Monitoring water quality through satellite Earth Observation

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An innovative tool to monitor water quality in the Lake Chad Basin combining satellite Earth Observation and in-situ measurements was launched during the UNESCO 41st General Conference at a side-event on 17 November 2021, with high-level government representatives, development and scientific partners, and local communities. Good water quality in Lake Chad is vital for ecosystems' integrity and for the health of local communities and the preservation of their traditional livelihood practices such as fishing, breeding and harvesting of spirulina, which depend on of this precious resource and its water quality. The UNESCO World Water Quality Portal for Lake Chad, thus supports ecological preservation, local livelihoods, sustainable development, and peace in the Lake Chad Basin, whose water and natural resources over 40 million people depend on. The Portal provides open access to data on water quality of Lake Chad and its tributary Chari-Logone rivers, since 2013, retrieved from EO images from Sentinel-2 and Landsat satellites and obtained from field measurements. Data on the evolution and changes of the Lake Chad water surface and water level are also available on the Portal through satellite Earth Observation images. Information on water quality is essential for sustainable water management and supports science-based decision making.

The Portal for Lake Chad was conceptualized and developed under the International Initiative on Water Quality (IIWQ) of UNESCO's Intergovernmental Hydrological Programme (IHP). Its application in the Lake Chad Basin was made possible through collaboration between IHP and the Man and the Biosphere (MAB) programme in the framework of the Project "Biosphere and Heritage of Lake Chad" (BIOPALT). The Portal is the first application of the use of satellite EO data for operational monitoring of inland freshwater quality, building on the demonstration phase of the UNESCO World Water Quality Portal for selected river basins in world's different regions in 2018.

Image CNES, UNESCO World Water Quality Portal

UNESCO Portal for Lake Chad water quality monitoring

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