



Food and Agriculture  
Organization of the  
United Nations

# 18<sup>th</sup> Working Session of the Intergovernmental Technical Panel on Soils (ITPS)

## GSP Soil Information and Data

21-23 March 2023  
Fao Headquarters  
Rome, Italy

Isabel Luotto

on behalf of the ITPS WG & GSP SID

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## Area of Work: Soil Information & Data (SID)

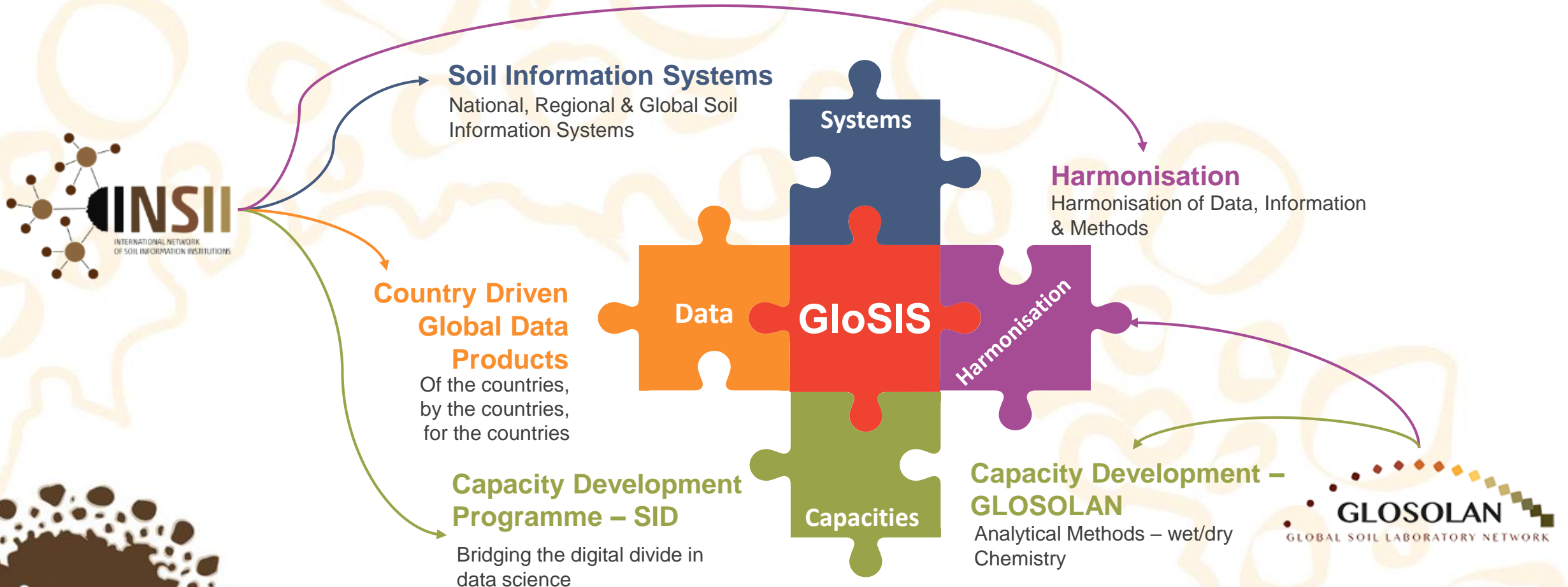
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# GSPs Contribution to Data Driven Policy Making





**GSOCmap** v1.0 (2017) >> ...V1.6 (2022)

Global Soil Organic Carbon Map



**GSOCseq** v1.0 – (2021)- V1.2 soon

Global Soil Organic Carbon Sequestration Potential Map



**GSASmap** v1.0 (2021)

Global Salt Affected Soils Map



**GBSmap** v1.0 (2022)

Global Black Soil Distribution Map



**GSNmap**

Global Soil Nutrient and Nutrient Budget Maps



**GSERmap**

Global Soil Erosion Map



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17-19 October 2022 | Virtual meeting





### PHASE I – Nutrient maps | PHASE II – Nutrient Budgets

- Phase I development started
  - GSNmap Country Guidelines and Technical Specifications - published
  - GSNmap Technical Manual – ready
  - National Expert Nomination - ongoing
  - Phase I Capacity Development kick-started
  - WG to guide Phase II established





### PHASE I – Nutrient maps



Methodology

- **Phase I: Digital Soil Mapping** based on a machine learning algorithm (Quantile Regression Forest)
- **Phase II: N, P, K nutrient budgets**



