

Black Sea and Danube Regional Initiative Applications (BSADRI)

**Priority Application Domain B:
Sustainable Natural Resource Management in Agriculture and Forestry**

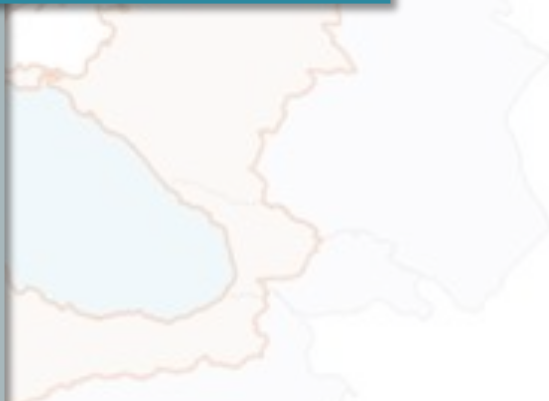
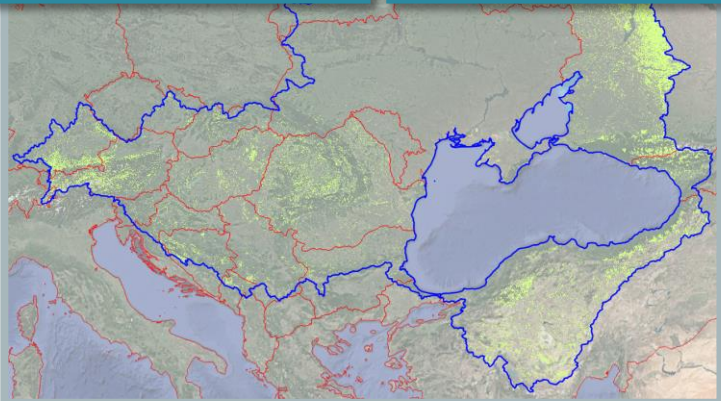
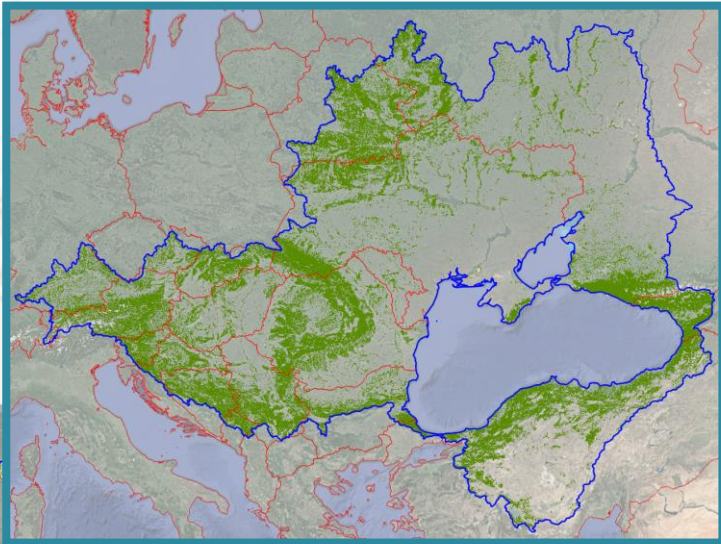
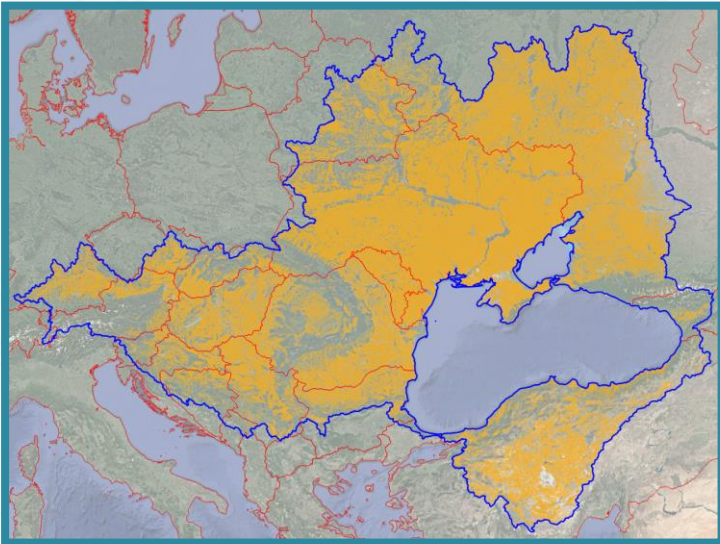
Authors:

