



2ND EDITION EUROPEAN REGIONAL SYMPOSIUM BY NEREUS REGIONS

SPACE DATA FOR TOURISM & AGRICULTURE

ON 28-29 SEPTEMBER MATERA/BASILICATA



**Preparatory Material for European Symposium by
NEREUS-Regions 2023**

**Call for best practices in the tourism
and agriculture domain**

[Registration here](#)

Description and Background:

The upcoming European Symposium by NEREUS-regions will be focused on the use of space-based data and information for purposes in the **agriculture and tourism** sector. Both domains play a significant role in the regional economies of most European regions and are heavily impacted by the long-term effects of the pandemic but also the consequence of climate change resilience. In almost all European regions the responsible have to look for new and innovative solutions to ensure sustainability in both sectors. The symposium aims at bringing together on the one hand responsible **authorities for agriculture and tourism**, preferably from regional and local administrations and on the other hand **service provider**, namely companies, start-ups, research organisations and universities to discuss space solutions.

There will be two sessions, one as mentioned above dedicated to sustainable agriculture and the other dedicated to sustainable tourism. Firstly, the local and regional authorities will take the floor to give an overview of the profile of their respective region and the challenges it faces. Secondly, the service providers will take the floor and will give brief presentations on relevant space applications.

Call to identify interested local and regional authorities and best practices/success stories in the domain:

1) Thematic Session: **Space data for tourism**: linking space to user needs

- a. All NEREUS partners are invited **to identify interested public authorities with responsibilities in the tourism sector** (e.g., head of regional tourism agency, responsible for the tourism department in regional administrations, staff that works on the strategic and economic implications of tourism, etc.) to join the session.

You may submit half page introducing your best practice and send it at rayazi.nereus@euroinbox.com and mchryski.nereus@euroinbox.com by the latest Friday, 30th of June 2023. If wished the NEREUS secretariat will organize short remote sessions in June/July 2023 (max. 1h) to launch the dialogue between public authorities and service providers. This will be an opportunity for both groups to test the approach before the actual event in Basilicata. Interested participants are kindly asked to contact the secretariat by Friday, 30th of June 2023.

The public authorities with responsibilities in the tourism sector will be invited to present the profile of their region, the promotion strategy of their region, what are the tourist highlights, what are challenges the region faces, what are innovations the region works on, in which domains could the region envision to use satellite-based services or information. As an example of a presentation of a public authority you may refer to [the presentation by Director General APT of the Basilicata Region Tourism Promotion agency, Mr Antonio NICOLETTI](#) who joined a NEREUS-webinar on space4sustainable tourism in December 2022 and illustrated the

needs and challenges of his region but also where he could see opportunities for space-based technologies to promote sustainable tourism.

Benefits for public authorities joining the session:

- Promotion of their region as a location for tourism, highlighting its specificities.
 - Exchanging information on existing platforms and space data relevant to the tourism sector.
 - Exchanging information on data usage with relevance to the tourism sector.
 - Learning more about best practices and success stories of space solutions in the tourism sector.
 - Definition of needs
 - Opportunity to build partnerships/cooperations with other NEREUS partners with the objective to facilitate increased use of space data for the tourism sector.
 - Stimulating model projects in the domain and for the LRA to become a partner of such a model project;
- b. All NEREUS partners are invited **to identify suitable best practices/space solutions for a more sustainable tourism sector**. Please promote the call within your networks and contacts. We are looking for best practices/successful uses cases where space-based data and services are used to bring new innovations to the tourism sector promoting new sustainable practices.

Space data can be a valuable source of information and knowledge for the tourism sector, providing information about weather and climate patterns, natural disasters, and environmental conditions, supporting sustainable tourism practices, providing insights into transportation networks, but also tracking tourist activity and supporting infrastructure development to quote just some examples. By leveraging the power of Earth observation data, tourism businesses and destinations can take better informed decisions and create better experiences for their customers and ultimately contribute to a more sustainable tourism industry.

