



## Earth Observation in service to EU Water

A broader use of the Earth Observation services may be used to facilitate and harmonise a large number of monitoring and reporting demands required by the EU Water Framework Directive.

By setting ambitious water quality goals across Europe, the implementation of the EU Water Framework Directive (WFD) will require systematic and comparable monitoring of water status throughout the Member States. Although the Directive does not foresee any special monitoring methods, its requirements shift the monitoring focus from water bodies within legal boundaries to trans-national river basins. Thus the collection and reporting of the demanded data will certainly require new monitoring networks and techniques.

With this regard, a recent joint study of German researchers and the European Space Agency (ESA) explored the extent to which services based on Earth Observation (EO) addressed by ESA/EC initiative "Global Monitoring for Environment and Security – GMES" can contribute to special monitoring and reporting requirements of the WFD.

Indeed, the EO data is able to provide relevant information over relatively large areas, but the current Common Implementation Strategy for WFD mentions the EO for the monitoring of only biological and hydromorphological quality parameters.

The authors argue that EO services offer many other opportunities together with in situ measurements within an integrative monitoring approach, and can be:

- 1) used to facilitate the creation of the requested comparable standardised maps, easing their subsequent interpretation and use across Member States,
- 2) exploited to increase hydrology and water resource data bases in a more timely and cost-effective way,
- 3) integrated in recommendations on harmonised monitoring methods,
- 4) tested through the Integrated River Basin Management,
- 5) integrated in the development of the Data and Information Management Systems,
- 6) used as support tools to other water related issues, like flooding.

Furthermore, as suggested in the paper, EO services on water can be useful for a broad range of end users, including general public, authorities involved in monitoring programmes, hydrologists and water resource managers, policy makers, researchers and emergency units.

Bearing in mind the achievement of environmental objectives, the broader use of EO based services in the implementation of WFD might be an important step in matching the increasingly specific demand for information and data collection and the progress in advanced measurement techniques, observing systems and information technologies.

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