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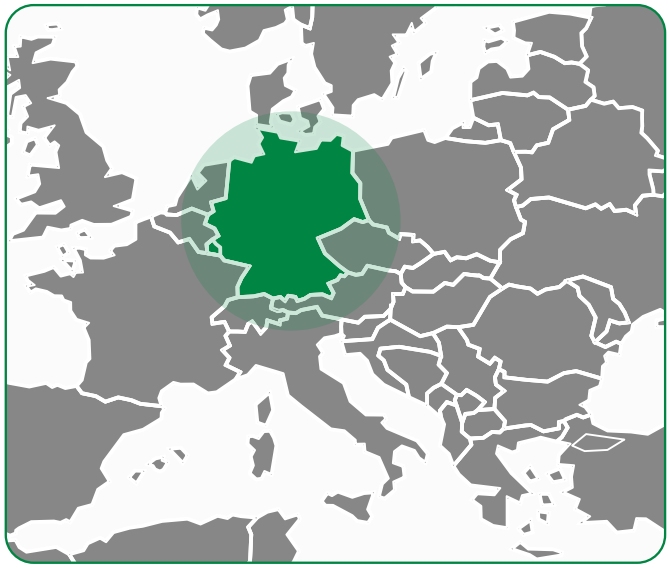
WATER QUALITY MANAGEMENT IN GERMANY

What it is about

Sentinel 2 and 3 data are used to monitor water bodies in Germany and particularly in the region of Baden-Württemberg. These measurements allow regional environment agencies – in this case LUBW, the Baden-Württemberg State Institute for the Environment – to monitor the quality of water in lakes throughout their region to an extent that is not possible using traditional sampling and testing.

The data complements the in-situ measurements required for reporting purposes against regulations contained in the EU Water Framework Directive and/or the EU Bathing Waters Directive to name but two. But, while only a very limited number of the 260 water bodies over 10ha in size in Baden-Württemberg can be tested in the accepted, traditional way, the satellite-derived data can provide good information for all of them.

This allows the LUBW and other regional agencies to provide a better service for their citizens for a moderate cost helping to reduce exposure to dangerous harmful algal blooms (HABs) whilst improving the environment, reducing pollution and helping nature conservation.



What we have found:

- Satellite-derived measurements of the quality of water in lakes help local and regional authorities monitor the lakes in their region more effectively, more frequently and more comprehensively.
- The regional environmental agency is able to provide a better service to its citizens for an affordable cost.
- District councils can improve the planning of sample testing and analysis and are able to improve transparency and trust within the local community.
- Citizens can enjoy leisure activities whilst reducing their risk of exposure to dangerous toxins in the water.

Funded by the EU and ESA

Layout by ESA EO Graphics Bureau

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The Satellite Data
Copernicus Sentinel-2 provides free-of-charge frequent wide-swath, high-resolution multispectral imagery over Germany with 13 spectral bands. Sentinel-3 carries the Ocean and Land Colour Instrument which provides complete, global, surface temperature measurements every 2 days.

The Service Provider
EOMAP GmbH has developed a service – eoLytics - which allows subscribers to download water quality measurements for their areas of interest. LUBW access data for the Baden-Württemberg region.

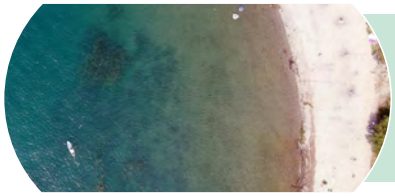
€100k pa

The Primary User
LUBW, the Baden-Württemberg State Institute for the Environment, subscribes to the eoLytics service. The region makes the information on lake water quality available to citizens to plan their leisure activities. LUBW shows its capacity to provide value to citizens.

€100kpa cost; €1.4m cost pa at national level

Secondary Benefits
District councils in the region use the information to inform their citizens about the quality of the lake water so helping them plan their leisure activities to avoid risk of HAB's. Water companies and districts use the information to help plan water samples and testing.

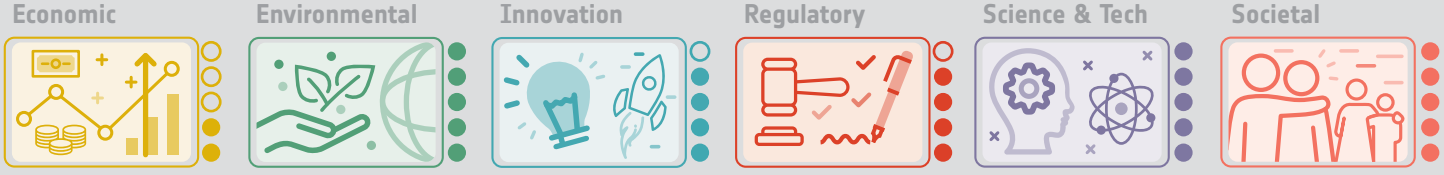
€1.7m – €3.6m pa at national level



Society & Citizens' Benefits
The local community benefits from an improved environment and less risk of exposure to harmful toxins whilst enjoying an improved environment and leisure facilities.

€3.1m – €6.2m pa at national level

Total benefits



Anticipated Monetary Benefits: €4m – 7.8m pa across Germany

About the project

Through a series of case studies, EARSC aims to gather quantitative and qualitative evidence that the usage of Copernicus Sentinel data provides an effective and convenient support to various market applications. These studies are undertaken in the frame of the project "Showcasing the benefits brought by the usage of Sentinels data to society, environment and economy: a bottom-up assessment based on traceable impacts along selected value chains", under an assignment from the European Space Agency (ESA) funded by the European Union as part of the Copernicus Programme.

Download the full report from the project website

http://earsc.org/sebs