

CLMS activities for Coastal Zones



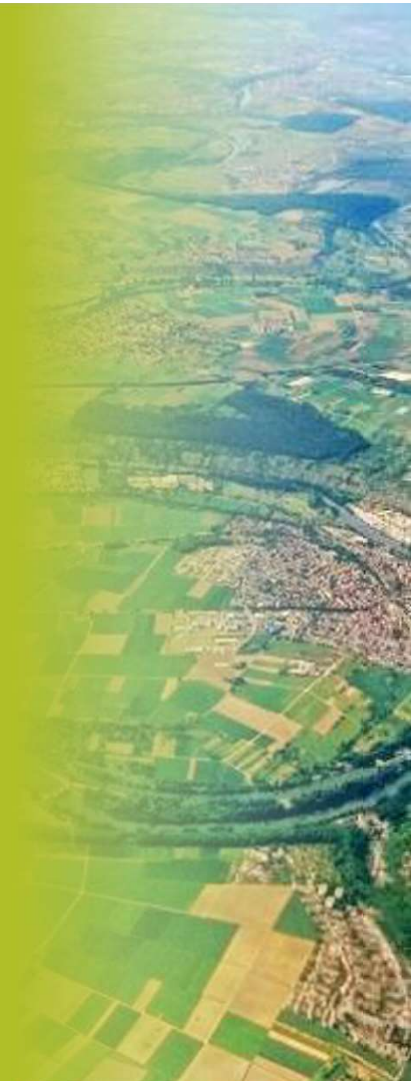
Land Monitoring

EMODnet-CMEMS Thematic Workshop on Coastal
Issues

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Matteo Mattiuzzi
European Environment Agency

matteo.mattiuzzi@eea.europa.eu





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Why do we need to monitor coastal zones?

High level of pressures -> on a very limited space:

- Approximately 40 % of the EU's population lives within 50 km of the sea;
- Approximately 40% of EU's GDP is generated in maritime regions;
- 75% of EU's foreign trades is conducted by sea.

- Only 13% of coastal species are in favourable conservation status
- 73% of the coastal habitats show bad or inadequate conservation status
- 80 % of marine species and habitats and 100 % of marine ecosystems being classified as 'unknown' status (MSFD)

EEA Report | No 12/2013

Balancing the future of Europe's coasts
— knowledge base for integrated management

ISSN 1725-9177



European Environment Agency 

European Environment Agency 

 European
Commission

 Copernicus
Europe's eyes on Earth



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Coastal sustainability issue

Coastal development at expense of natural systems that normally act as buffer between the sea and the land

... leads to

Conflict between protecting socio-economic activity and sustaining the ecological functioning of coastal zones in Europe

Sustainable management / Evidence based decision making

Coastal zone monitoring is essential for a sustainable coastal zone management that allow socio-economic development while sustaining the ecological and protective functioning of coastal zones.



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pan-European and local portfolio overview

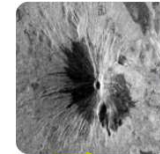
HR images
(10-20m pixels)



VHR images
(2.5m pixels)



SAR
(SRTM, S1)



