countries EEA is partly missing similar spatial reference element.

The aim of the spatial part of session 4 is to explore the availability spatial data of the non-WFD countries including river basin district, river networks and spatial data lakes and reservoirs.

EEA hope that the participants from the non-WFD countries can prepare an overview of the current use of spatial data in relation to water quality monitoring and inventories on emissions and water quantity.