**Methodology**

**Core parameters for water quality index**

<table>
<thead>
<tr>
<th>Parameter group</th>
<th>Parameter*</th>
<th>River</th>
<th>Lake</th>
<th>Ground-water</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Oxygen</strong></td>
<td>Dissolved oxygen</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Biological oxygen demand, Chemical oxygen demand</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Salinity</strong></td>
<td>Electrical conductivity</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Nitrogen</strong></td>
<td>Nitrogen, Total dissolved solids</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total suspended nitrogen</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total nitrogen, Nitrite, Ammoniacal nitrogen</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Phosphorus</strong></td>
<td>Orthophosphate</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total phosphorus</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acidification</strong></td>
<td>pH</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Constitution</strong></td>
<td>Parameter</td>
<td>x</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Countries should include the fractions of N and P which are most relevant in the national context

**Level 1**

- Reported by all countries where possible
- Core parameters only combined into water quality index

**Level 2**

- Optional, based on country’s water quality monitoring capacity
- Additional parameters
- Additional approaches

**Baseline data drive 2017**

52 countries out of 193 Member States attempted the methodology and reported an indicator value

Submissions were received from:
- all world regions
- developed and least developed countries

Submissions highlighted that:
- Water quality monitoring capacity varies greatly
- Many countries did not have ambient water quality targets
- Some countries do not monitor the quality of ambient freshwater
- Some countries reported the indicator based on data from thousands of monitoring stations
- Some countries did not understand the requirements of the methodology

**Next steps**

- Technical feedback process
  - Questionnaires, written submissions, on-line consultations
  - Expert group workshop—Oct 2018
- Synthesis of feedback and draft revised methodology—Nov 2018
- Finalisation of revised methodology 2019
- Increased capacity development 2019-2020
- Second data drive 2021

**Development of Level 2**

- Exploring incorporation of ecosystem and biological quality indices
- Exploring use and integration of EO and Citizen Science water quality data

**Results**

47 countries assessed and classified one or more water bodies
- 38 included lakes
- 43 included rivers
- 32 included groundwater bodies

Some countries based their indicator calculation on a low density of monitoring stations and monitoring values over a large proportion of the country (large circles, located bottom left). As a result, it is unlikely that the submitted value will reflect the actual water quality, when compared with countries using many stations and monitoring values (top right).

**Challenges**

- Monitoring capacity challenges
  - depending on sufficient monitoring activity
  - reliable and accessible data management
  - timely and consistent analytical capacity
  - capacity to assess data

- Methodology challenges
  - setting of target values
  - defining sub-national reporting units
  - selecting water quality parameters
  - aligning the assessment period

- Other challenges
  - time needed to report
  - reporting framework alignment (boundaries)
  - institutional set-up for national reporting
  - monitoring of groundwater