African Union Soil Observatory

"SOIL health monitoring and information systems FOR sustainable soil management in the MEDiterranean region"

AUSO and SOILS4MED Projects: soil health monitoring and soil information systems

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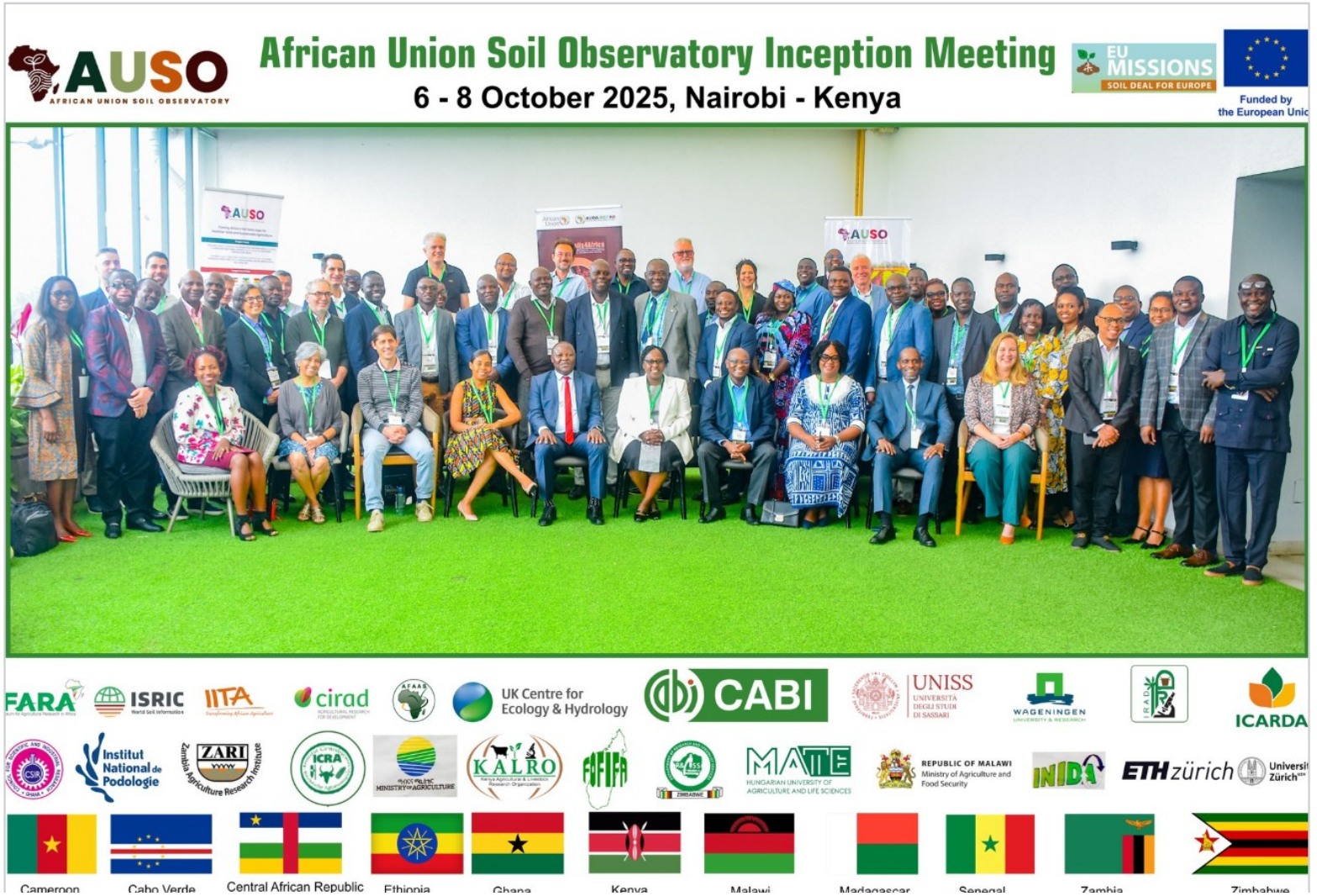
Funded by the European Union

This project is funded by the European Union's HORIZON Innovation Actions (2025-2030) under grant agreement No. 101218840

Coordinated by FARA (FORUM FOR AGRICULTURAL RESEARCH IN AFRICA, based in Ghana)



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Goal:
Establish a continental **African Union Soil Observatory** (AUSO), which includes an **African Soil Data Center** (ASDAC) and a **Soil Health Dashboard** to fill existing data gaps, that will be **owned by** the AFRICAN UNION COMMISSION,

The AUSO will **consolidate soil data** from various national and international sources and create a **platform for soil health monitoring**.

