

→ BALTIC FROM SPACE WORKSHOP

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Development of new national monitoring service in Lithuania



Diana Vaičiūtė Klaipėda University

diana.vaiciute@jmtc.ku.lt

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Team at Klaipeda University

Operational EO-based water quality and ecological processes







D. Vaičiūtė

KLAIPĖDA UNIVERSITY

M. Bartoli

G. Giordani

M. Žilius

- J. Petkuvienė
- I. Vybernaitė-Lubienė



C. Giardino

M. Bresciani

stituto per il Rilevamenti Elettromagnetico dell'Ambiente



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Ecosystem heath and management, focus on the **EU Directives**

Remote Sensing of hydrophysical processes







OUTLINE

- Environment around us
- Ecological problems
- Environmental monitoring and EU legislations in LT
- EO-based service in Lithuania H2020 EOMORES
- H2020 EOMORES EO-based service in LT
- EO-based activities at Klaipeda University
 - Cal/Val of EO-data
 - Monitoring of environment potential components of service
- Main outcomes and future perspectives





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Environment around us...





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Ecological problems...





Environmental monitoring and EU legislations in LT

Environment Protection Agency of Lithuania/support of research institutions





Responsibilities:

- to assess the environmental characteristics, pressures and impacts;
- to develop the indicators with reference and target values/levels showing the good ecological status;
- to upgrade monitoring programmes for sustainable water resources protection and management promoting and developing the application of new and effective methods (models, satellite imagery);
- to restore the ecosystem into a balance and achieve or maintain Good Environmental Status;
- to protect the environment.

- Need of comprehensive data for development and testing of WQ indicators;
- Operational data demand;
- Bottom-up conversation with end-users.

Bathing WD, Drinking WD etc.

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H2020 EOMORES - EO-based service





H2020 EOMORES - EO-based service





- Inventorisation of users' needs, determine direction of research
- Research and development of the three components (1, 2, and 3)
- Research and development of integrated and higher level products
- Validation
- Integration in the (data) system of the users
- Operationalisation

Contact: Annelies Hommersom projectoffice@waterinsight.nl





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H2020 EOMORES - EO-based service in LT





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First year activities:

- Intensive communication with user (Department of Marine Research, EPA) introduction/education, indicators and applications);
- Validation plan, guality and technical requirements;
- Cal/val of EO data at selected study sites (users included too);
- Development of higher level products;
- Demonstration to users/discussions:
- Interactive lectures for the youngest generation _

Long-term investigations

Requested by users

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SMARTSEA.LT



Cal/Val of EO-data



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Water Quality



Thematic maps

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Vaičiūtė et al., 2015



Water Quality

Chl-a concentration in the coastal waters of the Baltic Sea, MERIS/Envisat, FUB/Wew



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Poster No. 23



SST mapping



SST - key parameter defining hydrological and ecological state of the SE Baltic and the Curonian Lagoon waters (Kozlov et al., 2012).



Duration up to several weeks;



Upwelled waters inflows to the Curonian Lagoon



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Ice cover mapping

Analysis of spatial ice cover changes in the Curonian Lagoon from SAR data





CL in 2008-2011



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Main outcomes and future perspectives



European Space Agency

- Demand of comprehensive dataset for:
 - Monitoring of ecological status;
 - Development and testing of new and integrated WQ indicators;
- Where we are:
 - In the progress of EO-based products development and application
 - new scopes monitoring of macrophyte and coastal vegetation, SSS, floods, etc.;
 - new data sources and approaches COPERNICUS, hyperspectral imagery, the synergistic use;
 - new regions of interest (lakes, reservoirs, sea port area).
 - In the discussion with new users engagement, education, development/testing of indicators bottom-up cooperation is extremely important.



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Do you imagine a world without remote sensing?

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