Extent

- **Scale: National**
- **Depth: 0-30 cm**
- **Resolution: 250 x 250 m**



Process

- **Country-driven** (global map based on national submissions)
- Updated following a **Versioning system**

# GSPs Country Driven Approach – GSNmap

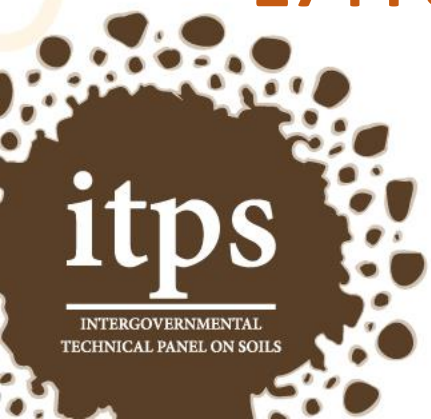
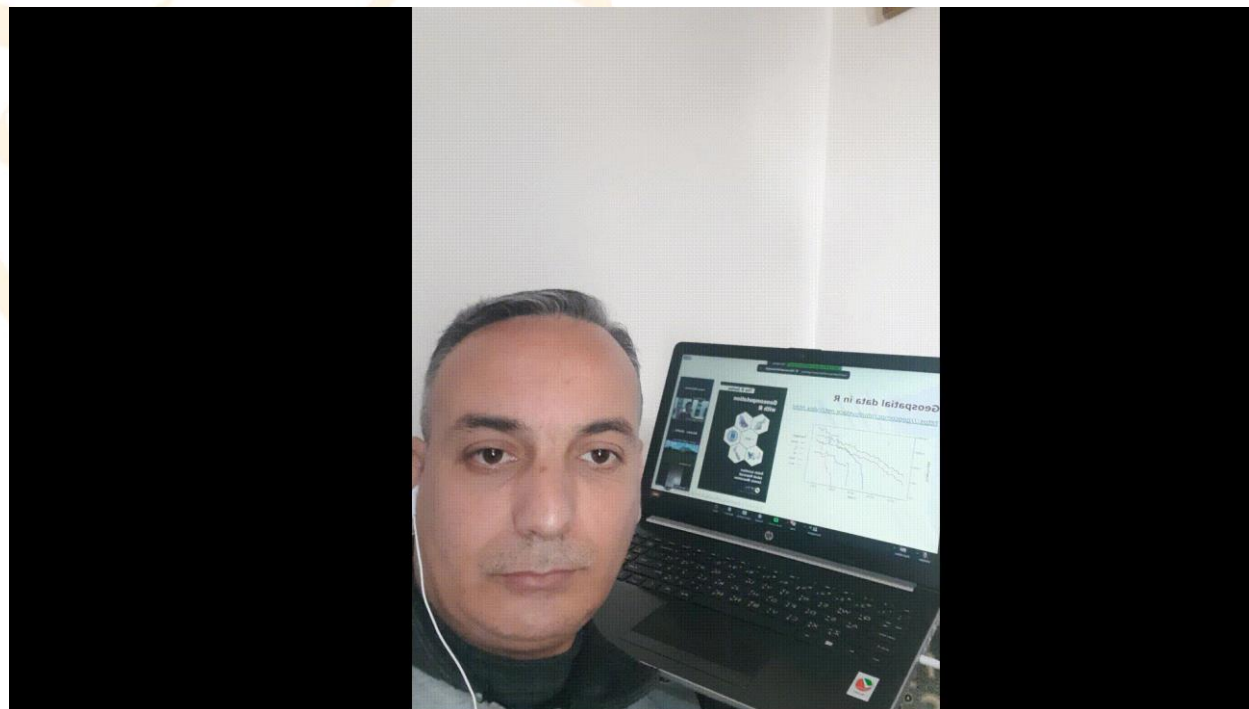




