

4.58 Hydromorphological quality of surface waters

Project Name: UNaLab (Grant Agreement no. 730052)

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Hydromorphological status of surface waters	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.
Definition	Hydromorphological quality of surface waters - rivers, lakes, transitional waters and coastal waters (rated high, good, moderate, 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. Characterise water bodies within a river basin area per Annex II: <ol style="list-style-type: none"> a. Rivers, lakes, transitional waters or coastal waters — or artificial surface water bodies or heavily modified surface water bodies 2. Establish type-specific hydromorphological reference conditions per Annex V 3. Identify and estimate the impacts of significant water flow regulation 4. Identify and estimate significant morphological alterations to water bodies

	<ol style="list-style-type: none"> 5. Establish monitoring of hydromorphological status for surface waters: <ol style="list-style-type: none"> a. Design of surveillance, operational and/or investigative monitoring per Annex V b. Frequency of monitoring c. Additional monitoring requirements for protected areas as listed under Annex IV 6. Present monitoring results as maps in accordance with Annex V 8. Classify hydromorphological status of surface waters per Annex V 																				
Scale of measurement	River basin; Member State																				
Data source																					
Required data	Reference conditions; Anthropogenic impacts; Water regulation activities																				
Data input type	Quantitative and qualitative																				
Data collection frequency	<p>Frequency for surveillance monitoring period:</p> <table border="1"> <thead> <tr> <th>Quality element</th> <th>Rivers</th> <th>Lakes</th> <th>Transitional</th> <th>Coastal</th> </tr> </thead> <tbody> <tr> <td>Continuity</td> <td>6 years</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Hydrology</td> <td>Continuous</td> <td>1 month</td> <td></td> <td></td> </tr> <tr> <td>Morphology</td> <td>6 years</td> <td>6 years</td> <td>6 years</td> <td>6 years</td> </tr> </tbody> </table> <p>For operational monitoring, the frequency of monitoring required for any parameter shall be determined by Member States so as to provide sufficient data for a reliable assessment of the status of the relevant quality element. As a guideline, monitoring should take place at intervals not exceeding those indicated for surveillance monitoring.</p>	Quality element	Rivers	Lakes	Transitional	Coastal	Continuity	6 years				Hydrology	Continuous	1 month			Morphology	6 years	6 years	6 years	6 years
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Continuity	6 years																				
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Morphology	6 years	6 years	6 years	6 years																	
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, SDG 14 Life below water
Opportunities for participatory data collection	No opportunities identified
Additional information	
References	<p>European Parliament. (2000). <i>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</i>. http://data.europa.eu/eli/dir/2000/60/oj</p> <p>European Commission. (2012). <i>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</i>.</p>

4.59 Fluvial Functionality Index

Project Name: PHUSICOS (Grant Agreement no. 776681)

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Fluvial Functionality Index	Water Management
Description and justification	Indicators of Effects on Water Quality sub-criterion will assess the effects of project scenarios on water quality, in terms of physical, microbiological, biological and chemical parameters.
Definition	The main objective of the FFI (APAT, 2007) consists of the overview of the comprehensive state of the river environment and in the evaluation of its functionality, understood to be the result of synergy and integration of an important series of biotic and abiotic factors present in the water ecosystem and in the connected terrestrial one. Through the analysis of morphological, structural and biotic parameters of the ecosystem, interpreted following the principles of river ecology, the functions associated with it as well as the distances from the condition of greatest functionality, identified following a reference model, can be highlighted. The understanding of the environmental features allows the definition of a global index of functionality in terms of retention and cycling capacity of