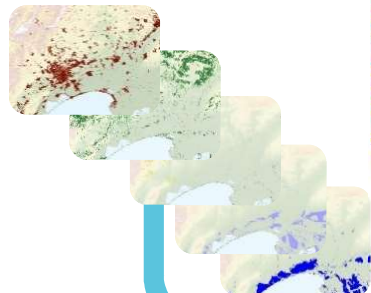
EU-DEM
2012



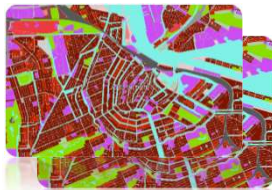
CLC & CLCC
1990-2000-06-12-18



HRLs
2006-09-12-15-18



UA
2006-12-18



RZ
2012-18



N2K
2006-12



EU-Hydro
2012

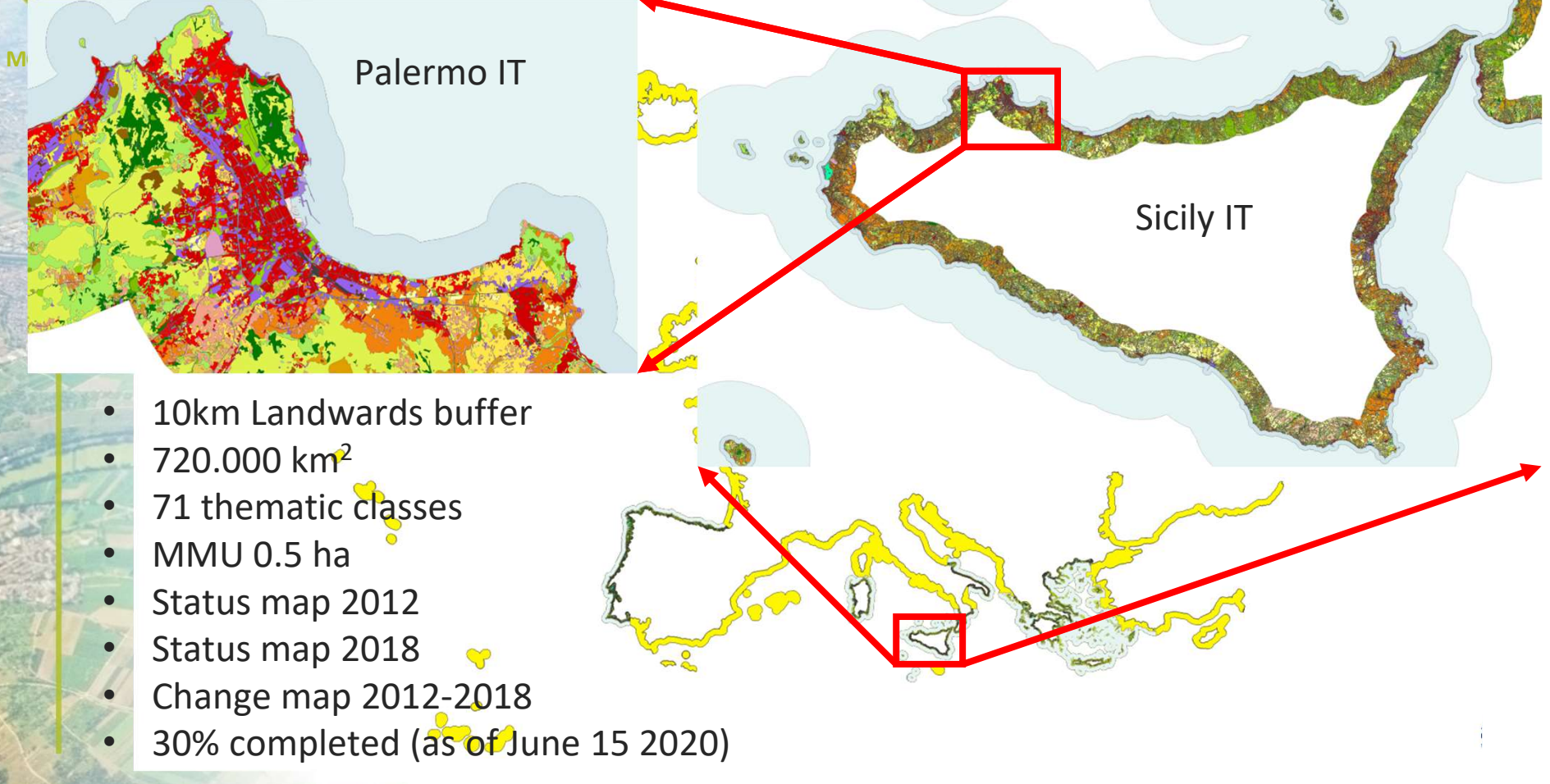


CZ





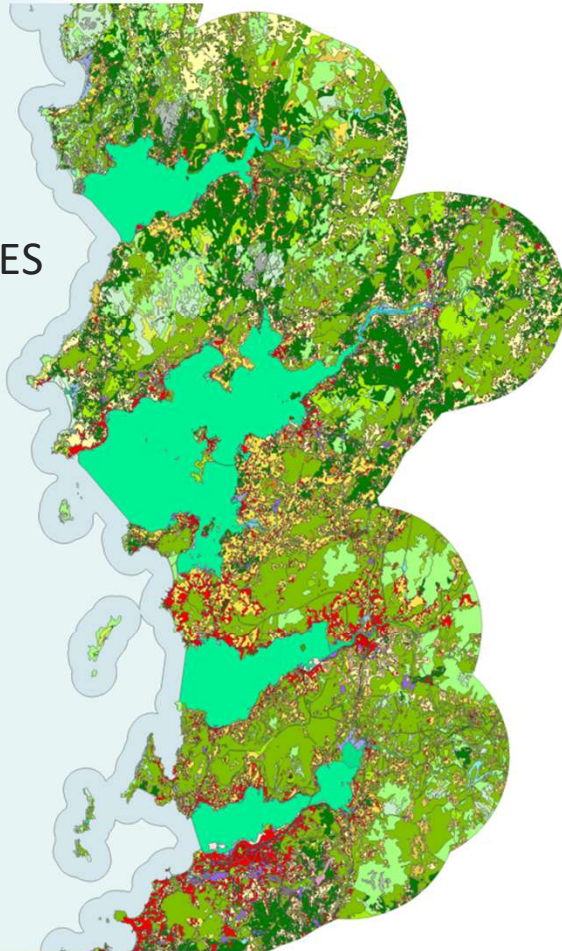
Thematic hotspot mapping: CZ LCLU



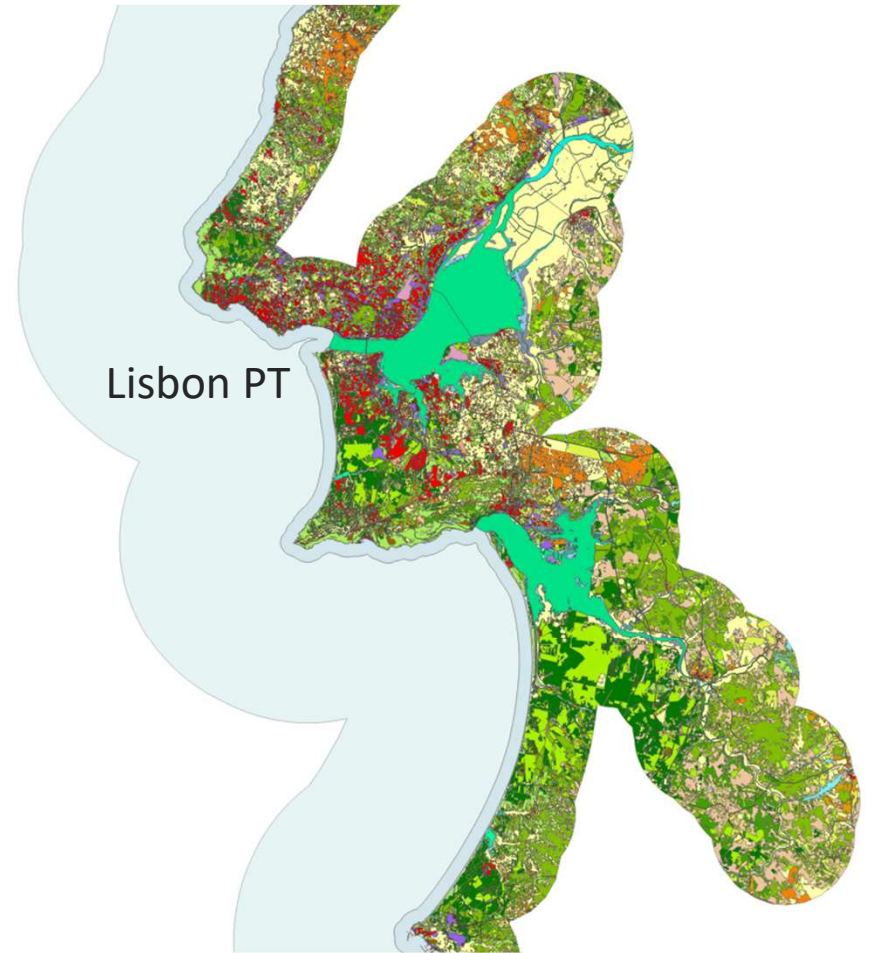