AUSO will address **data shortages** and **develop national soil health strategies in 12 countries:** doing this, it will **empower stakeholders** in the public and private sectors to make informed decisions, prioritize interventions, and **support evidence-based soil and land management policies that promote sustainable agriculture**.

AUSO will build on the Soils4Africa SIS and draw insights from the EU Soil Observatory (**EUSO**) and other initiatives, ensuring relevance and adaptability to the African context.

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AUSO
AFRICAN UNION SOIL OBSERVATORY

KEY PARTNERS

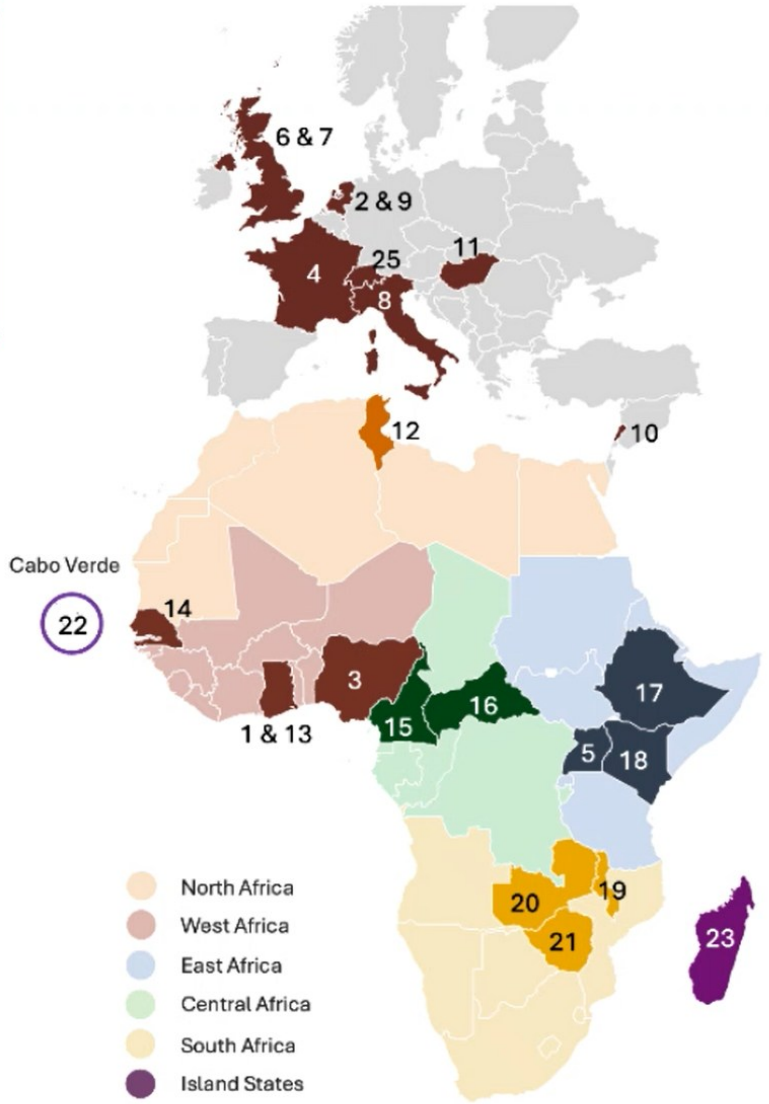
1. FARA
2. ISRIC
3. IITA
4. CIRAD
5. AFAAS
6. UKCEH
7. CABI
8. UNISS
9. WUR
10. ICARDA
11. MATE

NATIONAL PARTNERS

12. DGACTA
13. CSIR
14. INP
15. IRAD
16. ICRA
17. MoA
18. KALRO
19. DLRC
20. ZARI
21. MoA
22. INIDA
23. FOFIFA

ASSOCIATED PARTNER

24. ETHZ



AUSO
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EU MISSIONS
SOIL DEAL FOR EUROPE

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Objective 1) Sustainability : to establish a robust foundation and enabling environment that develop and **integrate AUSO within the African Union system**, supported by a sustainability plan that includes resource mobilization and an African strategic roadmap that tracks and assesses the impact of various policy instruments on soil health (WP2)

Objective 2) Soil Health status framework: to develop a novel, scalable framework that describes and maps the soil health status using identified variable **indicators** and **interpretive thresholds**, to inform stakeholders about soil health status (WP3)

