

L'importanza del suolo e le attività del JRC per lo studio e il monitoraggio

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Commissione Europea
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Conferenza sulla
GIORNATA NAZIONALE SUL SUOLO

Roma
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Il suolo nel quadro legislativo Europeo



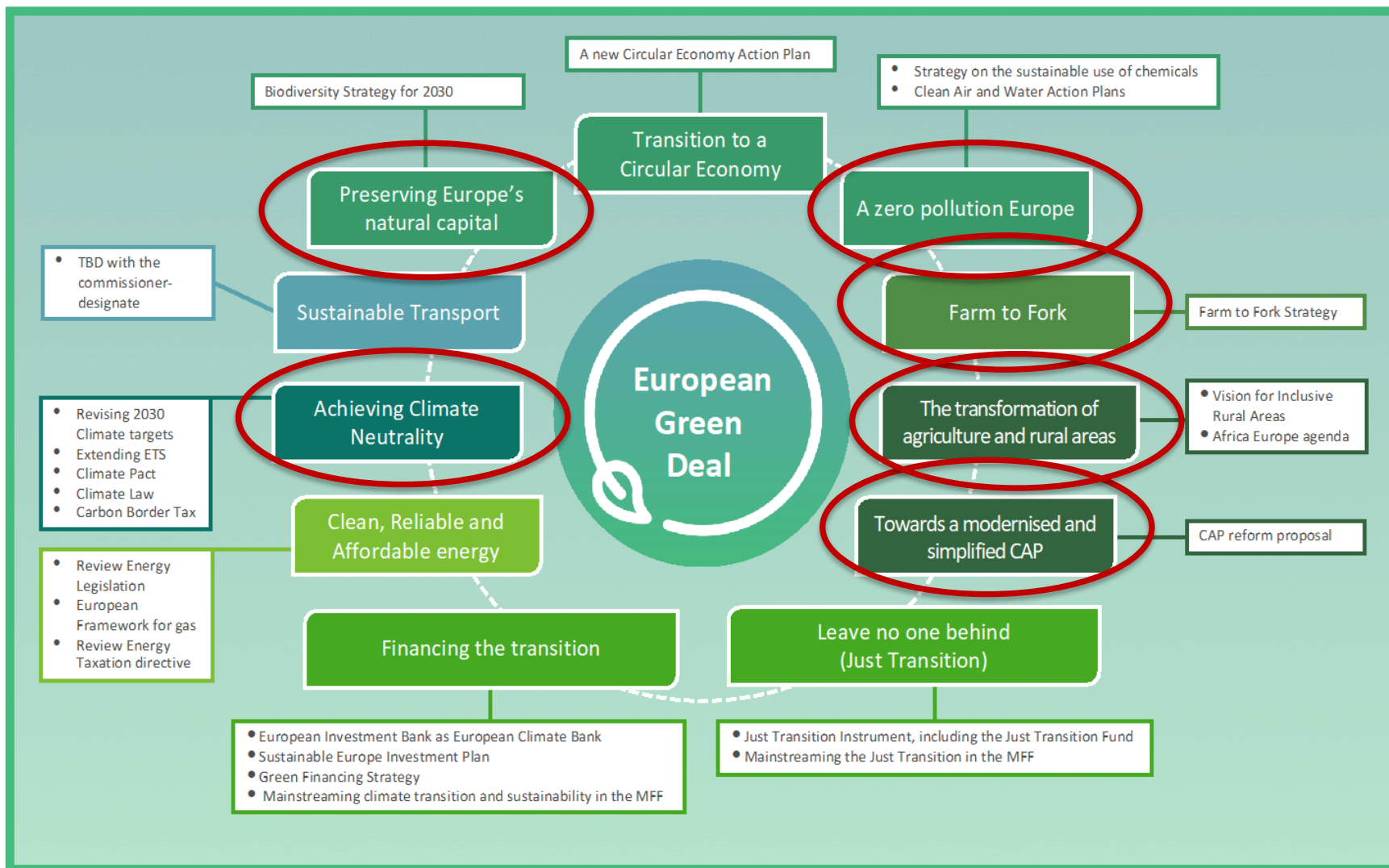
The Soil Thematic strategy, COM(2006) 231



