



**Bringing
the benefits
of space uses
to regions
and their citizens**

Key Note
NEREUS: European Regions Partner with the Atlantic

by Roya Ayazi, NEREUS-Secretary General
ATLANTIC FROM SPACE
WORKSHOP, 23rd January 2019, Southampton, UK

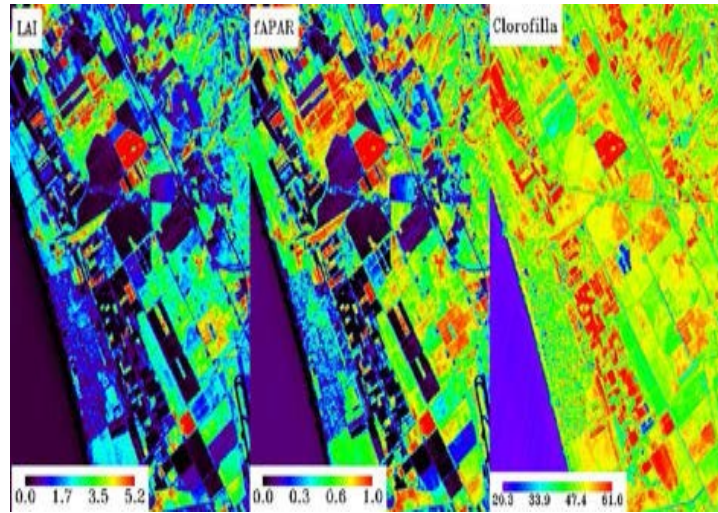


POLITICAL
DIALOGUE

INTERREGIONAL
COLLABORATIONS and
Partnerships

New Trends/
PUBLIC
OUTREACH

Using Space



Data from satellite imagery

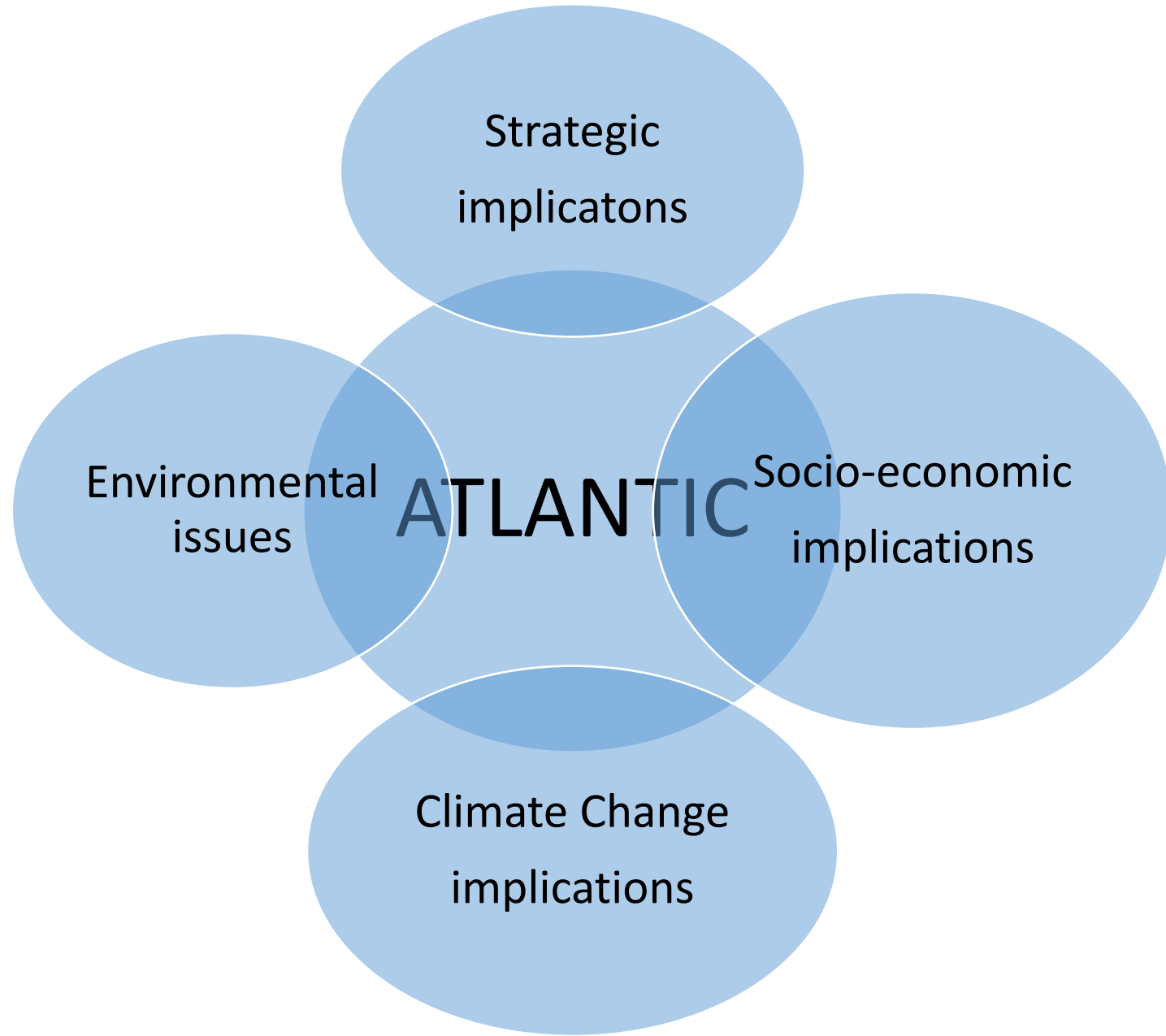


Useful Information for
people, companies and
organisations



How to develop a common approach to define needs and a user profile profile for a region with this diversity?





- The Atlantic has an important
 - ⇒ Strategic Dimension
 - It is the **second largest** of the world's five oceans
 - It **connects continents and people**: Europe, Africa, the Arctic, North and South America and the Southern Ocean
 - It is the sea between USA and Europe
 - **52 different nations** have shorelines along this ocean
 - Key for **maritime Transport**: Major Ports and Water ways



- The Atlantic has an important
 - ⇒ Dimension for Global Climate Change
 - Tropical cyclones (hurricanes),
 - Oceanic changes and global warming have impacted marine ecosystems and fishing grounds in many countries, in particular African countries

- The Atlantic has an important
 - ⇒ Economic and Growth Dimension (Blue Economy in the Atlantic Arc, Blue Growth)
 - ⇒ Atlantic Arc distinguishes itself through mix of maritime activities





- The Atlantic has an important
 - ⇒ Dimension for Life on our planet and many environmental issues:
 - Endangered marine species,
 - Overexploitation by unsustainable fisheries,