LCLU examples – Land / See nexus

Westcoast ES



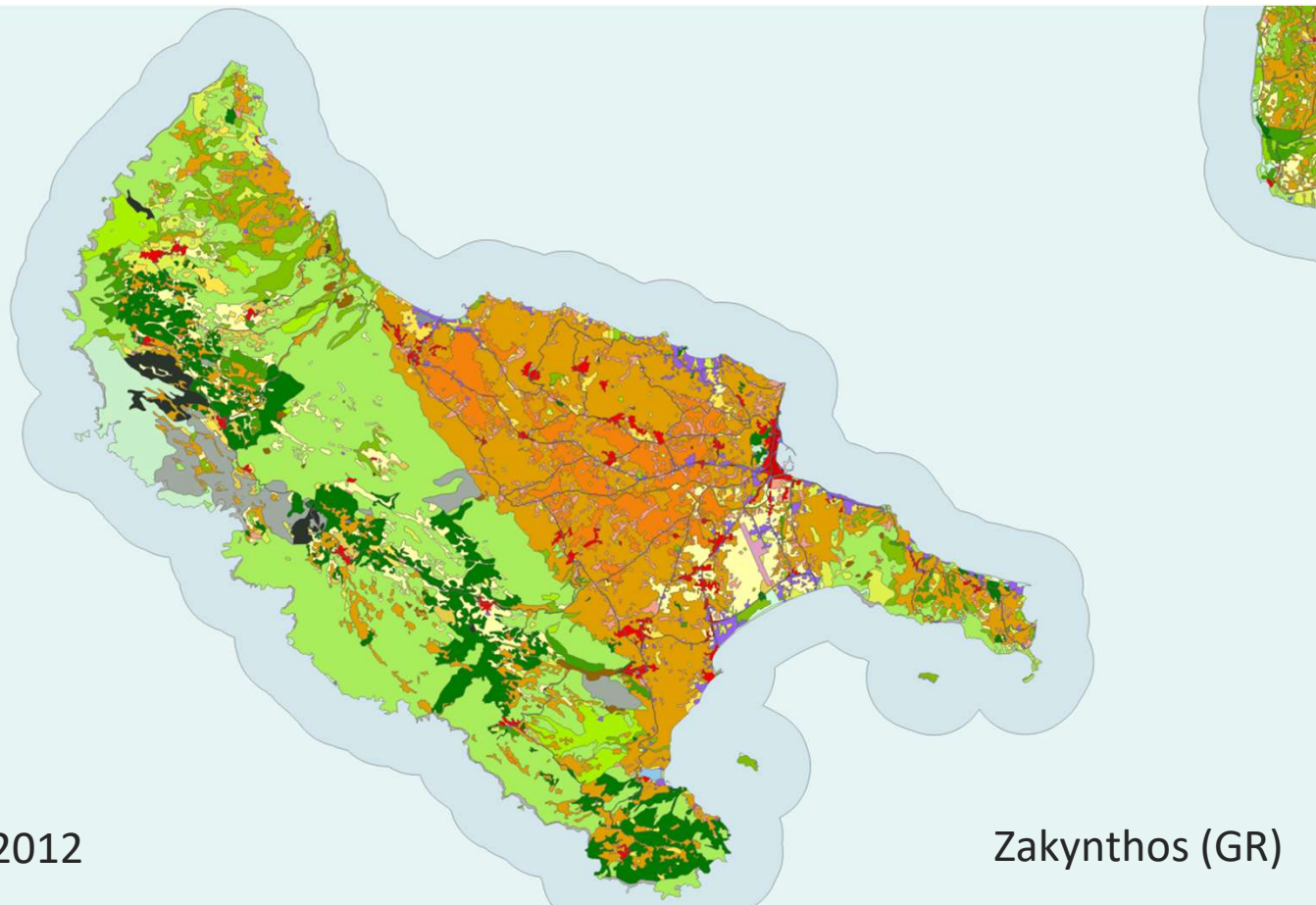
Lisbon PT





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LCLU examples - Fire Damage and Recovery



