



Land Monitoring

# The Copernicus Land Monitoring Service (CLMS): Underpinning EU policies

Copernicus4Regions Info Session

20.01.2020, Brussels

European Parliament

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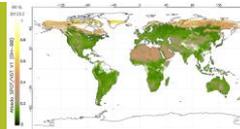


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# Copernicus Land Monitoring Service (CLMS)



**Systematic Biophysical Monitoring**



**Land Cover & Land Use mapping**



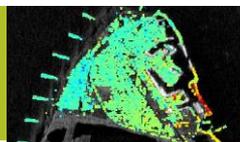
**Thematic hotspot mapping**

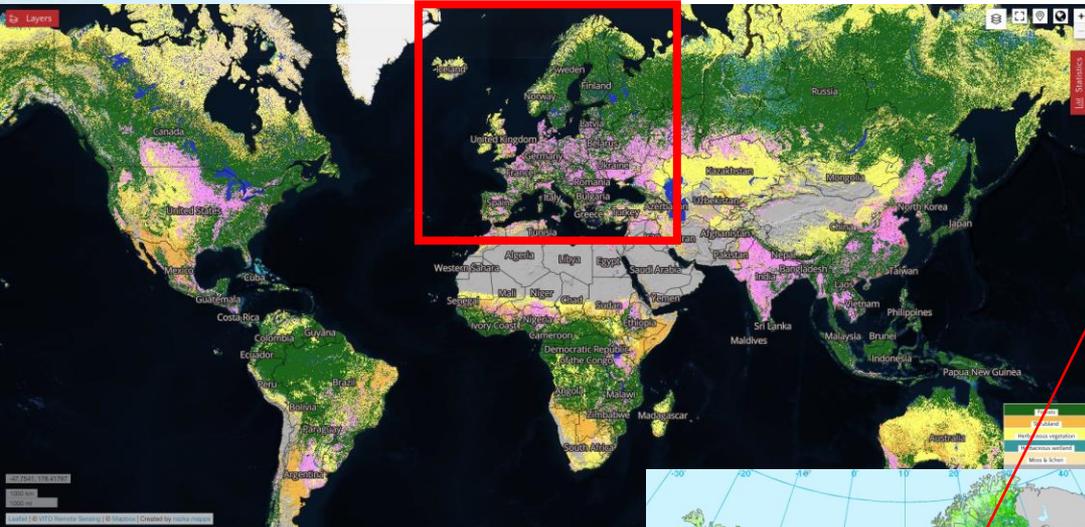


**Reference data**



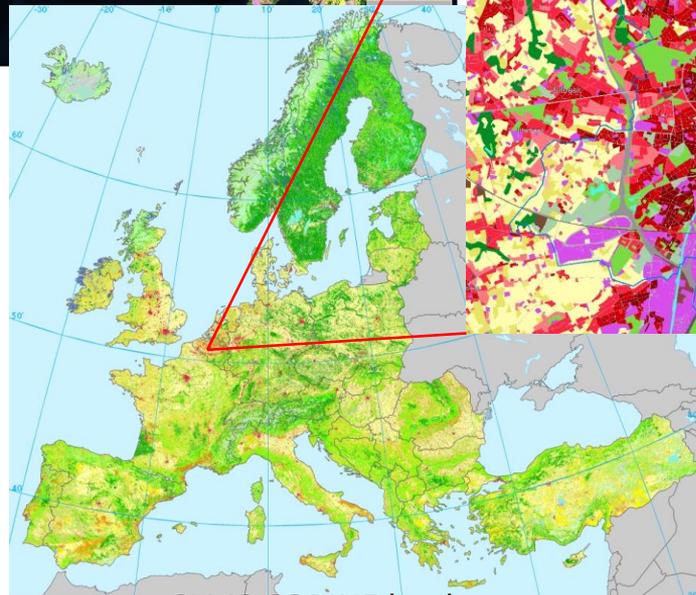
**Ground Motion service**



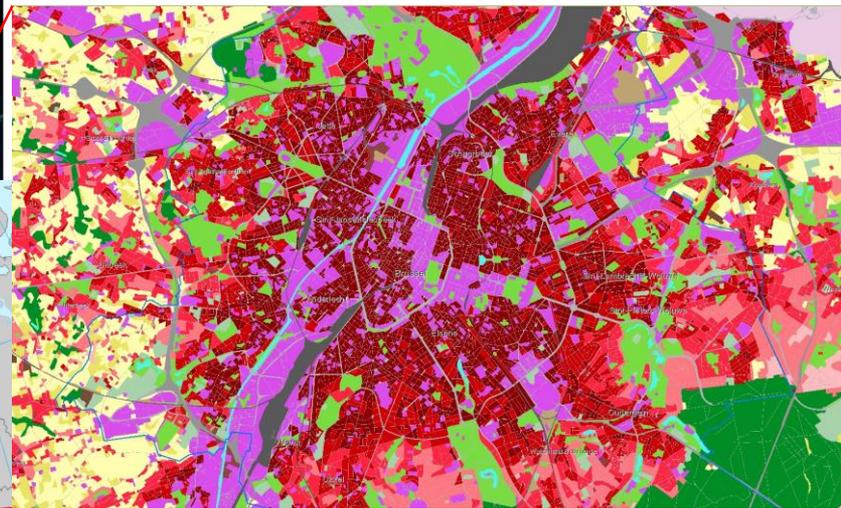


