

References

6.51 Groundwater level

Project Name: UNaLab (Grant Agreement no. 730052)

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Quantitative status of groundwater	Water management Natural and Climate Hazards
Description and justification	Water covers ca. 71 % of the Earth's surface but only 2.5 % of it is fresh, stored as groundwater and in glaciers. Water is vital for living organisms, and it enables a multitude of human activities such as agriculture, manufacturing and transportation of goods. Available water resources are being extensively used for a variety of purposes, and ensuring that the water quality is monitored and the degraded water bodies are enhanced is essential for protecting the water resources. EU Water Framework Directive (2000/60/EC) sets forth the framework for integrated management of surface waters and groundwater resources in the EU Member States, which are presented as River Basin Management Plans.
Definition	The degree to which a body of groundwater is affected by direct and indirect abstractions (good, moderate, bad, poor, bad)
Strengths and weaknesses	+ A comparable EU-wide applied assessment - Requires arrangements on Member State-level
Measurement procedure and tool	The following procedure is based off the requirements set by the Water Framework Directive (2000/60/EC): <ol style="list-style-type: none"> 1. Define groundwater bodies within a river basin area 2. Establish type-specific reference conditions per Annex V 3. Identify significant anthropogenic pressures 4. Identify and estimate significant water abstractions for urban, agricultural, industrial and other uses, including seasonal variations and total annual demand 5. Identify and estimate loss of water in the distribution systems

	<ol style="list-style-type: none"> 6. Estimate recharge and artificial recharge of groundwater bodies 7. Estimate the effects caused by water regulation, flood protection and land drainage 8. Establish monitoring of quantitative status for groundwater: <ol style="list-style-type: none"> a. Groundwater level monitoring network b. Density of monitoring sites c. Frequency of monitoring d. Additional monitoring requirements for protected areas as listed under Annex IV 9. Present monitoring results as maps in accordance with Annex V 10. Interpret groundwater quantitative status per Annex V 								
Scale of measurement	River basin; Member State								
Data source									
Required data	Anthropogenic pressures on groundwater reserves; Water abstraction rates; Land-use; Water regulation activities; Water losses								
Data input type	Quantitative and qualitative								
Data collection frequency	<p>Frequency of monitoring for drinking water abstraction points:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">Community served</th> <th style="text-align: center;">Frequency</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">< 10 000</td> <td style="text-align: center;">4 per year</td> </tr> <tr> <td style="text-align: center;">10 000 – 30 000</td> <td style="text-align: center;">8 per year</td> </tr> <tr> <td style="text-align: center;">> 30 000</td> <td style="text-align: center;">12 per year</td> </tr> </tbody> </table>	Community served	Frequency	< 10 000	4 per year	10 000 – 30 000	8 per year	> 30 000	12 per year
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> 30 000	12 per year								
Level of expertise required	Moderate to High								
Synergies with other indicators	Indicators forming parts of the Member States' River Basin Management Plans: <i>Quantitative status of groundwater, Chemical status of groundwater, Ecological status of surface waters, Biological status of surface waters, Hydromorphological status of surface waters, Physicochemical status of surface waters and Ecological potential for heavily modified or artificial water bodies</i>								
Connection with SDGs	SDG 6 Clean water and sanitation, SDG 11 Sustainable cities and communities, SDG 12 Responsible consumption and production, SDG 13 Climate action								

Opportunities for participatory data collection	No opportunities identified
Additional information	
References	<p>European Parliament. Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy. 2010. http://data.europa.eu/eli/dir/2000/60/oj</p> <p>European Parliament. Directive 2006/118/EC of the European Parliament and of the Council of 12 December 2006 on the protection of groundwater against pollution and deterioration. 2006. http://data.europa.eu/eli/dir/2006/118/2014-07-11</p> <p>European Commission. Report from the Commission to the European Parliament and the Council on the Implementation of the Water Framework Directive (2000/60/EC). River Basin Management Plans. European Commission, 2012.</p>

6.52 Trend in piezometric levels (TPL)

Project Name: NAIAD (Grant Agreement no. 730497)

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Trend in piezometric levels (TPL)	Water management Natural and Climate Hazards
Description and justification	Provides an indication of the capacity of available surface water resources to meet the water demands.
Definition	Difference between surface water supply and demand (m ³ /year)
Strengths and weaknesses	