Earth Observation-based Services for Monitoring and Reporting of Ecological Status (EOMORES)

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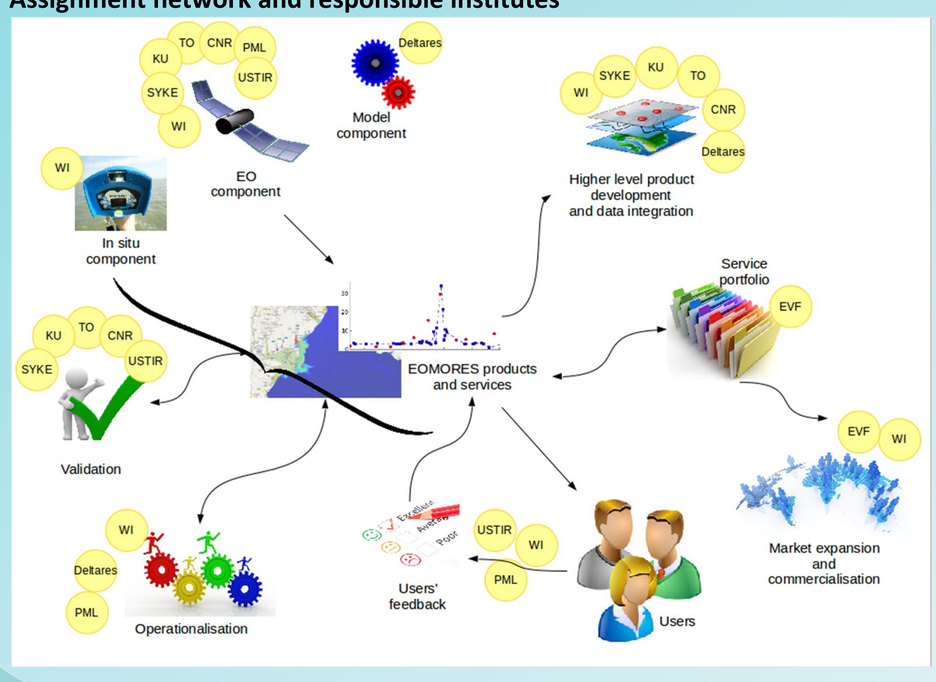
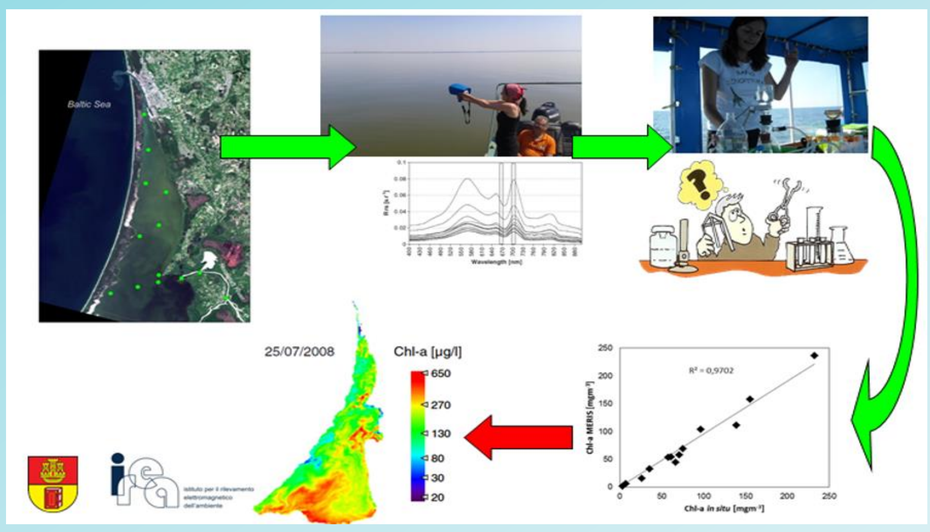
Overview:
The H2020 project EOMORES will develop operational monitoring and reporting services for inland and coastal water quality based on a combination of the most up-to-date satellite data, innovative in situ instruments and ecological models.
Lakes, reservoirs and coastal water bodies constitute essential components of the hydrological and biogeochemical water cycles, and influence many aspects of ecology, economy, and human welfare, providing ecosystem services in multiple and sometimes conflicting ways. Knowledge about the state of inland and coastal water bodies is therefore of great interest.

Project details:
1) EOMORES is a H2020 (EC) research project
2) Project time: 3 year, starting 1 December, kick off 9 & 10 January
3) There are 9 partners from 6 EU countries
4) Almost all (8) partners have one or several users in their country
5) 13 users