 - Pollution by maritime transport, discharges, offshore drilling, oil spills;
 - Industrial waste and municipal sewage pollution

⇒ Sentinel Services are **global** but
definition of needs is **local and regional**

- Access territorial challenges and natural assets of the Atlantic
Access situation as regards of delivery of basic public services to
citizen
- Access EU-Directives and EU-environmental legislation



- **NEREUS and Copernicus Uptake**
 - **Stimulate** exchange and partnerships conferences, seminars, workshops,
 - **Organize informative training sessions** for LRAs **Promote** best practices, knowledge and know-how via interregional cooperation
 - Develop **model projects** targeted to LRAs at EU level
 - Publish brochures, publications, position papers...
 - Explore synergies with regional policies and structural funds

Definition of needs starts with dialogue and reflection

- Awareness raising on the potentials
- Understanding regional challenges and administrative responsibilities
- Showing to Users what exist and how it works
- Matching and connecting both



Added Value of Interregional Collaborations

Experiences on NEREUS-platform showed that

interregional collaborations at a European scale

are a vital tool to broaden and improve Copernicus uses:

- ⇒ critical mass,
- ⇒ knowledge, experience, best practice sharing,
- ⇒ pooling of resources, avoid duplication of efforts
- ⇒ collective problem-solving
- ⇒ collective experiencing benefits and added value
- ⇒ enhance visibility of regional/local stakeholders, their activities and capabilities

Three network partners have a coastline with the Atlantic:

- Brittany
- Nouvelle Aquitaine
- Azores



Governo dos Açores



Copernicus4 Regions

Copernicus4Regions Initiative



Focus of user-
experiences of public
user – local and regional
authorities

www.nereus-regions.eu/Copernicus4Regions

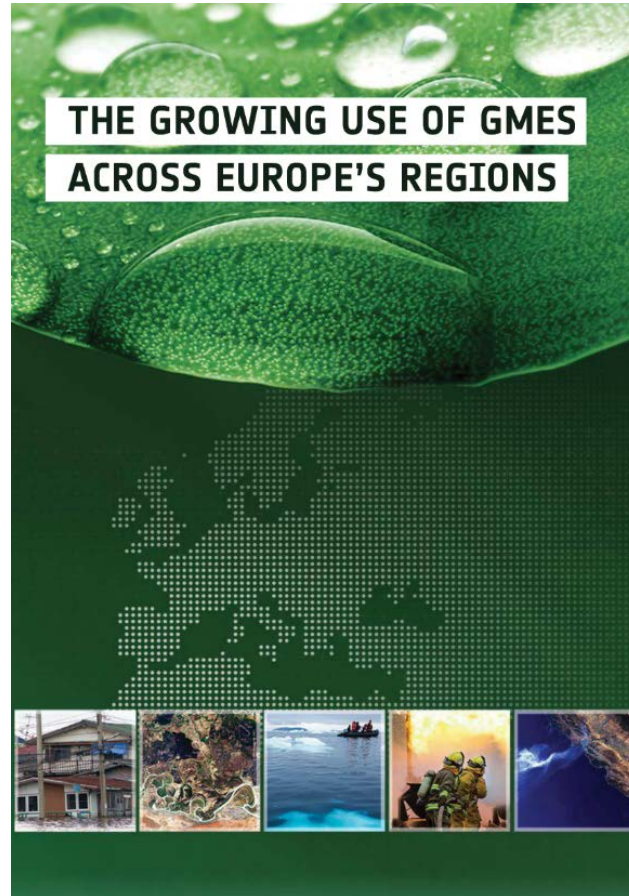
#Copernicus4Regions

In partnership with
EC (DG Growth) and ESA



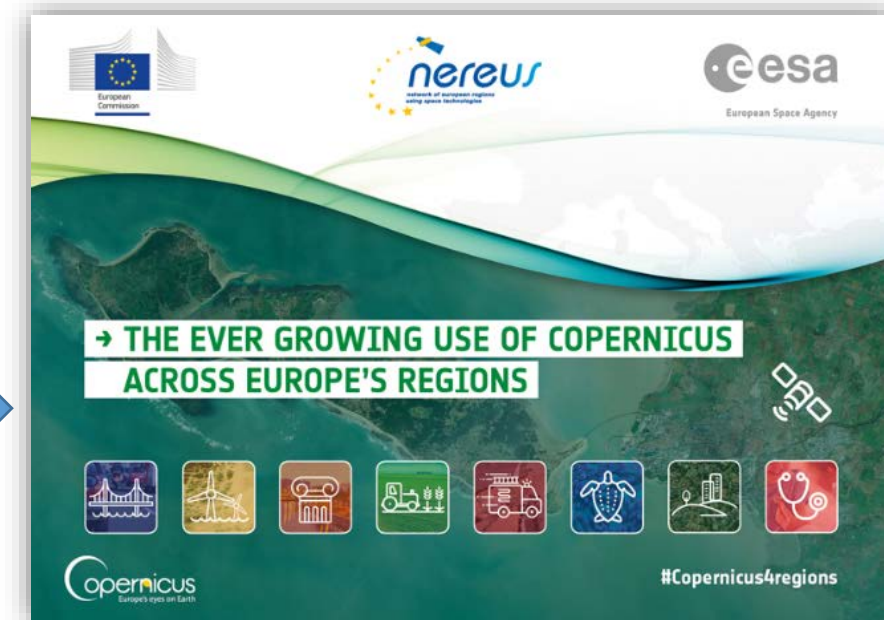
Copernicus- User-Uptake at regional level