CLMS global land cover

Copernicus land  
Monitoring:  
Coherent land cover  
Information from  
global over  
Pan-European to  
Local scales



CLMS CORINE land cover



CLMS Urban Atlas

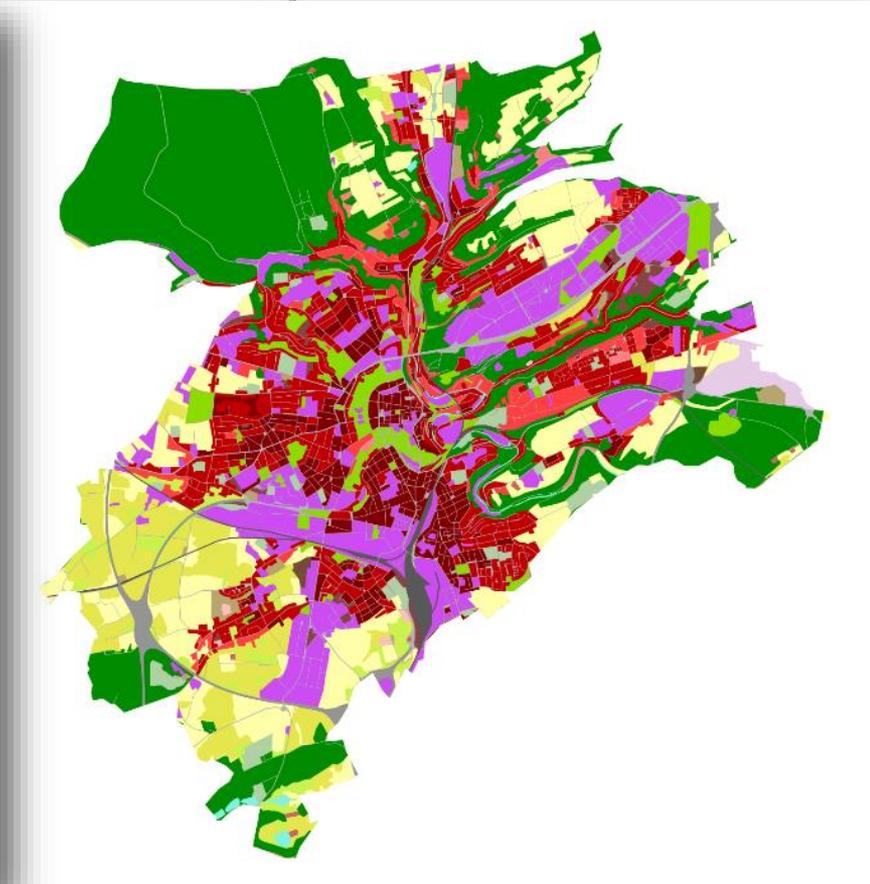
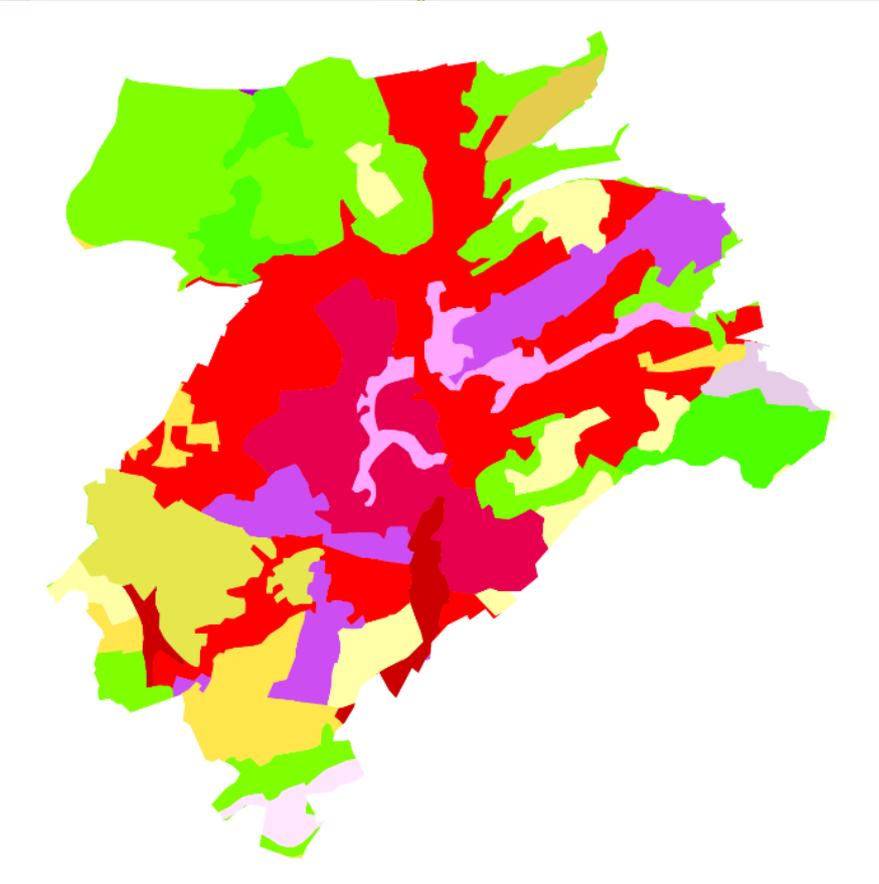
# Copernicus CLMS