- ❖ Overall objective is the protection of **soil functions** and **sustainable use** of soil, based on the following guiding principles:
 - ❖ Prevention of soil degradation
 - ❖ Restoration of degraded soils
- ❖ Sets out the **four pillars** of EU soil policy
- ❖ To be implemented by MS
- ❖ 2012 Report from the Commission on the implementation of the STS COM(2012)46



The European Green Deal



Il suolo nell' European Green Deal

EU OBSERVATORY ON LAND AND SOIL

My agenda for Europe

A Union that strives for more

Ursula von der Leyen



Target



EU land degradation monitoring system and support to 2030 land degradation neutrality targets



Future deliverables



- ❑ **EU land degradation outlook**
- ❑ **Soil pollution indicators** (pesticides, heavy metals, antibiotics, plastics, contaminated sites, ...)
- ❑ indicators in relation to the **soil health aspects** of the **SDG & CAP, Biodiversity** and **Climate Change** Strategies

Competences:



Available

- **ESDAC** as the primary soil knowledge hub for the EU and global data
- **Coordination of EU-wide and global sampling surveys**
LUCAS Soil since 2009, Africa in 2020
- **Modelling and indicator development** (LULUCF, soil organic carbon, erosion, pollution, soil biodiversity)

Missing

- **Critical mass**
- **Expertise on:** land degradation neutrality, soil health, economics of land degradation, soil ecosystem services