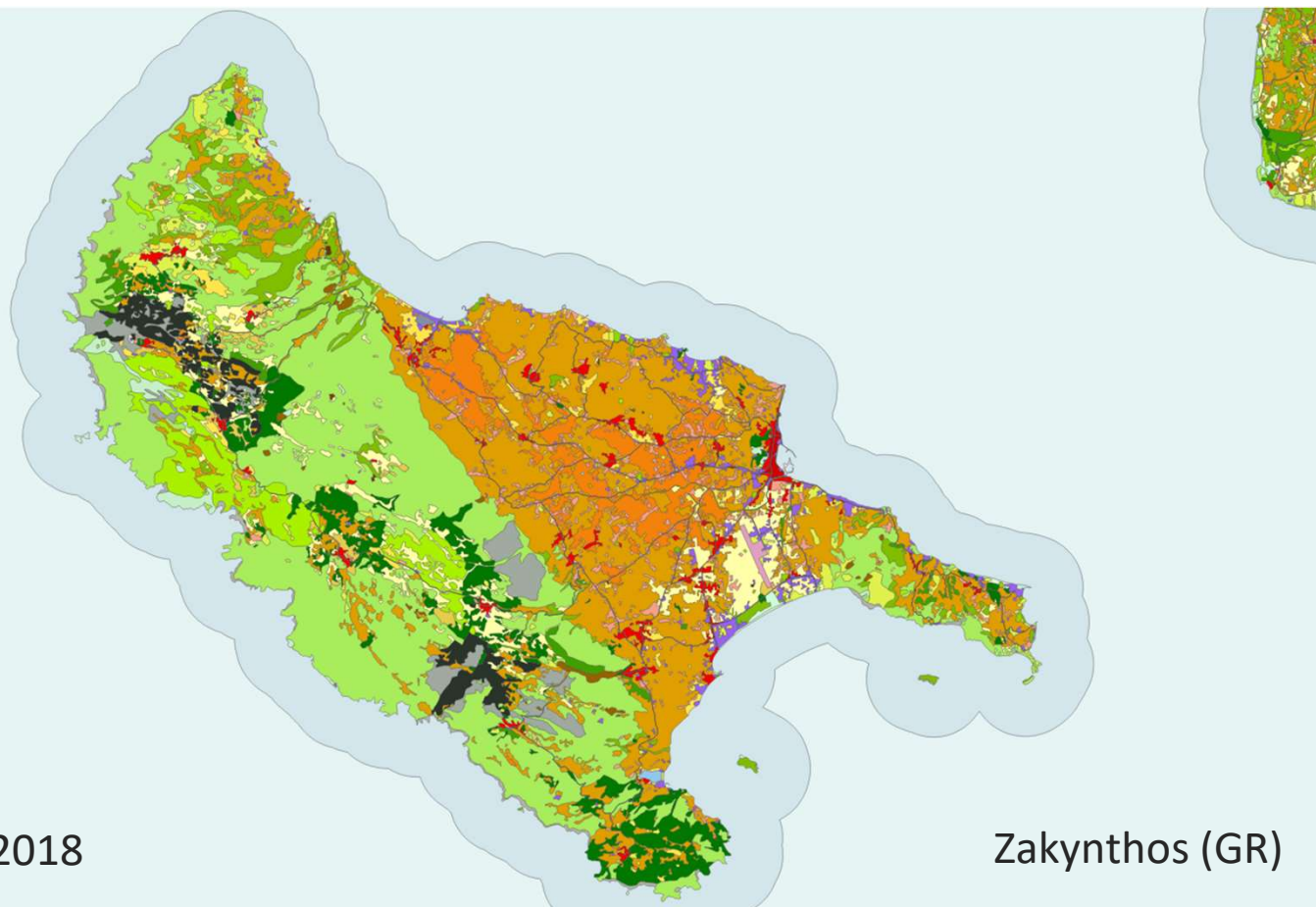
Status map 2012

Zakynthos (GR)



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LCLU examples - Fire Damage and Recovery



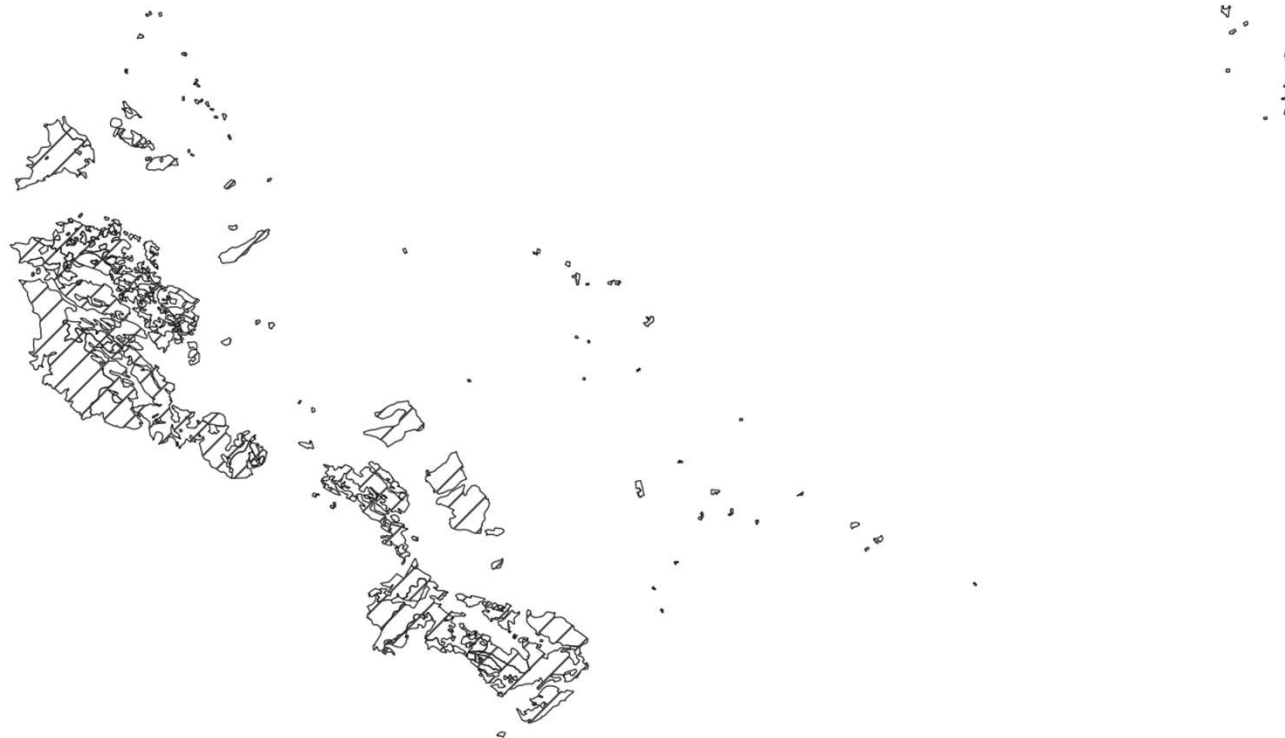
Status map 2018

Zakynthos (GR)