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# From pan-European (CLC) to hotspot (Urban Atlas) mapping



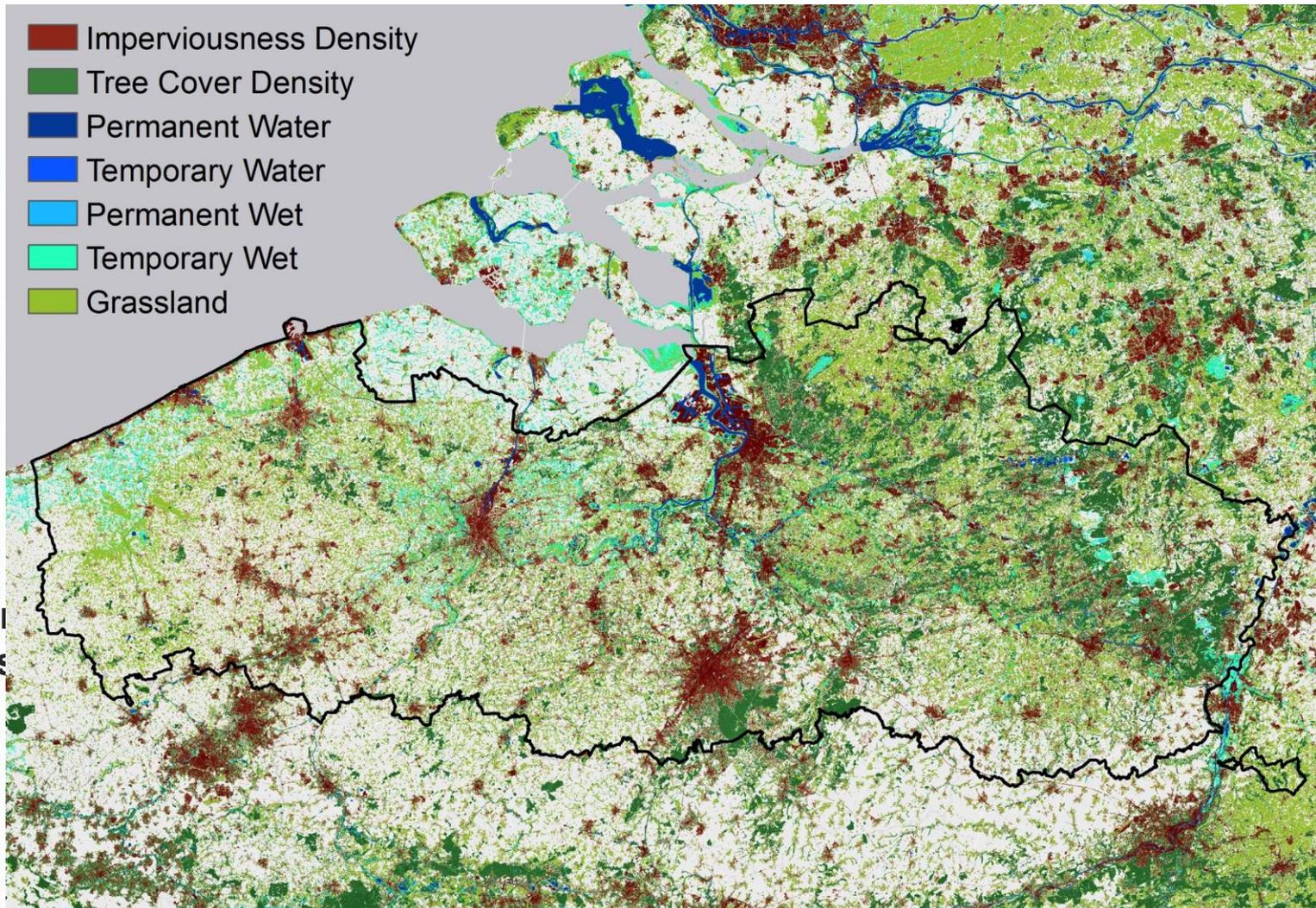
Luxembourg



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- Imperviousness Density
- Tree Cover Density
- Permanent Water
- Temporary Water
- Permanent Wet
- Temporary Wet
- Grassland

High  
Resolution  
Layers 2015  
on Land Cover  
characteristics  
(20x20 meter  
resolution)





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# Addressing the 7<sup>th</sup> Environmental Action Plan...



**1. Protect, conserve and enhance the EU's natural capital**

**2. Turn the EU into a resource-efficient, green and competitive low-carbon economy**

**3. Safeguard EU citizens from environment-related pressures and risks to health and wellbeing**

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## ... and the SDGs





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## Drivers of land take and degradation