FPI

GROW

AGRI

ENV

CLIMA

ESTAT

DEVCO

SANTE

European Green Deal

- Biodiversity Strategy 2030
- Zero Pollution Strategy

European Climate Law

Stronger Europe in the World

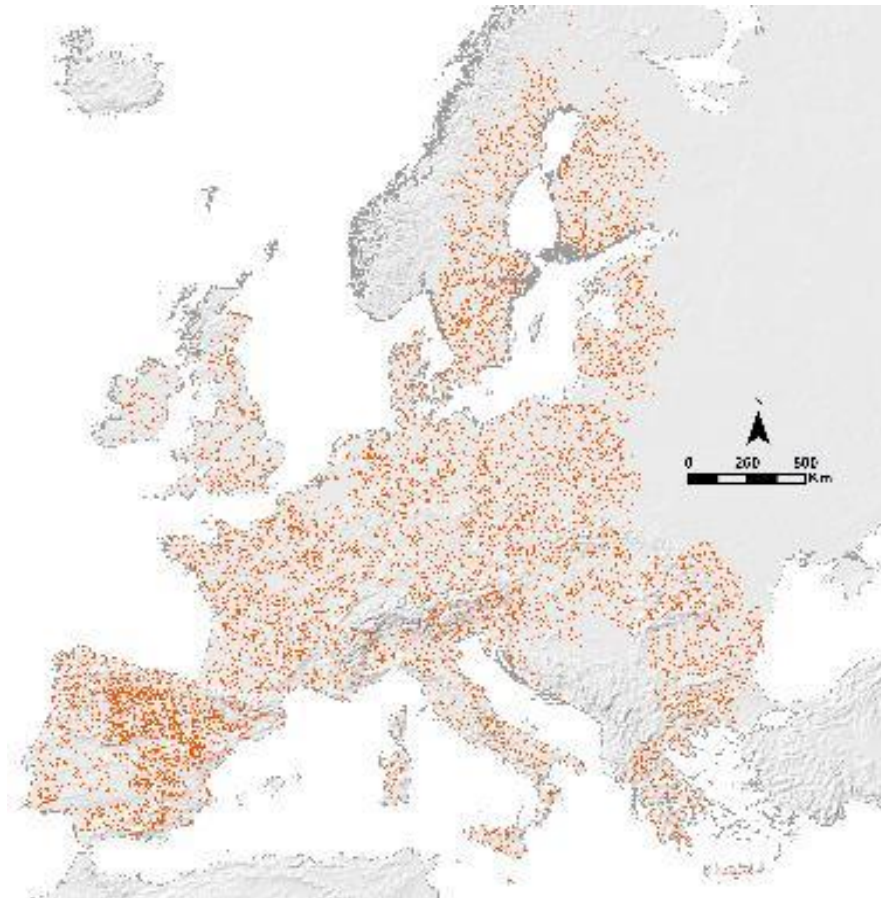
- Comprehensive Strategy on Africa

Farm to Fork strategy's international dimensions

Protecting our European Way of Life

- Cooperation towards Sustainable Growth

Monitoraggio delle caratteristiche del suolo: LUCAS-Soil



LUCAS Soil monitoring program covers all EU member states:

- around **7 %** of our soil monitoring points are in **Italy**
- 1333 points sampled in 2009; 1642 sampled in 2015; 2086 points planned for 2018