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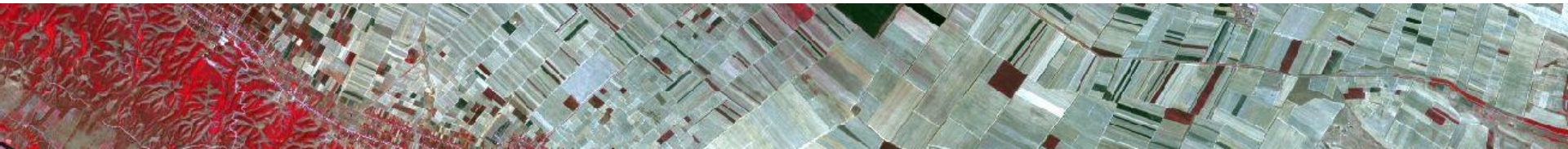
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ESA regional initiatives – Black Sea region

- Activity is part of the EO (Earth Observation) Exploitation Platforms element of ESA's Earth Observation Envelope Programme (EOEP-5,) aiming among others to establish regional information services in selected geographic regions in Europe and neighbouring countries (Alps, Baltic, ...& Black Sea...
- There are three common objectives for all regional initiatives such as:
 - Demonstrate the benefit and utility of EO-derived information to support regional monitoring priorities, and enhance the capabilities to cooperatively address these priorities
 - Achieve measurable progress in embedding EO-derived information into the strategies and cooperation actions within the regions, and
 - Utilise state of the art processing and analysis capabilities within the region and demonstrate added value of using an open, non-monolithic and federated network of platforms, fuelled with European EO assets.



BSADRI - objectives



Precursors & Experience

- Thematic Exploitation Platforms
- Application projects (*EO4SEE /EO4EP*)
- EO based services
(*Sen4CAP, Sen2Agri, DROMAS, Forest Inspector*)

Objectives

- Data tools for EO processing
- Services and applications
- Respond to user needs



Requirements & Expectations

- Use of Cloud infrastructure
- BigData processing
- Link-up to already ongoing developments
- Regional approach to information collection and delivery
- Integrate non-EO data

Context & Regional users

Regional events

Constanta and Sofia
Workshops (2016/18)

Service
providers

EU perspective

CAP, EU Directives



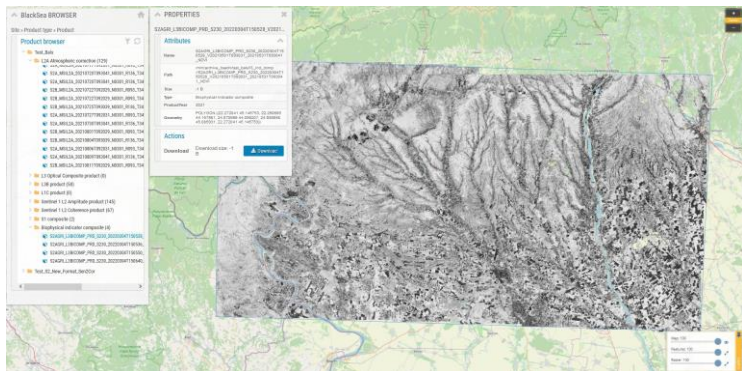
Users

- Authorities
- Research institutes
- Non-governmental organisations
- International institutions & programs



- ESA regional initiatives
- Infrastructure support (NOR)
- Project office

Tools & Services



BSADRI

Home Applications Platform Tools Data Sources 3rd Party Solutions About Blog

Black Sea & Danube Regional Platform

Bringing EO Based Services Closer to the Region

The Black Sea & Danube portal aims to bring EO data closer to the region. It is intended to facilitate EO-based services for better planning across the region providing access to satellite data and value-added thematic services for agriculture and forestry. It endeavors to support more livable communities locally, and a more sustainable region for the benefit of all.