Settlements,  
commerce,  
industry,  
infrastructure

Food demand

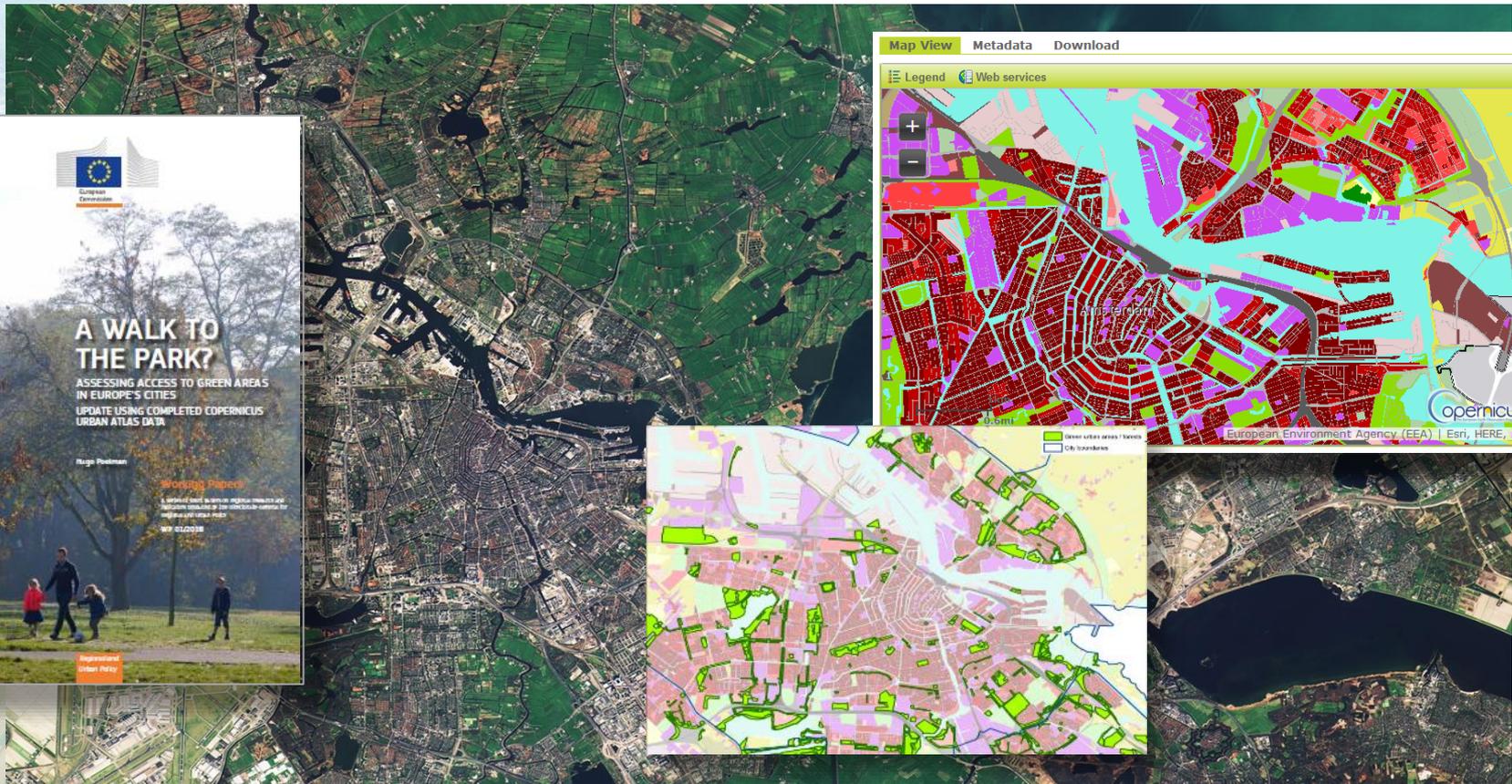
Bio-energy, including  
wood- and crop-derived  
bio-energy

