EARSC
European Association of Remote Sensing Companies

EARSC Statement

Integrated water management – revised lists of surface and groundwater pollutants

The European Association of Remote Sensing Companies (EARSC) is a trade association based in Brussels, representing the European downstream services sector. EARSC counts more than 135 members across 25 countries of Europe.

EARSC welcomes the opportunity to provide feedback to the European Commission's consultation for the revision of lists of pollutants affecting surface and groundwaters as a follow up to the fitness check evaluation of the EU water legislation. Particularly we would like to highlight the recognition in the proposal to consider scientific and technical progress in the area of monitoring of the status of water bodies in accordance with the monitoring requirements set out in Annex V to Directive 2000/60/EC, where the use of data from the Copernicus programme[1] as well as privately available resources is recognized during integrated water management practises.

Water quality monitoring is fundamental to **sustainable water management**. It provides essential data and information, which characterize the physical, chemical and/or biological state of water resources. With satellites optically-active **water quality parameters**, most commonly turbidity, total suspended solids, Secchi disk depth, coloured dissolved organic matter, Chlorophyll-a, potentially harmful algal blooms (cyanobacteria), surface water temperature and trophic state index **can be measured**. The parameters can be measured up to several times daily (depending on cloud cover) in spatial resolutions ranging from 3-300m, applicable also for small water bodies > 1 ha.

[1] Copernicus Marine services and Copernicus Global Land service (water quality)

European Association of Remote Sensing Companies, Rue de la Loi, 26, 1040 Brussels, Belgium

www.earsc.org | E-mail: info@earsc.org | VAT Number: BE0447243442

Satellite-based retrieval of suspended solids and turbidity might be used as a proxy for pollution as particles also provide attachment places for other pollutants, notably metals and bacteria. Further, high turbidity can provide food and shelter for pathogens. For this reason, these measurement can be used as an indicator of potential pollution in a water body.

Concerning ground water, satellite images can be used to provide inputs to models to map the extent the groundwater aquifers, identify areas where groundwater is vulnerable to pollution and determine areas where there is an increased risk of contamination, while for the monitoring of water quality sea parameters can be a tool to verify that there is reduction of the discharge of forbidden substances along the internal water body as specified in the Water Framework Directive. Online solutions integrating different kinds of data for decision making are already in operation for bathing water monitoring or disaster mapping and can be extended to waste water facilities. These operational services can be used by the European Chemicals Agency (ECHA) to prepare the reports to assist the Commission in selecting the substances for the watch list.

Overall, **the promotion of sustainable use and management of water resources is essential for the health of both terrestrial and marine ecosystems**. For this Earth Observation services based on satellite missions can be used to monitor the trend of water quality parameters such as turbidity and dissolved organic substances to check if the reduction forbidden substances is improving the quality water. The measurement via satellite is more cost-efficient compared to traditional sampling methods which usually require personnel effort in the field and may also include extensive analysis work in a laboratory.

Earth Observation data and products can be used directly to monitor the status of the waters and indirectly to measure the effectiveness of the directive application. Data from satellite sensors detect changes in water quality, such as changes in water colour or turbidity which provides relevant information on the presence of pollutants or to monitor the movement of pollutants in surface water. **Satellite-derived data** is a reliable, continuous, and systematic source for monitoring water quality across extensive spatial and temporal scales which is essential to characterize waters and identify changes or trends in water quality over time. Information on water quality and quantity can be used to inform irrigation management,

drinking water treatment, and industrial water use. The use of satellite data in this way can help ensure that water resources are managed in a sustainable and efficient manner. EARSC supports the integration of new monitoring practises such as the use of satellite-derived data and added-value services as operational solutions to support the integrated water management practises[2] for the protection of groundwater against pollution and deterioration and contributing to taking appropriate measures to achieve progress evaluation related to water and freshwater ecosystems (SDG6) and transitional water bodies and marine water bodies (1 nautical mile from the coast) that are covered by the WFD (SDG 14).

EARSC remains at your disposal to work together on this objective.

[2]Water Quality Management in Germany (https://earsc.org/sebs/all-cases/water-quality-management-in-germany/) and Water Quality Management in Finland (https://earsc.org/sebs/water-quality-in-finland/) and Aquifer Management in Spain (https://earsc.org/sebs/aquifer-management-in-spain/)