2012



In partnership
with ESA

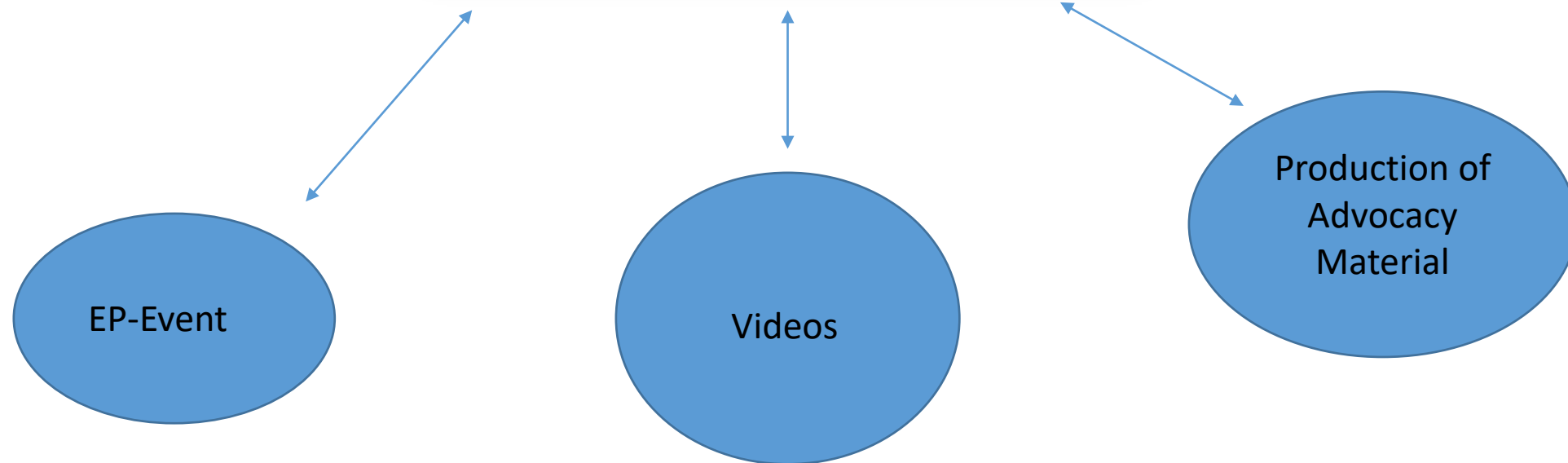
2017



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Copernicus4 Regions





CALL FOR ABSTRACTS ACROSS EUROPE

Authors from Brittany:	6 contributions
Authors from Nouvelle Aquitaine:	1 contribution
Authors from Azores:	2 contributions



Brittany



LOCAL COPERNICUS DEMONSTRATOR IN BRITTANY

A working group to democratize data and services from Copernicus and make Brittany a territory for experimentation and demonstration of space applications.



First meeting of the working group at the Regional Council of Brittany (Brest, Lannion, Lorient, Rennes, Vannes)



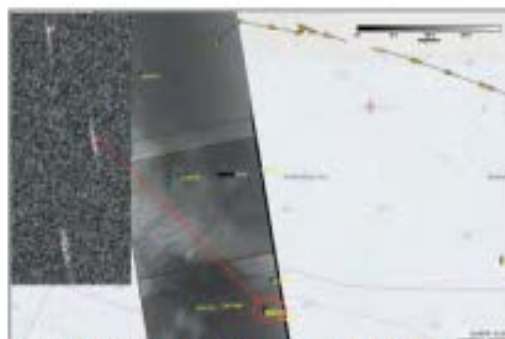
An example of a demonstrator on GeoBretagne showing Copernicus product (imperviousness) compared to local land-use.
Credit: Contains modified Copernicus Sentinel data [2015]

Many public authorities still have rather low expectations for space applications because of a fast-moving landscape. They ask for a place to discuss use cases at their own pace, using their business vocabulary in order to build their own strategy that will combine remote sensing with their daily applications."

Fabrice PHUNG (GeoBretagne)

SATELLITE-BASED MARITIME SURVEILLANCE SERVICES IN EUROPE

Since its creation, the operational VIGISAT centre has kept reinventing maritime surveillance by satellite.