Other crop-derived  
products and other  
wood products



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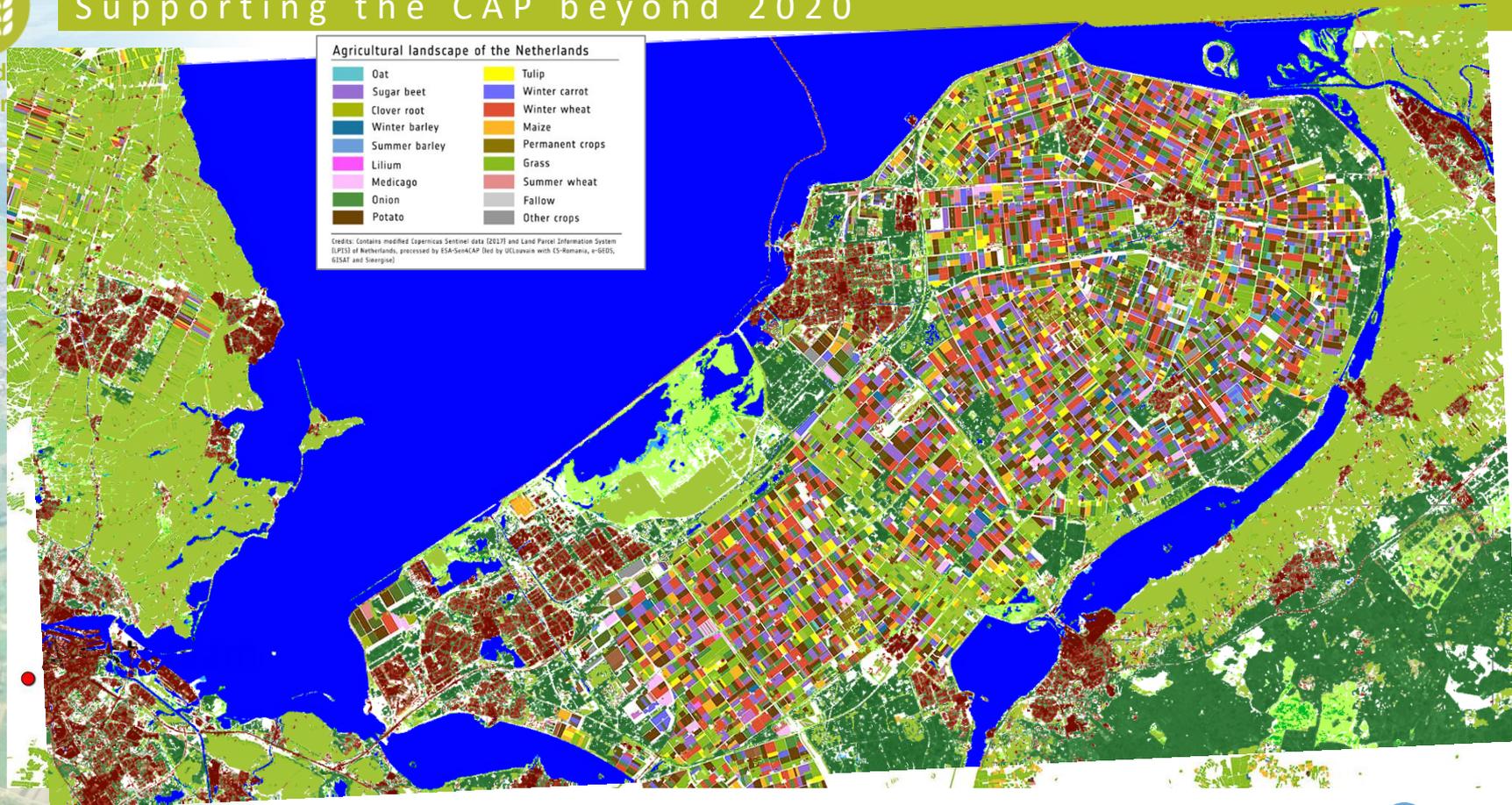
# Supporting the urban agenda: sustainable urban environments





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# Supporting the CAP beyond 2020



© modified Copernicus Sentinel data (2017), processed by ESA-Sen4CAP (led by UCLouvain with CS-Romania, e-GEOS, GISAT and Sinergise)

European Environment Agency



European  
Commission

Copernicus  
Europe's eyes on Earth



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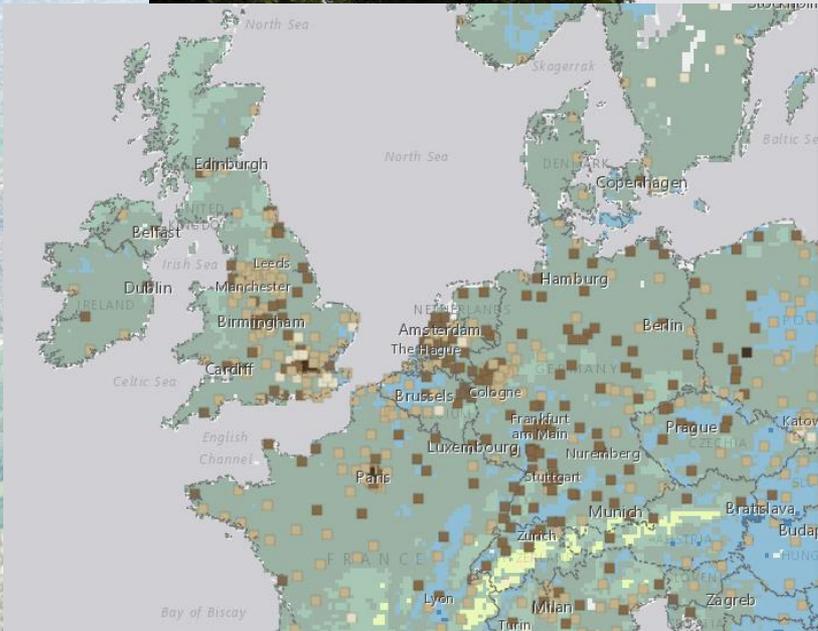
# Monitoring CAP agro-environmental measures