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LCLU examples - Fire Damage and Recovery



Change map 2012-2018

Zakynthos (GR)

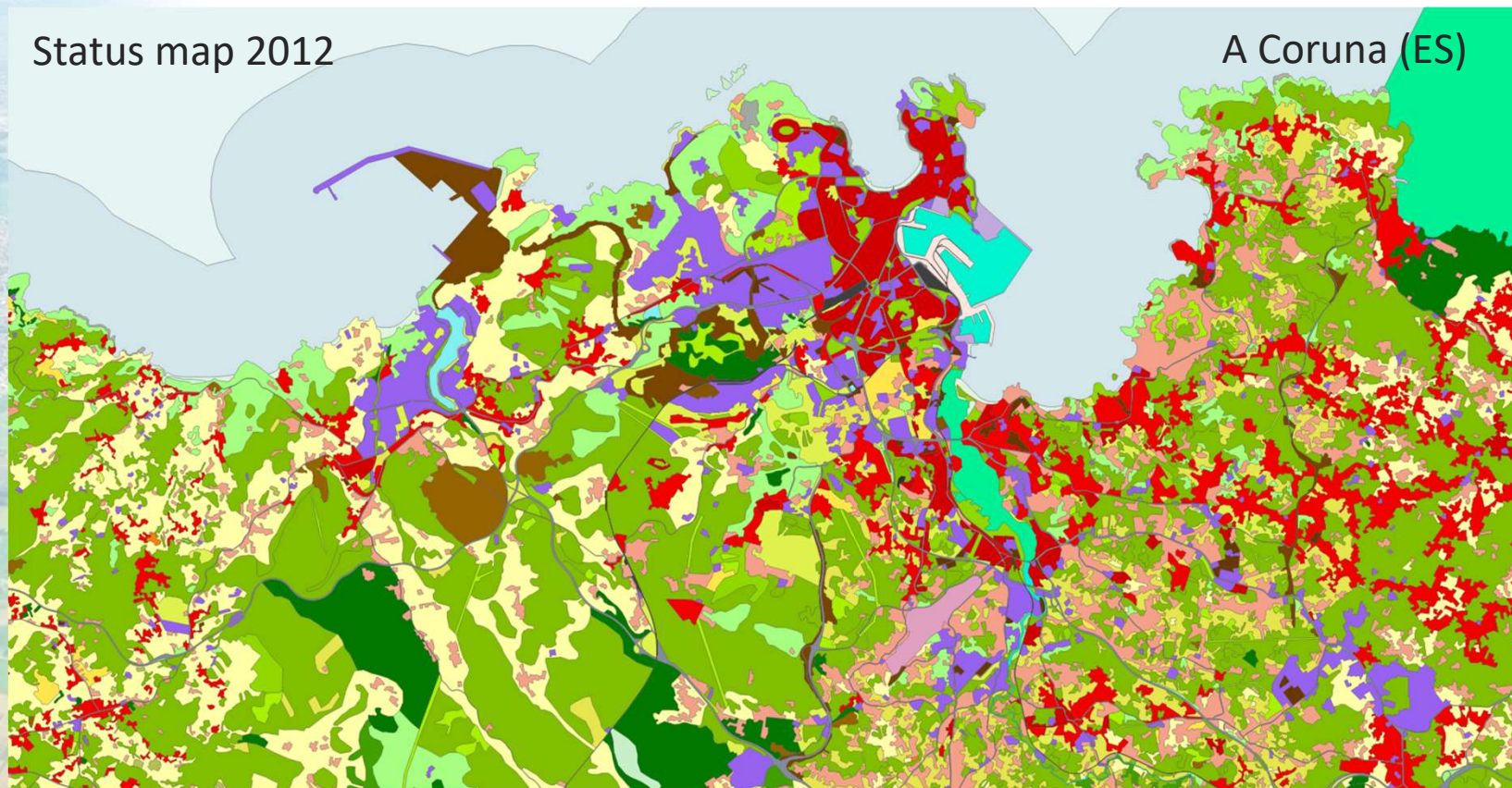


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LCLU examples - Infrastructure

Status map 2012

A Coruna (ES)