Applications



Access agricultural & forestry services and use case examples

Platform Tools



Find and get the right imagery for your specific needs

Data Sources



Browse other EO resources and find EO-based thematic data

3rd Party



Check 3rd party solutions, EO data processing tools and third services

Platform partners



supported by



gisat s.r.o. Mladý Hrozenov 97, 170 00 Praha 7, Czech Republic



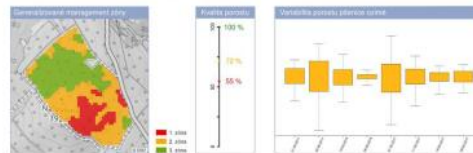
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Scroll To Top

The Black Sea platform

Zapojenost porostů - 491110708

(rozloha: 59,71 ha; svahovitost: 4,76; převládající půšňí typ: kambazem)



Zapojenost porostů je podstatným faktorem pro stabilitu ekosystému a zejména pak na územích problematich plochy na základě skutečných dat systematických průběhů. Průběh je sledován a následně zpracován.

Analýza zapojenosti porostů v území lesů a dřevohospodářských (Santel, Santel) detekce management zóny:

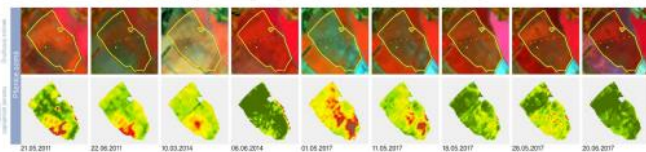
- alena (zelená) - nejlepší zapojení porost
- alena (zelená) - středně zapojení porost
- alena (zelená) - nejhorší zapojení porost

vyhodnocení kvality porostů - jednotlivých zón ve vztahu k nejlepší zóně

vyhodnocení variability porostů - plošnou účinnou v území lesů

Podrobnosti: Podrobně výkaz vykazující vzájemnou variabilitu porostů

Zpracováno: 9. Duben 19.07.2019



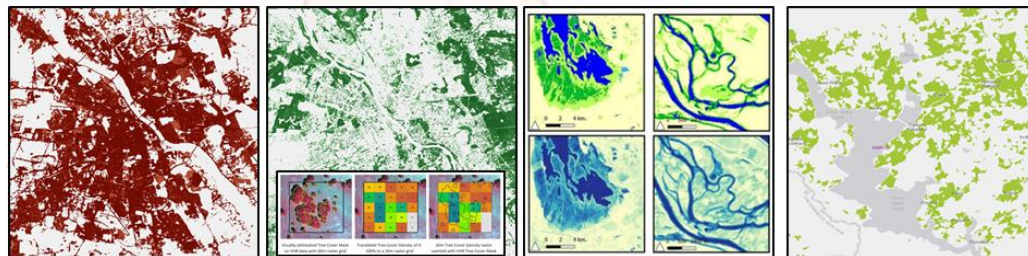
Use case demonstrations

Black Sea – platform

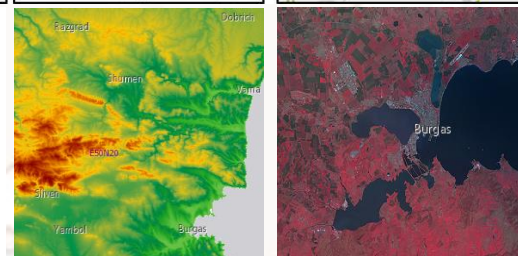
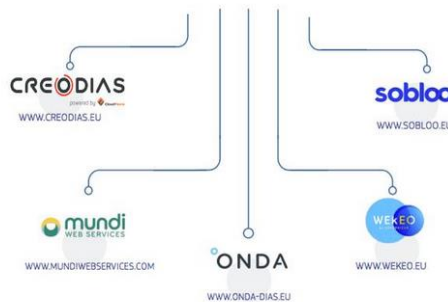