Objective 3) African Union Soil Observatory and African Soil Data Centre: a map-viewer and soil health dashboard for visualizing soil health status, incorporating lessons learned from EUSO and Soils4Africa (WP4)

Objective 4) Data collection and 'Convergence of evidence maps': To establish a framework for strategic data collection on key soil health descriptors at continental level to inform knowledge gaps and feed mapping. (WP5)

Objective 5) National soil health strategies: to support participating African countries in developing national soil health strategies to better manage soil resources for agriculture and the environment sustainability (WP6)

Objective 6) Soil literacy and stakeholder engagement: To develop a plan for engagement and communication with stakeholders to enhance soil literacy among the public (WP7) and

PRIMA
PARTNERSHIP FOR RESEARCH AND INNOVATION IN THE MEDITERRANEAN AREA

This project is part of the PRIMA programme supported by the European Union

soils4med

SOIL health monitoring and information systems FOR sustainable soil management in the MEDiterranean Region

PRIMA THEMATIC AREA
Farming Systems

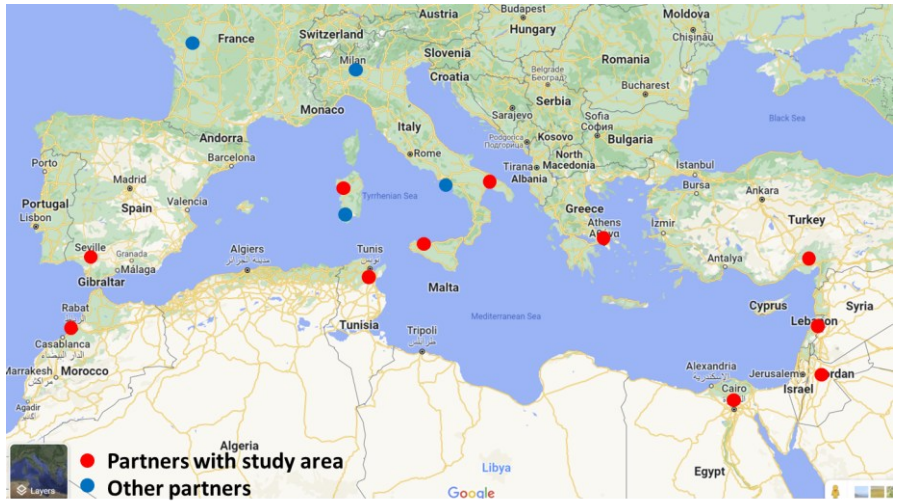
BUDGET
€ 4.100.000,00

DURATION
42 months
May 2023 – October 2026

SCIENTIFIC COORDINATION
University of Sassari (UNISS)
Claudio Zucca

PARTICIPANT COUNTRIES
10

RESEARCH UNITS
16



- Egypt
- Greece
- Italy
- Jordan
- Lebanon
- Morocco
- Tunisia
- Türkiye
- Spain

PARTNERS

ADVICE AND OUTREACH COMMITTEE

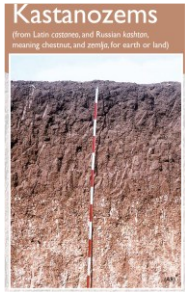
This project is part of the PRIMA programme supported by the European Union

The Call gave us a clear mandate

PRIMA Research Call TOPIC: 1.2.1 (2022)
"Developing integrated soil data for the Mediterranean Region: a gateway for sustainable soil management"

The main scientific **challenge**:
"*an urgent need to* ***harmonise methodologies and indicators*** *to develop an easily accessible and* ***standardised database of soil information*** *enabling the assessment of the soils in the region*".

The main **objective**:
"to derive *soil quality indicators, methods, measurements* that need *to be validated and harmonised* to **enhance the quantity, quality and availability of soil data and information** ... *considering the* ***specificities of Mediterranean environmental conditions***".



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The expected long-term impacts of the increased availability of soil data

SDGs

SDG 13 *Climate change mitigation and adaptation;*

SDGs: 15.3.1 *Percent of land that is degraded*

SDGs: 2.4.1. *Proportion of agricultural area under sustainable agriculture*

SDG 6.2.4. *Nitrate in groundwater;* **SDG 6.2.6.** *Phosphate in rivers*

Long-term impacts

Improved predictions of **soil C-Seq. potential**

Improved data on risks for soil degradation and desertification

Enabling assessment of **SLM effects** on agro-ecosystem **water, C, and nutrient cycles**

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Project Objectives

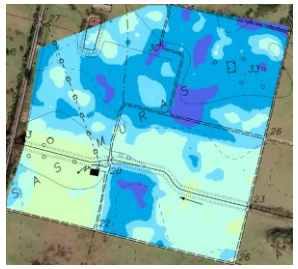
1) Engage stakeholders with a **Living Lab** approach: understand what the users need, **make the information on the soils more useful**.