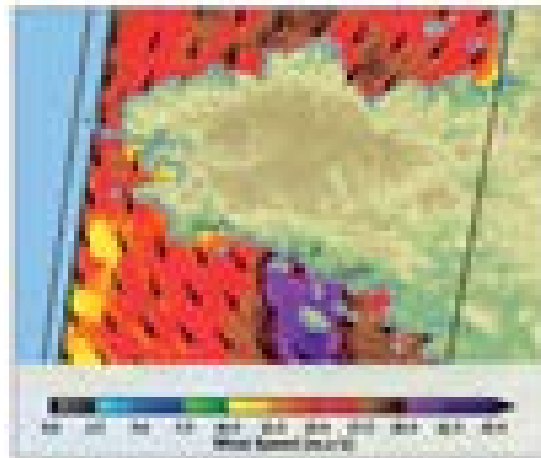
On 06/10/2015, VIGISAT supported FRONTEX EUROSUR services. A SAR image acquired, processed and analysed by VIGISAT enabled to relocate and rescue 370 people aboard three rubber boats off Libyan Coast (source FRONTEX)

“Forests are our planet's green lung, but oceans are its blue heart. It is now up to all of us to keep this blue heart beating.”

Karmenu Vella, European Commissioner for Environment, Maritime Affairs and Fisheries

TRACKING STORMS AND HURRICANES USING SAR IMAGES

Since the launch of the constellation, Sentinel-1 keeps monitoring metocean extremes over European and worldwide seas.



Surface wind measurement in Brittany during the Ana storm - 11/12/2017 (from Sentinel-1 - VISUMAT station).

(Credit) Copernicus monitoring Copernicus Sentinel data (ESA/ESA)

“ Tropical cyclones represent 20% of the damage and casualties caused by natural hazards, when all phenomena are taken into consideration”

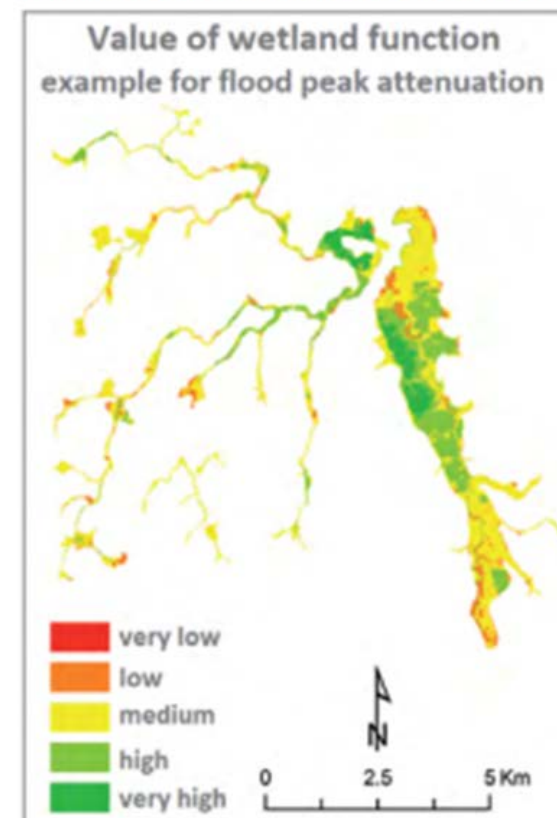
Philippe Caroff, Head of the cyclone forecast centre at Météo-France

WETLAND FUNCTIONAL ASSESSMENT

Hydrological, biogeochemical and ecological wetland functions can be assessed using Earth Observation data and multi-criteria analysis to meet the challenges of wetland management and conservation.

“This application has transformed the way we manage the public land of Sougéal marshes for biodiversity and conservation issues.”

Aurélien Bellanger, Communauté de Communes du Pays de Dol et de la Baie du Mont-Saint-Michel



Map of wetland functions at the catchment scale. Example for the Flood peak attenuation; Couesnon marshes, Brittany, France.

Nouvelle Aquitaine



SATELLITE IMAGERY FOR IMPROVED COASTAL MANAGEMENT

Copernicus satellite imagery provides a new paradigm in earth observation thanks to regular, high quality imagery and accurate satellite derived products.