Assignment network and responsible institutes

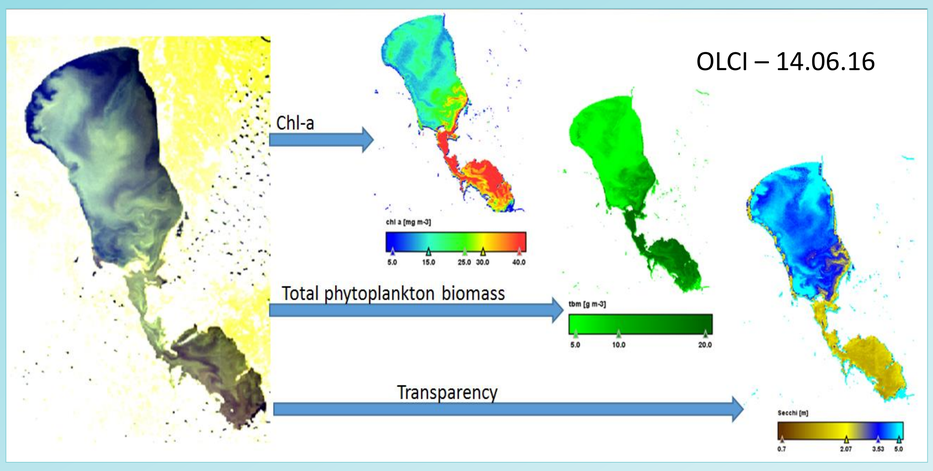


All the elements used to create the products



Giardino et al., 2010, Bresciani et al., 2012, Vaičiūtė et al., 2012

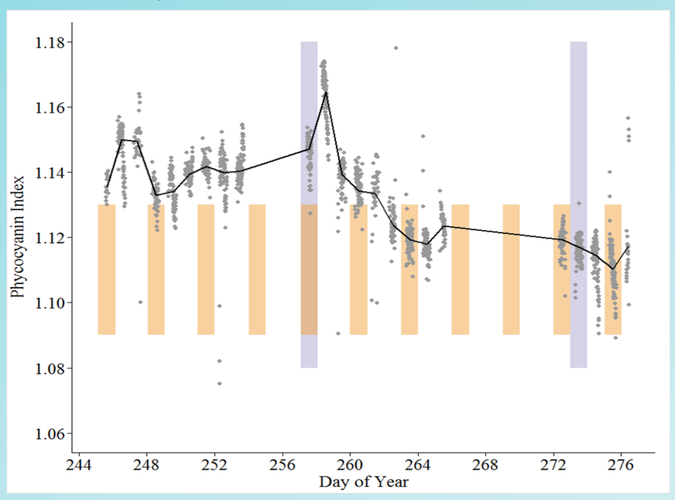
Earth Observation



Method to derive WQ parameters: Alikas et al., 2015; Alikas and Kratzer, 2017

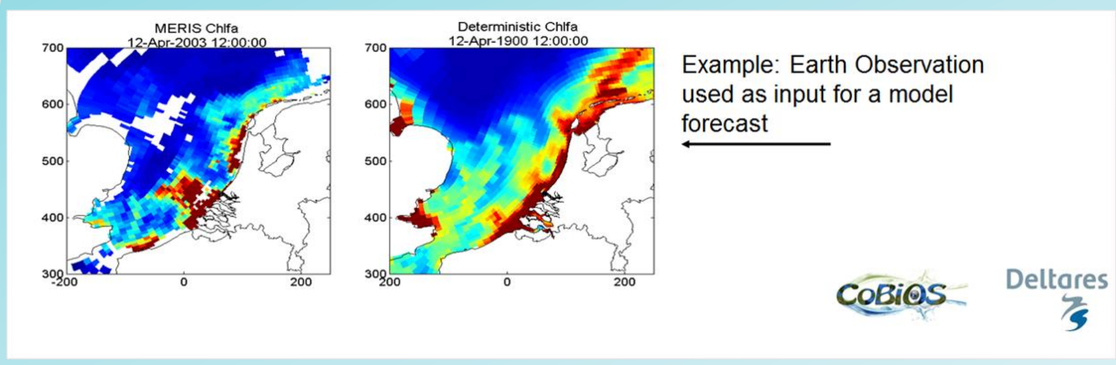
Service concepts:
1) operational water quality monitoring and forecasting for water management
2) implementation of validated EO-based water quality indicators for WFD and other reporting
3) historic compilation of data for specific ecological analysis.

In situ example



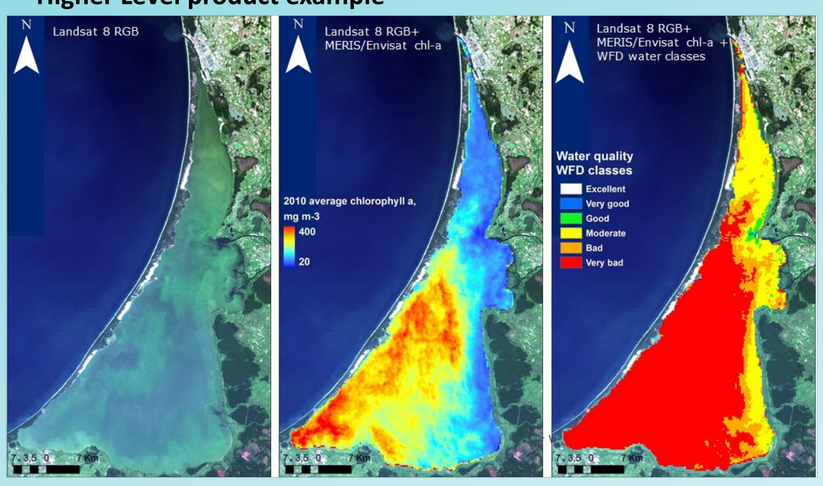
Intra-daily and daily variations of cyanobacteria pigments in Mantua Lakes (Lombardia Region, Italy) based on spectral indexes obtained by operating an autonomous spectroradiometer in the field for about 30 days (Hestir et al. 2015)
To show data at temporal resolutions of satellite data the nominal acquisitions of Landsat-8 and Sentinel-2 A & B are indicated with bars (grey Landsat, orange Sentinel)

Integrated product example



Chlorophyll a data retrieved from MERIS data used as an input for chl-a prediction model in the North Sea

Higher Level product example



Reporting tools for Water Framework Directive: water quality assessment maps of the Curonian lagoon (Lithuania-Russia) calculated from the MERIS images.
True color composition in the background is based on Landsat-8

(Giardino et al., 2010, Bresciani et al., 2012)

Main challenges
1) Gathering users' needs and requirements from very different users
2) Translating users' requirements in 'general' requirements and development direction(s)
3) Working with several partners on the same products, and integrating these products
4) Generating products that really satisfy the users
5) Keeping the users interested after the project
6) Market expansion

➔ *Include enough feedback loops during development and talk a lot with our users*

References
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