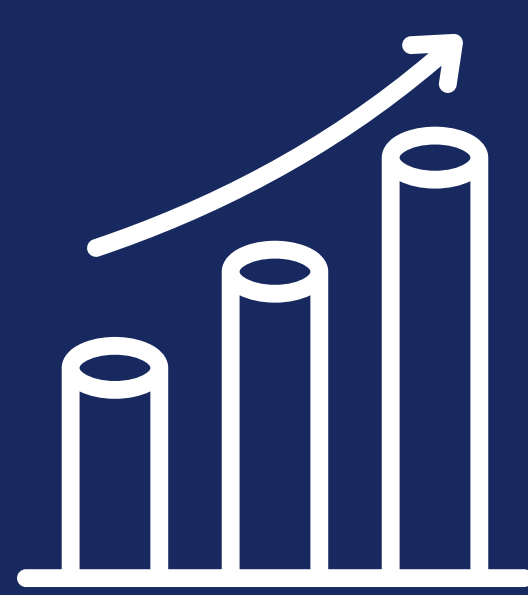


Monitoring Inland Water Quality Using Satellite Imagery



Remote monitoring



Scalability



Real-time



Cost effective

Monitoring water quality is essential for environmental protection and sustainable use. Traditional field methods are often costly and time-consuming and do not provide real-time data. This study leverages **remote sensing** data from **Sentinel-2** satellites combined with **cloud-based Python processing** to analyze inland **water quality** in **Poland**.



<http://sen2waq.pl/>

SATELITE IMAGERY

Sentinel-2 data was processed using Python and the CREODIAS platform. Cloud computing enabled the derivation of key **water quality indices**:

- **Chlorophyll-a (Chl-a)**
- **Cyanobacteria (Cya)**
- **Turbidity (Turb)**
- **Colored Dissolved Organic Matter (CDOM)**
- **Dissolved Organic Carbon (DOC)**
- **Water Color**
- **Normalized Difference Chlorophyll Index (NDCI)**

CALIBRATION

In-situ data complements remote sensing by providing **ground-truth** measurements that **enhance the accuracy** of monitoring efforts.

READY TO DEPLOY

By utilizing satellite data, we aim to overcome the constraints of traditional monitoring systems, providing **continuous data coverage** over large geographic areas.

REAL-TIME

The **automated** processing workflow updates map layers as soon as new satellite data becomes available.

APPLICATION

These technologies support **effective water resource management** by ensuring safe, clean water and enabling early **contamination prevention**. The system reduces reliance on manual sampling, allows **real-time monitoring**, and increases public awareness of water quality issues

References & Acknowledgments:

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