Satellites provide high-quality data on temperature, precipitation, wind, and other meteorological variables, allowing tourism businesses and destinations to plan for weather-related risks and opportunities. This information can be particularly important for outdoor activities like hiking, skiing, and water sports, where weather conditions can have a significant impact on safety and enjoyment. SENTINEL-imagery can be used to monitor water quality in lakes and rivers, allowing tourism businesses to determine the best locations for activities like swimming, fishing, and boating. Similarly, satellite data can be used to monitor air quality and help tourism businesses and destinations mitigate the effects of pollution.

Besides Earth Observation information and services comprise an added value for tourism marketing efforts. For example, satellite imagery can be used to create high-quality visual content that showcases the natural beauty and unique features of a particular destination. This content can be used to attract new visitors and promote tourism in a sustainable and responsible way.

Satellites can detect storms, hurricanes, and other severe weather events, allowing tourism businesses to plan accordingly and keep their customers safe. Additionally, satellite imagery can be used to assess the extent of damage caused by natural disasters and help with recovery efforts.

Space data can also be used to track tourist activity and help tourism businesses tailor their offerings to customer preferences. For example, satellite imagery can be used to track the movements of large crowds at events like concerts or festivals. Copernicus satellites can track the movement of ships and aircraft, providing valuable insights into transportation patterns and trends. This information can be used to optimize the operations of relevant businesses and transportation services and thus improve the overall customer experience.

Further, space data can be used to support infrastructure development and planning. For example, satellite imagery can be used to assess the potential impacts of new construction projects on the surrounding environment.

For more information on the use of space data for purposes of the tourism sector, please refer to attached presentation by Lucio Bernardini (Basilicata region).

EXAMPLES OF SPACE APPLICATIONS FOR TOURISM

SatCom

It is essential to ensure communications whenever the terrestrial communications are absent or not reliable and to support digital solutions (mountainous, costal, remote areas, ..)

GNSS

- track and trace tourists
- provide information to search and rescue teams
- enable visitor flow monitoring and location-based services to geo-localise points of interest in the tourist maps (for tourists, hikers, bikers, boats, ...)

SatEO

- Monitoring and planning of infrastructure (e.g. buildings, roads, parking lots, airports)
- Monitoring of big events for logistics planning and monitoring (e.g. sports, festivals, big trade fairs)
- Identification of open air “safe” and “unsafe” areas (e.g. parks, squares, big markets, touristic spaces with crowds).
- Data mining: Monitoring of flows, behaviors, interactive services,
- Monitoring weather
- Providing Public Institutions and Visitors with services dedicated to Cultural Heritage for Safeguard (monuments state of conservation, preventive maintenance, ..) and Fruition aspects (Augmented and Virtual reality experiences directly available on personal devices via a dedicated mobile APP).

(Source: Excerpt Presentation Lucio Bernardini “2° European Symposium by Nereus Regions”, slide 11)

EXAMPLES OF SPACE APPLICATIONS FOR TOURISM

URBAN DEVELOPMENT AND CULTURAL HERITAGE

Environmental Monitoring

- Air quality monitoring in urban environments
- Light pollution
- Thermal auditing
- Urban greening
- Urban heat islands

Smart Cities Operations

- Smart streetlights
- Smart waste management

Urban planning and monitoring

- Cultural heritage monitoring
- Informal dwellings
- Real estate
- Surveying and mapping of urban areas
- Urban modelling, 3D modelling, Digital Twins
- Urban planning

(Source: Excerpt Presentation Lucio Bernardini "2° European Symposium by Nereus Regions", slide 12)

2) Thematic Session: **Space data for Agriculture:** - linking space to user needs -

- a. NEREUS partners are invited to identify **interested public authorities with responsibilities in the agriculture sector** to join the session

You may submit half page introducing your best practice and send it at rayazi.nereus@euroinbox.com and mchrysaki.nereus@euroinbox.com by the latest Friday, 30th of June 2023. If wished the NEREUS secretariat will organize short remote sessions in June/July 2023 (max. 1h) to launch the dialogue between public authorities and service providers. This will be an opportunity for both groups to test the approach before the actual event in Basilicata. Interested participants are kindly asked to contact the secretariat by Friday, 30th of June 2023.