Black Sea – Data & 3rd Party solutions

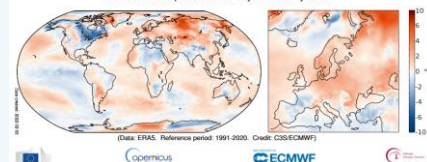
- 01 | Global Copernicus Land Monitoring
- 02 | Pan-European Copernicus (Land Monitoring)
- 03 | High resolution Layers
- 04 | Copernicus Climate Change, Atmosphere...
- 05 | TEP'S - Food, Forestry
- 06 | Sen4Stat, World Cereal, Sen4CAP
- 07 | Data and Information Access Services (DIAS)
- 08 | ESA SCiHub, AWS
- 09 | Sentinel Hub, Land Viewer, Google Earth Engine



THE DIAS & WHERE TO REACH THEM



Surface air temperature anomaly for January 2022



The image shows logos and icons for various data services and organizations. The logos include:

- ALL-IN-ONE ACCESS**: Represented by a hand icon holding a document.
- A WEALTH OF SERVICES**: Represented by a cloud icon.
- USER FOCUSED FROM PRODUCTION TO ACTIONABLE INFORMATION**: Represented by a person icon.
- A WORLD OF OPPORTUNITIES**: Represented by a globe icon.
- Cereal**: Represented by a wheat stalk icon.
- sentinelhub**: Represented by a green and yellow logo.
- EURO DATA CUBE**: Represented by a white logo on a black background.
- food security tep**: Represented by an orange logo.


Black Sea – platform tools

Region of interest

Please define your Region(s) of Interest using a GIS layer in ESRI Shapefile (in a zip file including all the components of the layer), GeoJSON or KML format.

No file selected.

Maximum file size: 5 MB



Min Latitude: Max Latitude: Min Longitude: Max Longitude:

Continent: Country: Region:

General

Service Availability Days:

Sensing period

Select the sensing period of the data that will be used. The period can be maximum one year!

From: To: Except Month:

Additional data specifications

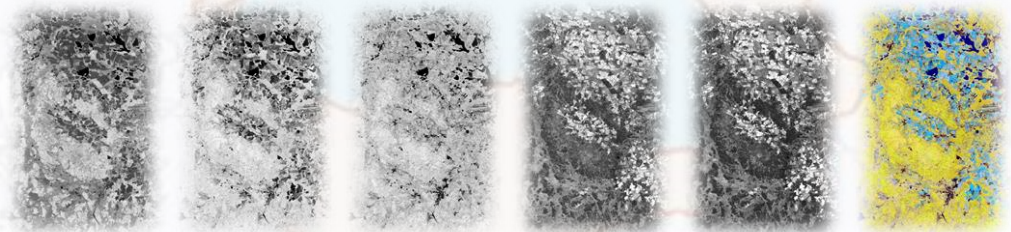
Detail here any other complementary information about the selection of your datasets.
(Free text (200 words max.))