2) Develop **harmonized indicators** and **monitoring protocols** across the Mediterranean regions.

3) Test the methods in **study areas with different land uses and soil types**.

4) Design and implement harmonized country-owned **soil information systems (SIS)** to manage soil data and information including legacy data

5) Demonstrate the capacity of the SIS to support **decisions for sustainable soil management**.



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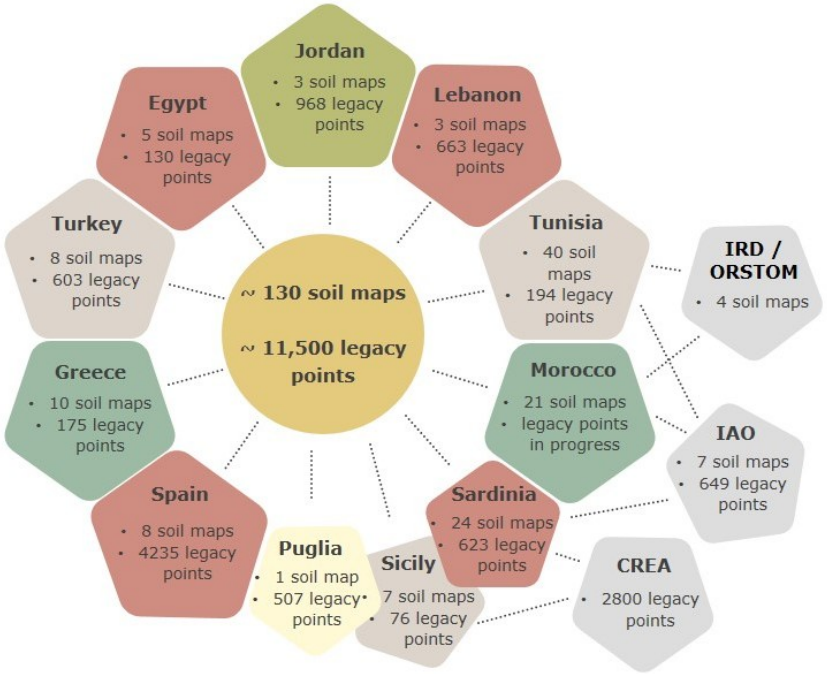
LEGACY data

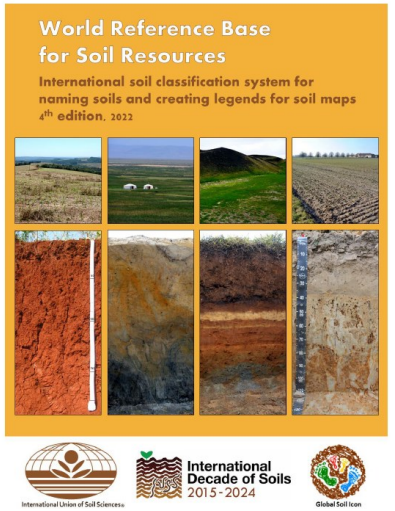
1. **Thousands legacy soil point data and maps inventoried**
2. **Harmonization guidelines developed (soil classification, lab methods)**
3. Analogic legacy data being **digitized**

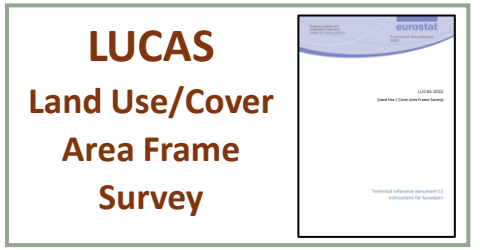


SAMPLING and MONITORING protocols

1. **Up to 2,000** sampling points, 11 study areas
2. **Clusters** of points (denser than LUCAS grid)
3. Different environments (Soil + LC types)

