	surface waters, Hydromorphological status of surface waters, Physicochemical status of surface waters and *Ecological potential for heavily modified or artificial water bodies*
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	European Parliament. (2000). *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*. http://data.europa.eu/eli/dir/2000/60/oj European Parliament. (2006). 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. http://data.europa.eu/eli/dir/2006/118/2014-07-11 European Commission. (2012). *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*.

4.25 Depth to groundwater

Project Name: UNaLab (Grant Agreement no. 730052)

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Depth to groundwater	**Water Management**
Description and justification	Measurement of depth to groundwater in a well is frequently performed to examine changes in the level of the water table.
Definition	Depth from land surface reference point to top of groundwater table (m)

Strengths and weaknesses	+ Straightforward and easy assessment of water table change over time - Important to take repeated measurements over a long period of time to accurately evaluate changes in groundwater resource volume
Measurement procedure and tool	One of the simplest ways to assess the depth from land surface to groundwater is to measure the water level in a shallow well using a chalked steel measuring tape. Blue carpenter's chalk is commonly used to mark the steel tape, which is lowered into the well until the end of the tape is wet. The level of the water will be indicated by the depth to which the chalk is wet and the colour changes from light blue to dark blue. There are a number of different electronic water level metres marketed by different companies, any of which are suitable for routine monitoring of groundwater level in shallow wells or boreholes. These electronic instruments typically consist of a spool of dual conductor wire with a probe attached to the end and an indicator. As the probe is lowered into the well or borehole, a light or sound will indicate when the indicator comes into contact with water and the circuit is closed. Regardless of the measurement technique employed, when measuring depth to groundwater the depth measurement should be made relative to an established reference point. This reference point is typically denoted by a permanent mark or notch on the well casing and is associated with a geodetic vertical datum established for surveying, e.g., the European Vertical Reference System or applicable local height datum.
Scale of measurement	Plot scale to street scale or greater, depending on surface topography and extent/connectivity of underlying aquifer(s)
Data source	
Required data	Depth to the water table
Data input type	Quantitative
Data collection frequency	Annually
Level of expertise required	Low
Synergies with other indicators	Direct relation to *Daily temperature range* indicator
Connection with SDGs	SDG 6 Clean water and sanitation, SDG 11 Sustainable cities and communities

Opportunities for participatory data collection	Participatory data collection is feasible through participation in the measurement procedure
Additional information	
References	Hopkins, J. & Anderson, B. (2016). *A Field manual for Groundwater-level Monitoring at the Texas Water Development Board*. User Manual 52. Retrieved from http://www.twdb.texas.gov/groundwater/docs/UMs/UM-52.pdf Snyder, D.T. (2008). *Estimated depth to Ground Water and Configuration of the Water Table in the Portland, Oregon Area*. Scientific Investigations Report 2008-5059. Reston, Virginia: United States Geological Survey. Retrieved from https://pubs.usgs.gov/sir/2008/5059/pdf/sir20085059.pdf

4.26 Groundwater chemical status

Project Name: UNaLab (Grant Agreement no. 730052)

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Water Quality: Chemical status of groundwater	**Water management**
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. The Groundwater Directive (2006/118/EC) complements the Water Framework Directive and sets the groundwater quality standards.
Definition	Chemical status of groundwater bodies (good, poor)
Strengths and weaknesses	+ A comparable EU-wide applied assessment - Requires arrangements on Member State-level