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# Sealed surfaces in cities in the changing climate



## Countries



## Percentage of impervious area within Urban Morphological Zone (UMZ) (2015)

Percentage of impervious areas within UMZ

- Over 60
- 40 - 60
- 20 - 40
- Up to 20
- No data

## Projected change in heavy precipitation in winter (from 1971-2000 to 2071-2100; RCP 8.5; %)

Projected change in heavy precipitation in winter (from 1971-2000 to 2071-2100; RCP 8.5; %)

- < -25
- -25 to -15
- -15 to -5
- -5 to 5
- 5 to 15
- 15 to 25
- 25 to 35



EEA Report | No 1/2017

## Climate change, impacts and vulnerability in Europe 2016

An indicator-based report

ISSN 1977-8449



European Environment Agency

European Environment Agency



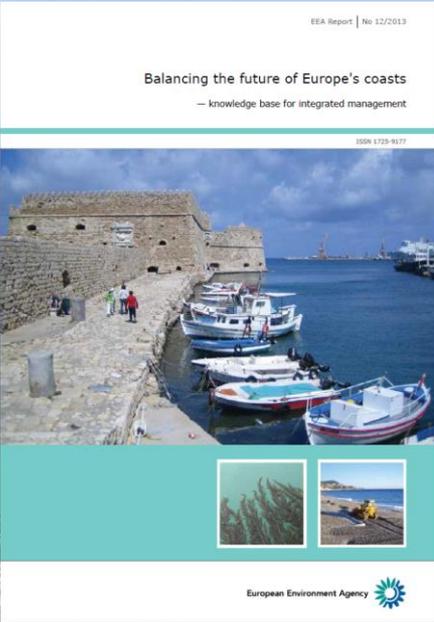
European  
Commission



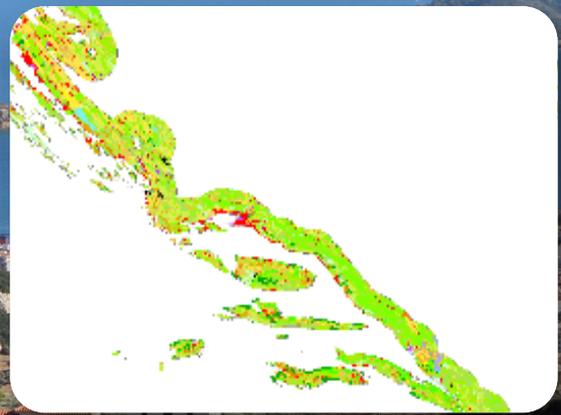


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# Supporting Integrated Coastal Zone Management