BlackSea

Dashboard

Service user request

Request ID	Period	Services	Status	Actions
Test 2 D	2022-03-01 / 2022-03-11	L3B Vegetation Status, L3 S1 Composite, L3 Indicators Composite	Unknown	<input type="button" value="Details"/> <input type="button" value="Cancel processors"/> <input type="button" value="Finalize request"/> <input type="button" value="Get support"/> <input type="button" value="Report incident"/>
Test Dd	2022-03-01 / 2022-03-11	L3B Vegetation Status, L3 S1 Composite, L3 Indicators Composite	Unknown	<input type="button" value="Details"/> <input type="button" value="Cancel processors"/> <input type="button" value="Finalize request"/> <input type="button" value="Get support"/> <input type="button" value="Report incident"/>
Test_1_zi_ro	2022-02-09 / 2022-02-10	L3B Vegetation Status	Error	<input type="button" value="Details"/> <input type="button" value="Cancel processors"/> <input type="button" value="Finalize request"/> <input type="button" value="Get support"/> <input type="button" value="Report incident"/>
Request_1_zi	2022-02-09 / 2022-02-10	L3B Vegetation Status	Error	<input type="button" value="Details"/> <input type="button" value="Cancel processors"/> <input type="button" value="Finalize request"/> <input type="button" value="Get support"/> <input type="button" value="Report incident"/>
Test_Bals				
Req_oh_1feb				



Applications



Precision farming

2

Forest management

4



CAP Support

3



Land Inventory

1



Georgia Long Term Land Use and Land Inventory

01

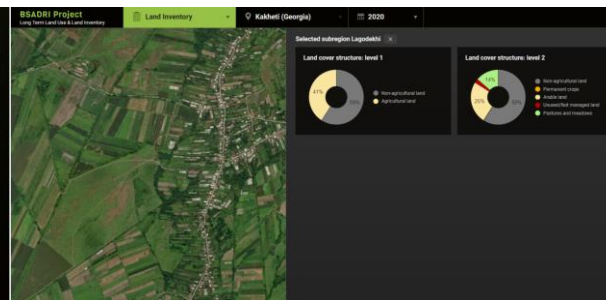
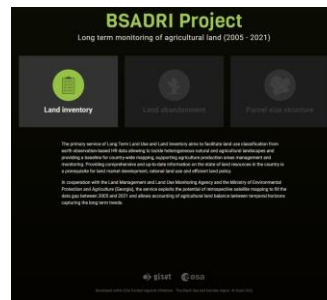
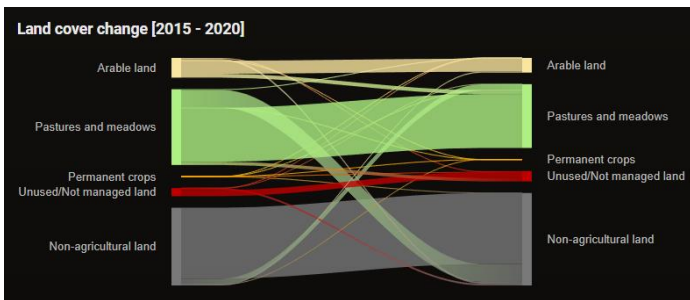


- Aims to facilitate land use classification from HR data
- Primary data source S2 and Landsat
- Allows accounting of balance between temporal horizons (5 year)

Institutional reform

...Data gap on agricultural and arable land...