Coastline detection and change analysis from 2013 to 2015 in Pavillon Royal beach, Bidart, Basque country, south-west France.

“The use of satellite data to enhance our knowledge and monitoring of marine ecosystems will contribute to the regional blue growth strategy we are currently launching.”

*Marie-Agnès Dupouey,
Blue Growth at Région Nouvelle-Aquitaine*

Azores



SAVE THE DATE | June 6-7 2019

Copernicus Marine for Outermost Regions

In Azores, Faial Island, Horta city



#CMEMS4OR

See you in 2019



HAPPY NEW YEAR



THE POTENTIAL OF A PRE-COMMERCIAL PROCUREMENT APPROACH IN EARTH OBSERVATION

A Horizon 2020 funded project aimed at developing customised solutions based on Copernicus Downstream Services for Marine Monitoring and Security.

“ Marine-EO will provide relevant new tools for monitoring one of the biggest EEZ in Europe: The Azores archipelago.”

*Filipe Porteiro,
Regional Director of Maritime Affairs*



The map shows the coastal erosion susceptibility status in Santa Maria Island (Azores) and aims to provide comprehensive knowledge of the potential impact on Azores Islands of different natural disasters as well as identify assets at risk. The map was produced on 22/12/2015 by GEOAPINOKISIS (EL) – NOA (EL) – CIMA (IT) – ALTAMIRA (ES) under the service contract nr. 259811 of the EC.
Credit: Contain Copernicus Sentinel data [2015]

SENTINEL-BASED AZORES REGIONAL FOREST INVENTORY

The Azores Regional Forest Inventory is a fundamental regional tool for supporting forest management and spatial planning policies in the Azores.



The woody invasive species *Pittosporum undulatum* is a major threat for nature conservation in the Azores and requires appropriate management (about 24 thousand hectares). Source: DRRF

“The systematic use of Copernicus Sentinel data will improve significantly the canopy classification accuracy and update frequency of the Azores Regional Forest Inventory.”

*Anabela Isidoro,
Regional Director at DRRF*

REGIONAL WORKSHOPS



28 September 2015
Ponta Delgada, Azores (PT)
Land and Marine planning and management
using Sentinel data. Small Oceanic Islands as a Model



#1

#2

20 October 2015
Milan, Lombardy (IT)
A Trip from Mountains to Valleys:
Copernicus satellites as "sentinels"
of environmental and economic changes



12 November 2015
Munich, Bavaria (DE)
Copernicus Data and Services
to manage Natural Resources



#3

FINAL EVENT

28 June 2016
European Parliament, Brussels



POLITICAL

- lack of **political will (mandate)** / support to use EO data
- low awareness at political level of the **social and strategic value** of EO data

ECONOMIC

- the cost / effort of **processing** satellite data to turn it into useful information is high
- the cost / effort to **procure** space-based services is high
- lack of awareness on the **potential uses** of satellite data

SOCIAL

- High barriers for **changing working practices** within public administrations
- skepticism about the **continuity / reliability** of satellite data
- doubts / skepticism about the **real gains** of using satellite data when compared to the efforts required

TECHNOLOGICAL

- insufficient **technical infrastructure** in public administrations
- technological issues in **accessing** satellite data
- Technological issues in **processing** satellite to transform it into useful information
- lack of **available solutions** fitting the needs of LRAs

POLITICAL

- **Space Strategy for Europe**– puts the user at its core - clear recognition of the importance of LRAs to improve user uptake

ECONOMIC

- **Pre-Commercial and Innovative Procurement** – funding R&D to develop innovative solutions for public user needs
- **Toolbox by EC: Copernicus Accelerators / Incubators**
- **eoMall** – developing an online marketplace for the EO service sector

SOCIAL

- **Network of Copernicus Relays and Academies**
- **Copernicus Information and Training Sessions**
- **Copernicus Information Material**
- **Practical Handbook for Regional Authorities**
- **NEREUS, EURISY, EARSC activities**

TECHNOLOGICAL

- **Copernicus DIAS** – facilitating access to Copernicus data and information from the Copernicus services (processing resources, tools, ecc.)



THANK YOU!

Roya Ayazi
rayazi.nereus@euroinbox.com