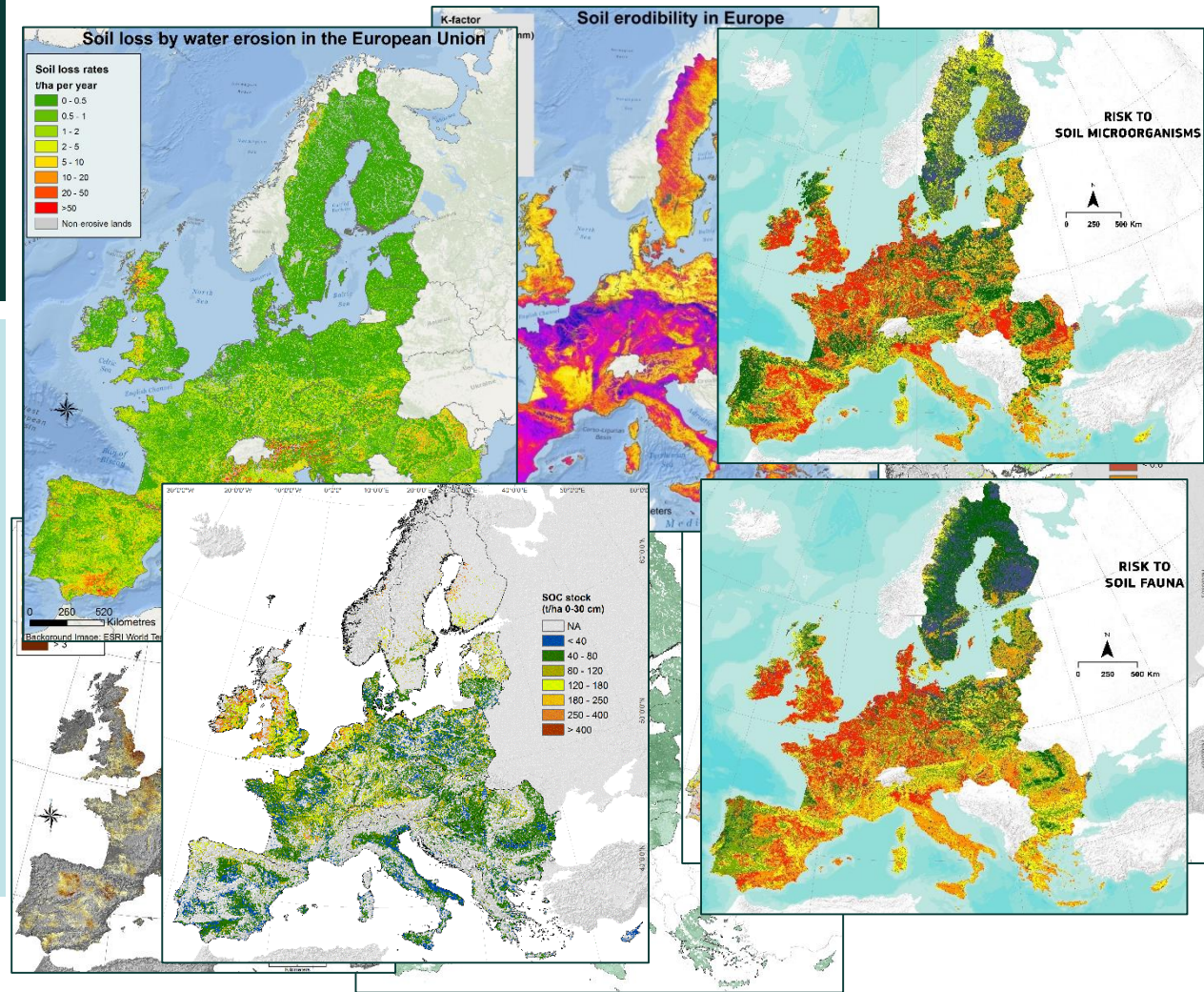
LUCAS is... Expandable

- Modular structure
- New points
- New properties
- Monitoring

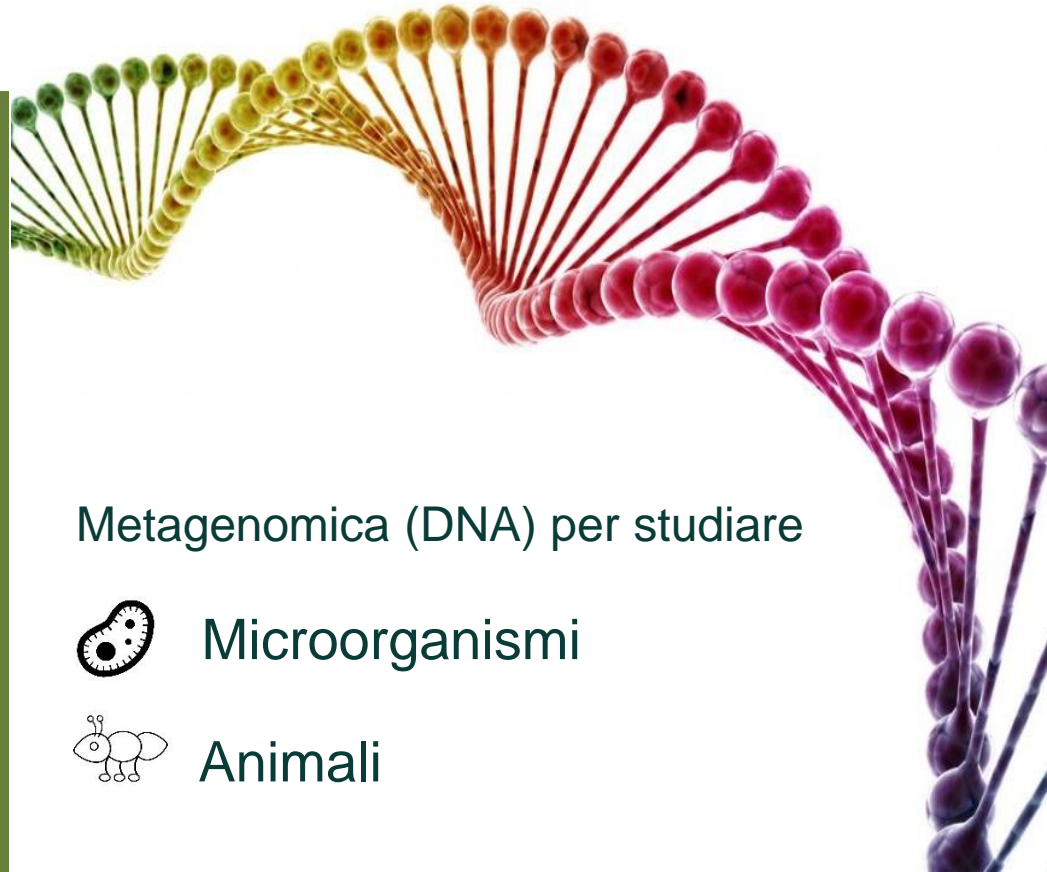
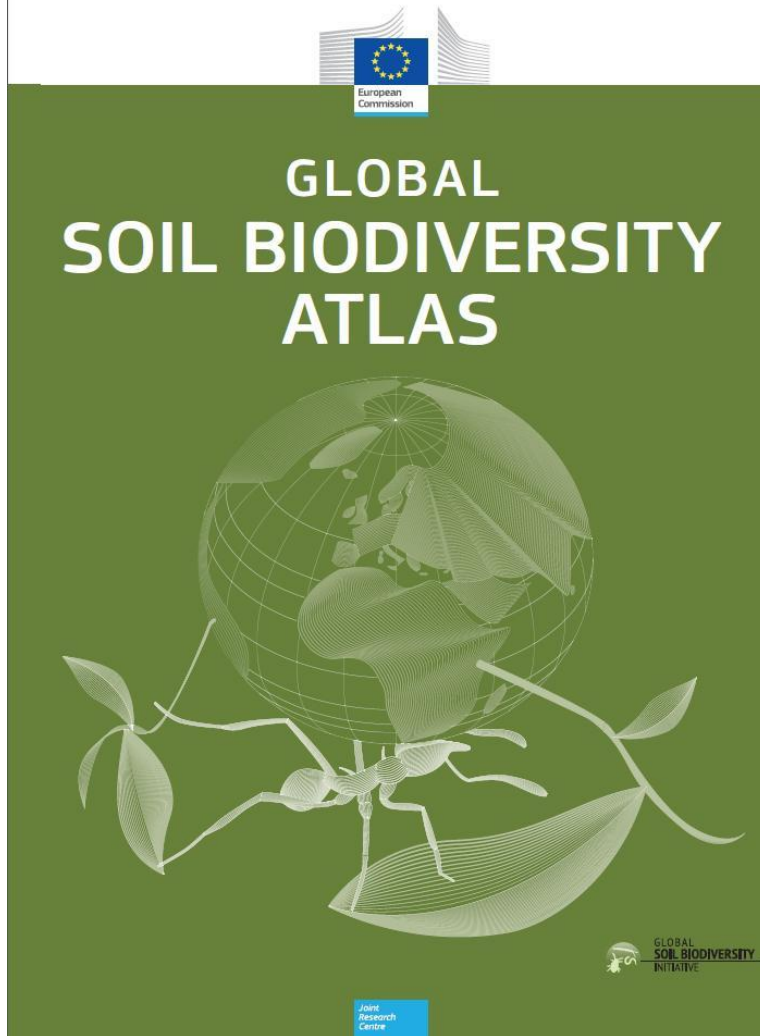
MODULE	Type of analysis	Year of survey				
		2009–2012	2015	2018	2021	→
MODULE 1 Physico-chemical properties	Coarse fragments (>2 mm)/% PSD ¹ : clay, silt, sand/% pH (CaCl ₂ , H ₂ O) Organic carbon/g kg ⁻¹ Carbonate content/g kg ⁻¹ Total nitrogen content/g kg ⁻¹ Extractable potassium content/mg kg ⁻¹ Phosphorous content/mg kg ⁻¹ Cation exchange capacity/cmol(+) kg ⁻¹ Electrical conductivity/mS m ⁻¹ Metals Multispectral properties Mineralogy					
MODULE 2 Soil biodiversity	Bacteria and Archaea (16S rDNA) Fungi (ITS) Eukaryotes (18S rDNA) Metagenomics					
MODULE 3 Bulk density	Bulk density Soil moisture					
MODULE 4 Field measurements	Soil erosion by water and wind Thickness of organic layer in Histosols					
MODULE 5 Pollution	Pesticides residues Antibiotics					
Possibility to include new modules						

LUCAS is... Composite

- Raw and fine data
- More than 20 derived data sets
- Peer-reviewed



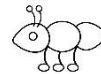
Ricerca all'avanguardia



Metagenomica (DNA) per studiare



Microorganismi



Animali



Ricerca all'avanguardia



Analisi dell'inquinamento da plastica nel suolo



Indagine più completa sui residui di
pesticidi nel suolo per l'UE

Grazie



“Essentially, all life depends upon the soil ... There can be no life without soil and no soil without life; they have evolved together.”

Charles Kellogg, 1938

The word *Homo*, the genus that comprises the species *Homo sapiens*, is derived from the Latin *humus*, meaning of the soil.