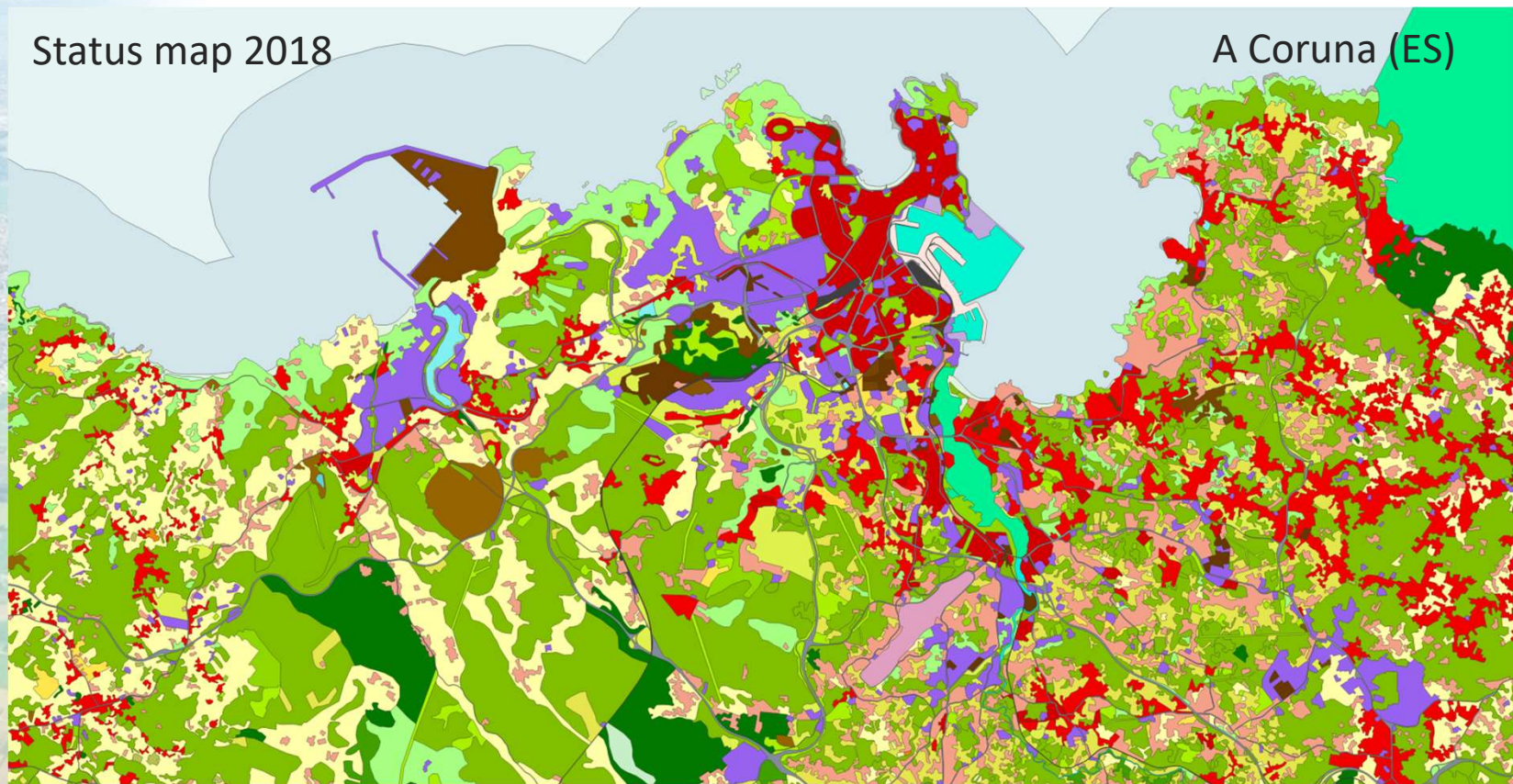


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LCLU examples - Infrastructure

Status map 2018

A Coruna (ES)