The public authorities with responsibilities in the agriculture sector will be invited to present the specificities of their region, their regional strategy as regards sustainable agriculture and challenges for the agricultural sector in their regions, e.g., water scarcity, soil quality.

Benefits for public authorities joining the session:

- Exchanging information on existing platforms and space data relevant to the tourism sector.
- Exchanging information on data usage with relevance to the agriculture sector.
- Learning more about best practices and success stories of space solutions in the agriculture sector.
- Definition of needs

- Opportunity to build partnerships/cooperations with other NEREUS partners with the objective of facilitating increased use of space data for the agriculture sector.
 - Stimulating model projects in the domain and for the LRA to become a partner of such a model project;
- b. All NEREUS partners are invited **to identify suitable best practices/space solutions for a more sustainable agricultural**. Please promote the call within your networks and contacts. We are looking for best practices/successful uses cases where space-based data and services are used to bring new innovations to the tourism sector promoting new sustainable practices.

Space data, and specifically Copernicus data provides valuable information about soil moisture and vegetation cover, monitoring crop diseases and pests, supporting precision agriculture practices, and assessing the impact of climate change on agricultural systems. By leveraging the power of Earth observation data, farmers and other agricultural stakeholders can take better informed decisions and optimize their management practices to maximize yields and minimize potential environmental impacts.

Precision agriculture contributes to more sustainable agricultural practices. Copernicus data can be used to create detailed maps of fields, allowing farmers to identify areas of the field that may require different management practices. For example, satellite data can be used to create maps of soil properties, which can be used to inform decisions about fertilization and other management practices. Copernicus satellites can detect changes in vegetation cover and assess the health and density of crops, providing insights into potential yield and allowing farmers to optimize their management practices. Additionally, satellite data can be used to measure soil moisture, which is critical for determining the optimal timing and frequency of irrigation.

Climate change adaptation is another important topic. Copernicus data can be used to monitor changes in temperature, precipitation, and other environmental variables, allowing farmers to adjust their management practices in response to changing conditions. Additionally, satellite data can be used to assess the potential impacts of extreme weather events, such as droughts or floods, on crop yields and other agricultural systems.

For more information, please refer to the presentation by Lucio Bernardini and the [Copernicus4regions collection](#) of 99 user-stories, chapter AGRICULTURE, FOOD, FORESTRY AND FISHERIES (see page 36).

EXAMPLES OF SPACE APPLICATIONS FOR AGRICULTURE

ENVIRONMENTAL MONITORING

- [Carbon capture & content assessment](#)
- [Environmental impact monitoring](#)

NATURAL RESOURCES MONITORING:

- [Biomass monitoring](#)
- [Crop yield forecasting](#)
- [Soil condition monitoring](#)
- [Vegetation monitoring](#)

OPERATIONS MANAGEMENT

- [Asset monitoring](#)
- [Automatic steering](#)
- [CAP monitoring](#)
- [Farm machinery guidance](#)
- [Farm management systems](#)
- [Field definition](#)
- [Livestock wearables](#)
- [Pastureland management](#)
- [Precision irrigation](#)
- [Variable rate application](#)

WEATHER SERVICES FOR AGRICULTURE

- [Climate services for agriculture](#)
- [Weather forecasting for](#)

FORESTRY

[Environmental monitoring](#)

- [Biomass monitoring](#)
- [Deforestation/degradation monitoring](#)

[Natural resources monitoring](#)

- [Forest Inventory monitoring](#)
- [Forest vegetation health monitoring](#)
- [Illegal logging monitoring](#)

[Operations management](#)

- [Automatic steering](#)
- [Forest asset management](#)
- [Forest exploitation certificati](#)
- [Forest machinery guidance](#)

(Source: *Excerpt Presentation Lucio Bernardini "2° European Symposium by Nereus Regions", slide 7*)

[Examples for tourism and agriculture see EUSPA Market Report 2022](#)