Service extension



Precision Farming

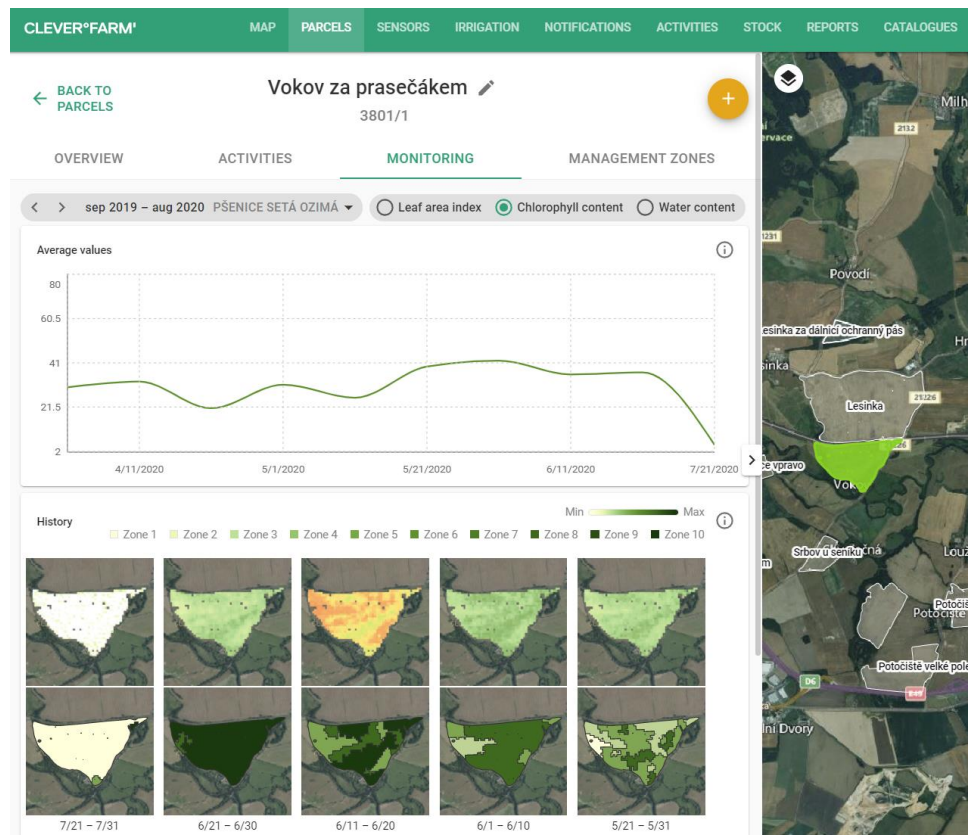
02

- Demonstrate operational agricultural services supporting variable farming management

Products:

Historical time-series analysis of crop spatial and temporal variability, monitoring crop growth in the current season

- Support to soil sampling optimization
- Variable sowing and fertilization
- Pest and disease control
- Smart irrigation