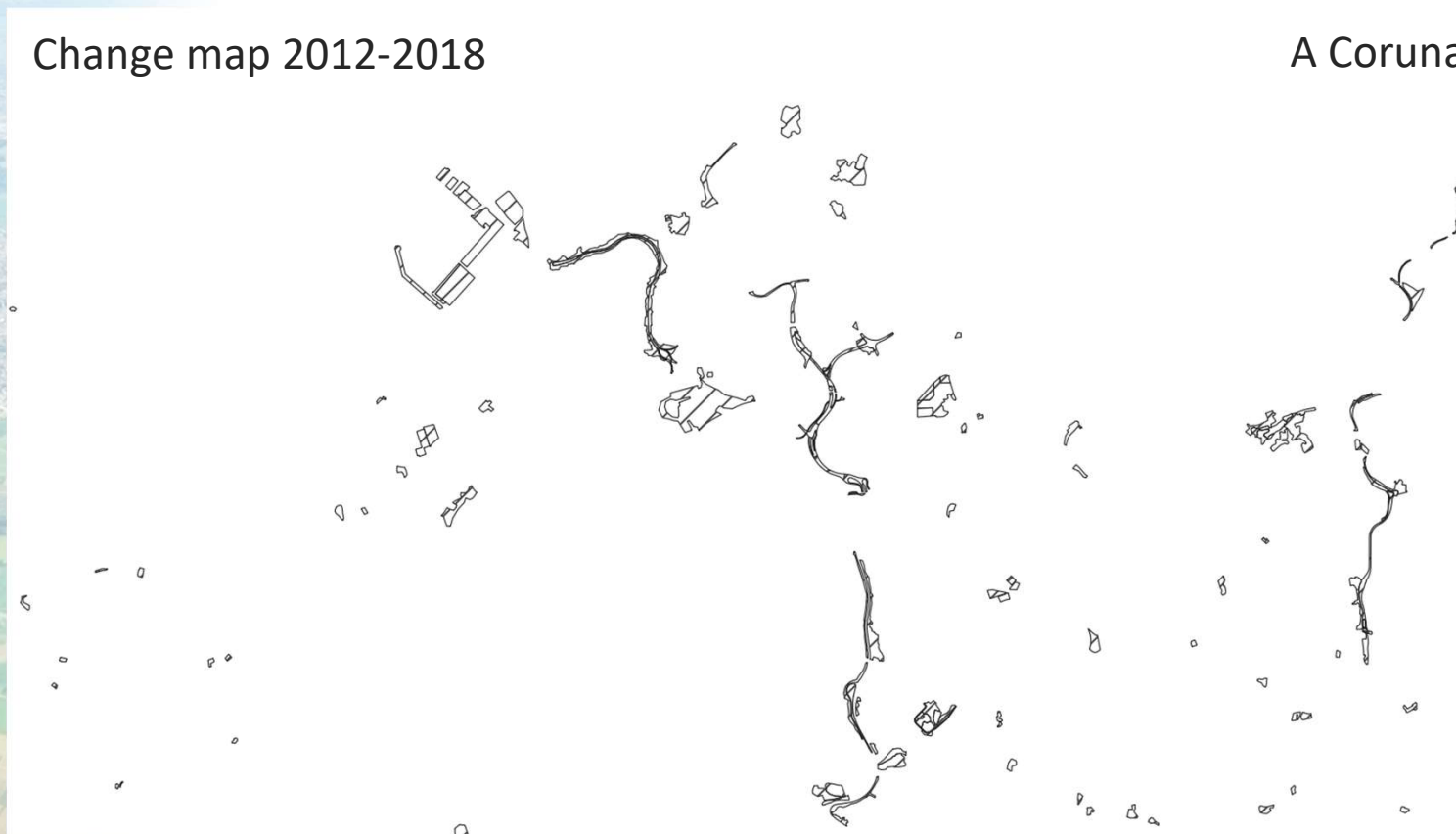


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LCLU examples - Infrastructure

Change map 2012-2018

A Coruna (ES)





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Mid and long term activities (2021 onwards)

- **Comprehensive monitoring of CZ requires to coordinated action between CMEMS and CLMS:**
 - CMEMS: open ocean -> coastal waters
 - CLMS: low dynamic -> high dynamic phenomena
- **Two Tenders are currently in preparation (*planned start early 2021*)**
 1. Mapping coastal protective structures
 2. Shoreline dynamics:
 - Tidal dynamics
 - Erosion/accretion
 - SLR at the coast

NRT River discharge monitoring by means of EO and in situ (connected to EU Hydro dataset)
- <https://land.copernicus.eu/local/coastal-zones>



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Marine / Land Copernicus Services:

Longer term perspective on Coastal Zones

A coordinated approach for service implementation. MOI and EEA could take actions to this end in the following fields:

- ✓ the monitoring of user requirements and feedbacks;
- ✓ the organization of Copernicus events, workshops and training;
- ✓ the assessment of marine & land services requirements for observations and for research priorities in the coastal area;
- ✓ the assessment of the services impact in the environmental policies and business areas;
- ✓ the planning and reporting to the Copernicus program governance on marine and land services.

A coordinated approach for improving the service offer to users:

- Characterization of coastal zones;
- Modelling and forecasting of the coastal zone;
- River monitoring and forecasting;
- Climate change and coastal vulnerability.
- Access to Data & Information through DIAS / WEKEO



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Thank you !



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Copernicus
Europe's eyes on Earth

LAND.COPERNICUS.EU
MARINE.COPERNICUS.EU

Copernicus Sentinel 2