DATA MODEL, based on WRB-2022 for all descriptors





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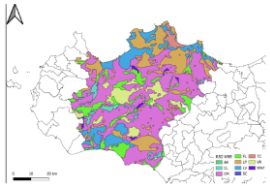
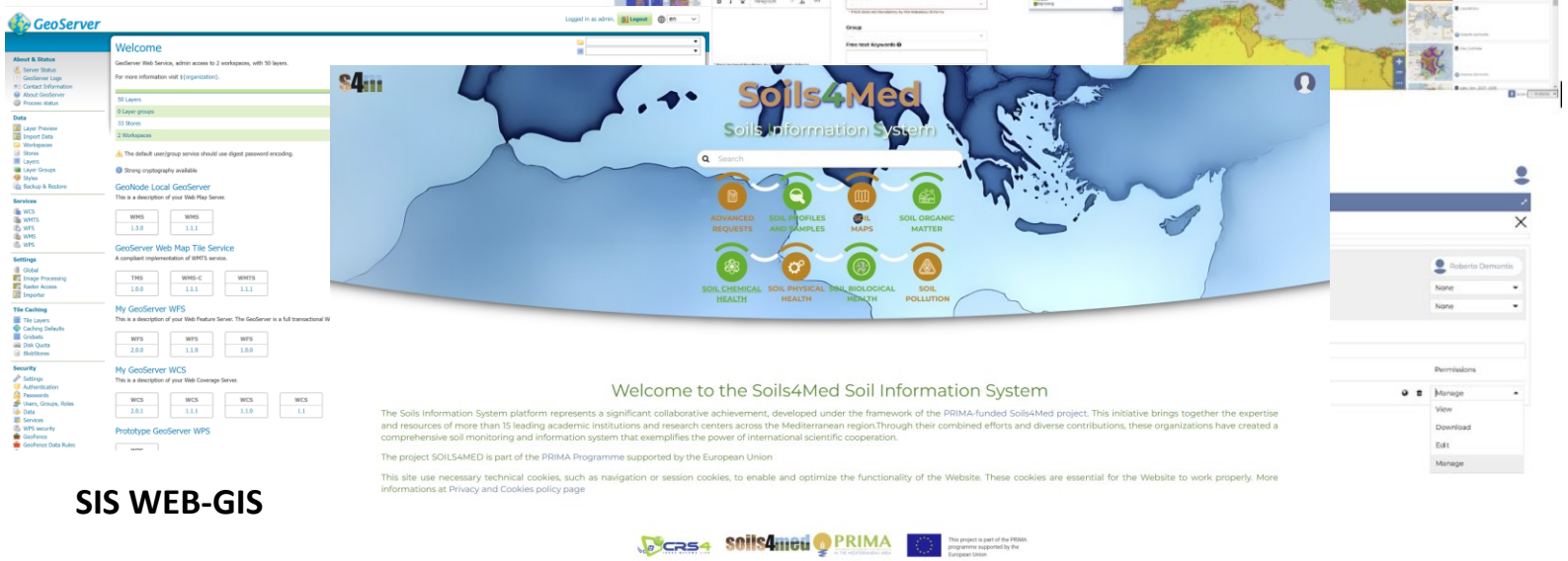


Standardized country-based soil information system (SIS)

Lab-based properties largely consistent with SOILS4AFRICA



SIS WEB-GIS

SIS Catalogue

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Launch of Soil Atlas of the Mediterranean Region
Rome, 8-9 October 2025

Some considerations, based on the conceptual frameworks that the project is implementing

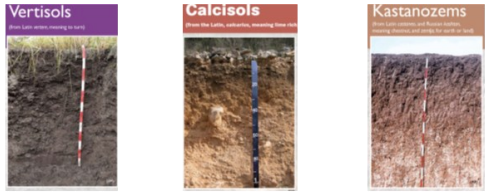
Ecosystem services (ES) provision needs **healthy soils in healthy ecosystems**

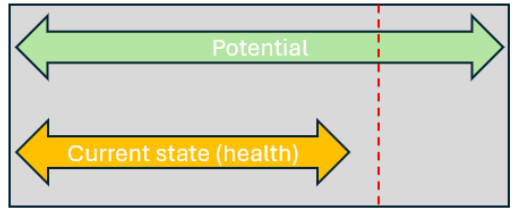
The levels of ES provision depend on the type of soil and land use, which define the potential level of provision and can provide a spatial basis to define baseline values and monitor changes

Defining the potential, baselines, and thresholds require understanding soils' and lands' diversity

Enhancing soil literacy is very important at all levels of the education system.

Soils can contribute to solve problems originated by technological and industrial processes: however, actions should be constrained by soil health, minimizing unnecessary soil manipulation.
E.g. increase the carbon stock of one soil according to its carbon storage potential and as far as (as quantity and quality) this enhances its health.





Key questions:
How much is the potential
What is the desired health threshold

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THANK YOU FOR YOUR ATTENTION!

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