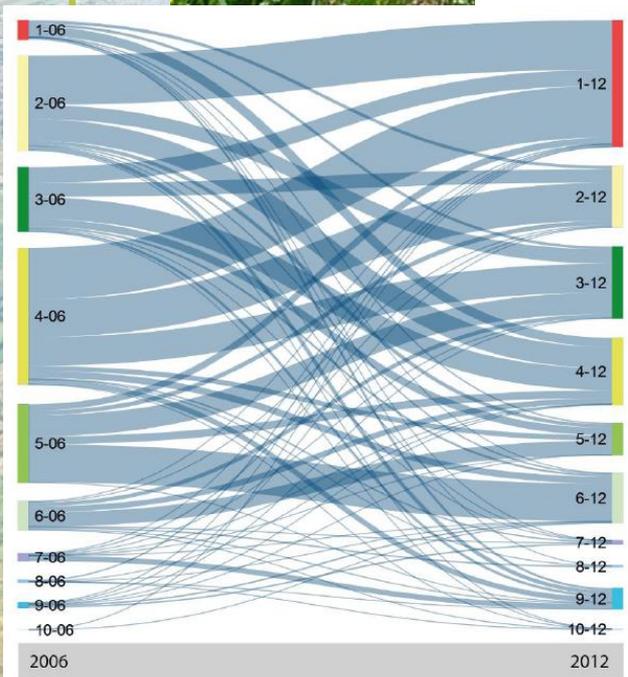
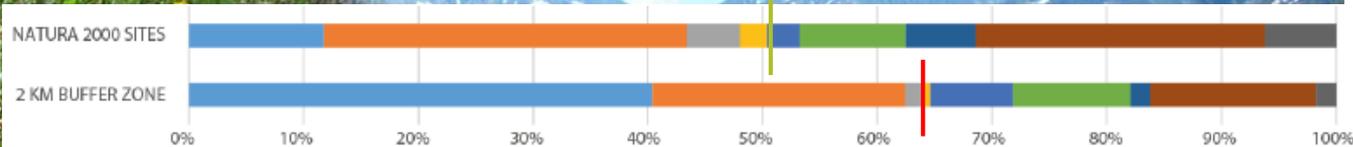
Europe is the world's primary tourism destination and tourism generates 10 % of EU GDP.



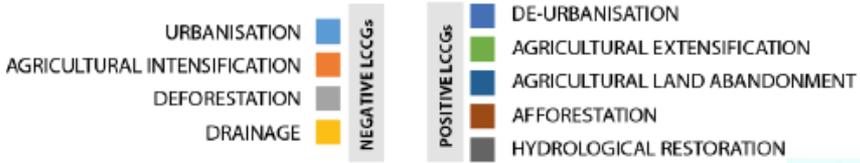


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# Supporting policy: preserving biodiversity



- 1 Urban
  - 2 Cropland
  - 3 Woodland and Forest
  - 4 Grassland
  - 5 Heathland and scrub
  - 6 Sparsely vegetated land
  - 7 Wetland
  - 8 Lagoons, coastal wetlands and estuaries
  - 9 Rivers and lakes
  - 10 Sea and ocean
- CLASSES



Mapping and Assessment of Ecosystems and their Services

Indicators for ecosystem assessments under Action 5 of the EU Biodiversity Strategy to 2020

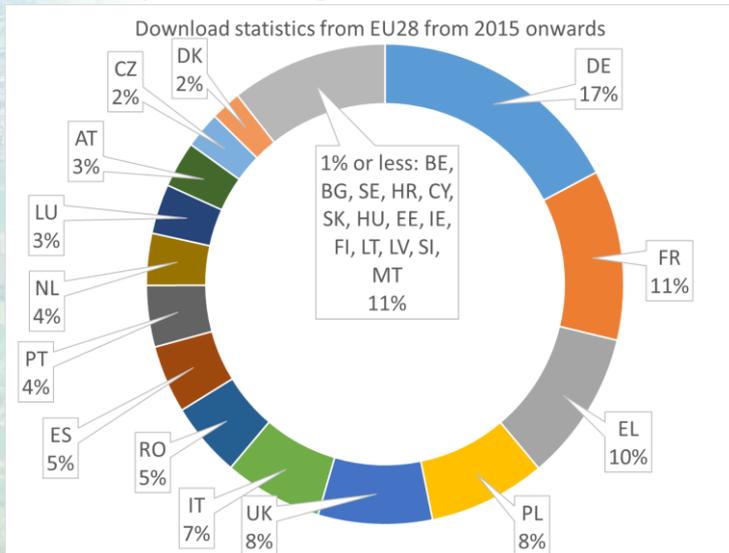
October - Fall 2012



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# European level dissemination: the Copernicus land portal

- Easy access to the products:
  - discover, view, WMS / download
- Links with the open data initiatives on European and global level



EU Open Data Portal

GOSS Portal

European Environment Agency



European Commission

Copernicus Europe's eyes on Earth



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[land.copernicus.eu](http://land.copernicus.eu)

[eea.europa.eu](http://eea.europa.eu)

# Thank You !

**Copernicus**  
Europe's eyes on Earth

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