CAP support

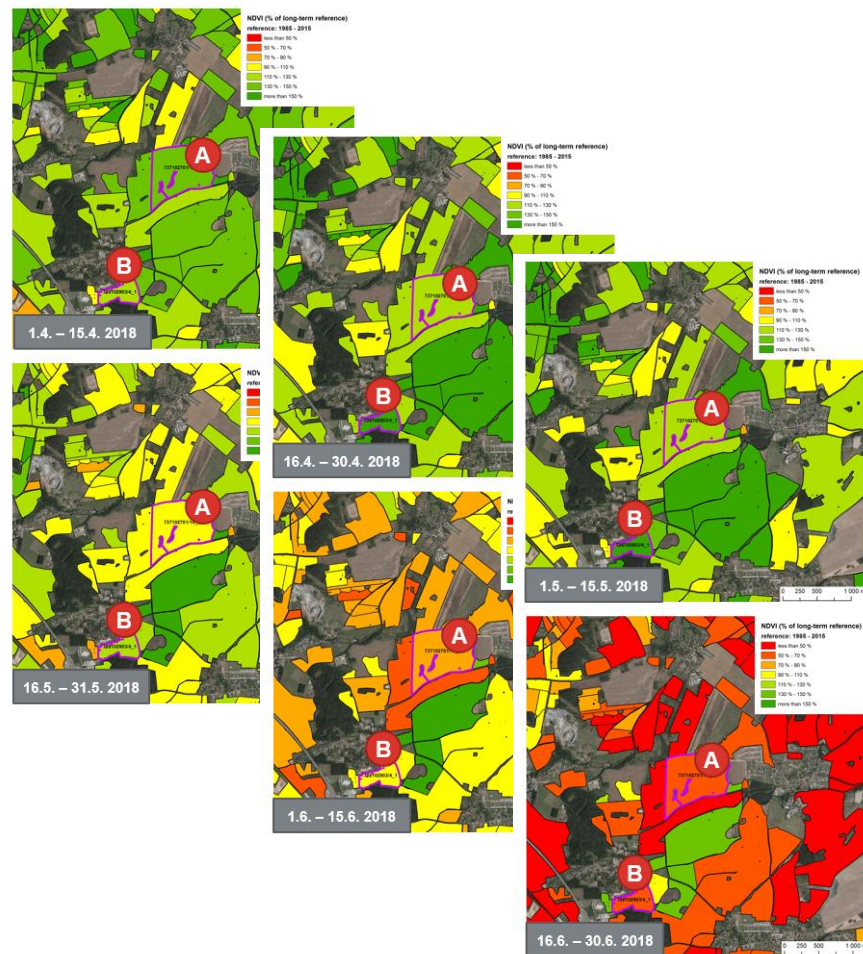
03

- Demonstrate how EO data can be applied to support the compliance checks of CAP subsidy applications

Products:

Monitoring of grassland ploughing, monitoring of crop growing season dynamics to assess the impacts of agricultural drought

- Implementation of Checks by monitoring
- Reducing costs and burden (by automation and limited field visits), increasing fairness (by avoiding sampling)



Forest management

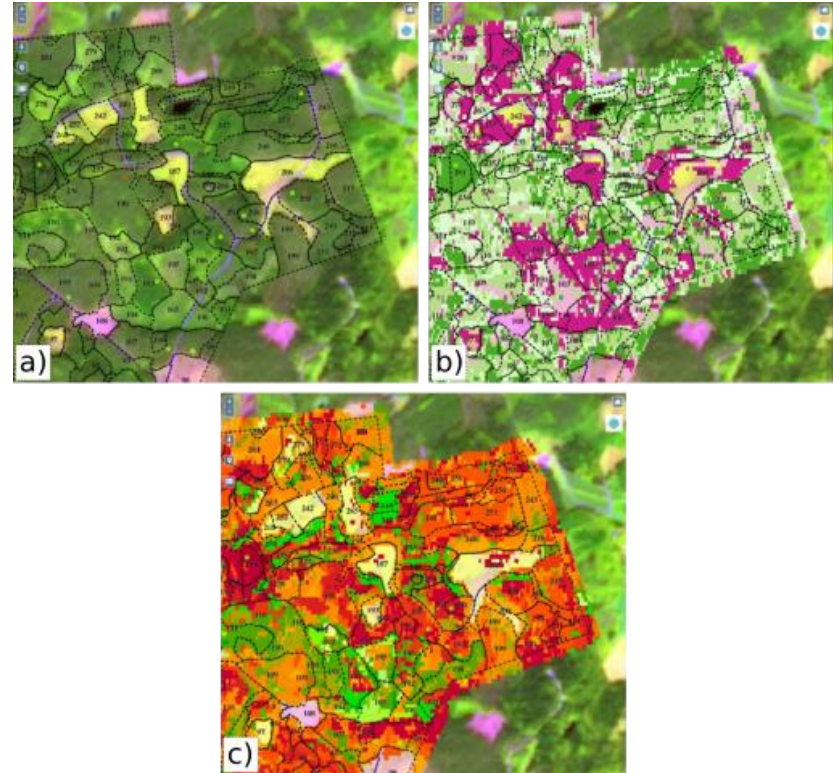
04

- Forest inventory and management from remote sensing Sentinel 2 products for the Carpathian region in Romania

Products:

footprint map, density map, basal area map, volume map

- **Forest inventories**
- **Monitoring** the effect of disturbances
- **Forest operations planning**



Synthesis & Conclusions

- 01 | **Common data basis** – free and open - **Sentinel 1,2** & Landsat
- 02 | Mostly based on operationally available **open source tools**
- 03 | **Data & Services** at one place
- 04 | **Scalability**
- 05 | **Applications** - real operational use cases

- 06 | **Outlook** – portal perspective, additional services, relation to other regional platforms



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