**5 Regional Online Trainings:**

- ✓ Asia
- ✓ NENA
- ✓ Africa
- ✓ Eurasia

**60 Countries represented**  
**274 People trained**





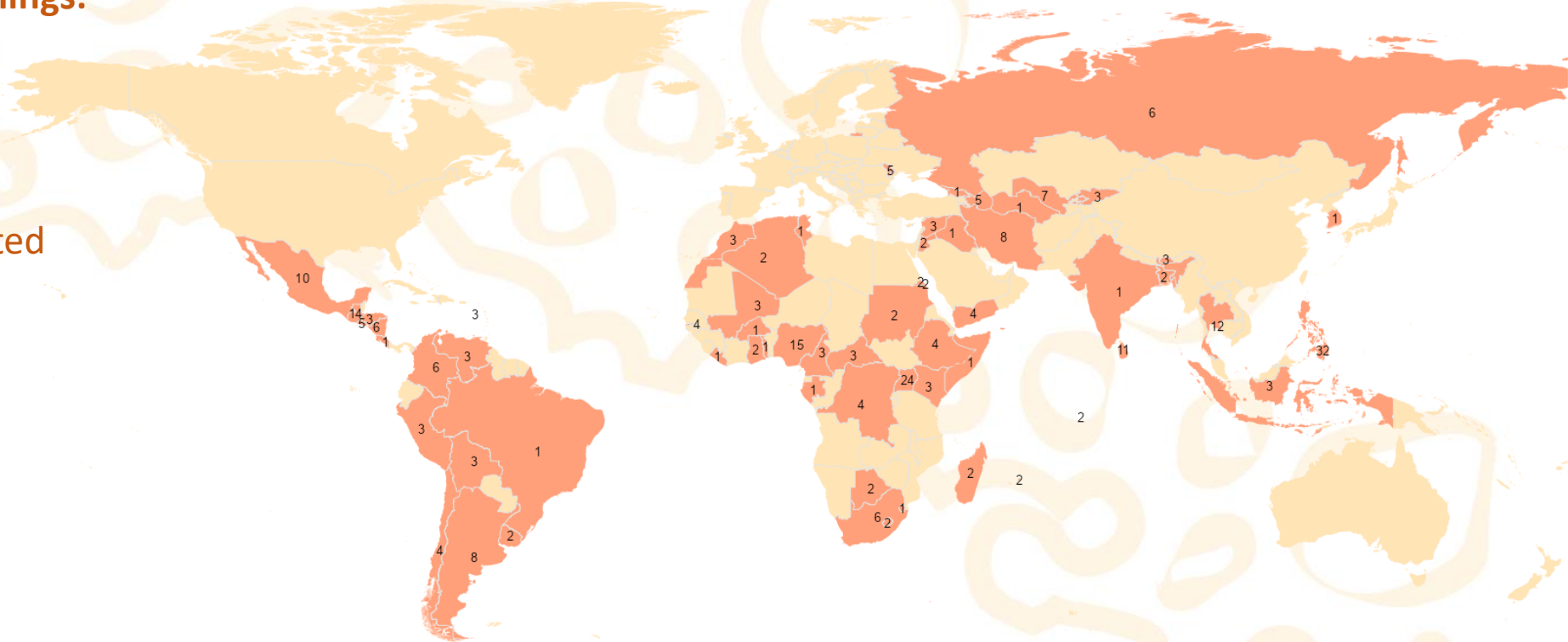


### 5 Regional Online Trainings:

- ✓ Asia
- ✓ NENA
- ✓ Africa
- ✓ Eurasia

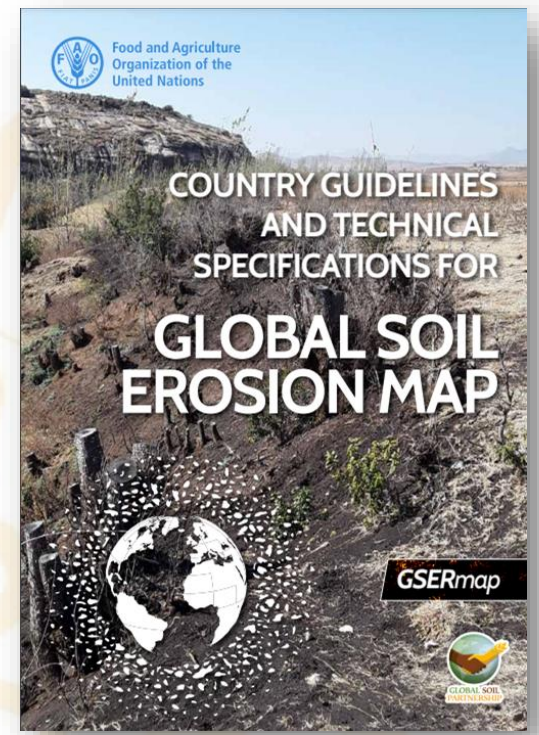
60 Countries represented  
274 People trained

3 Pending:  
North America  
Europe  
Pacific



# GSERmap

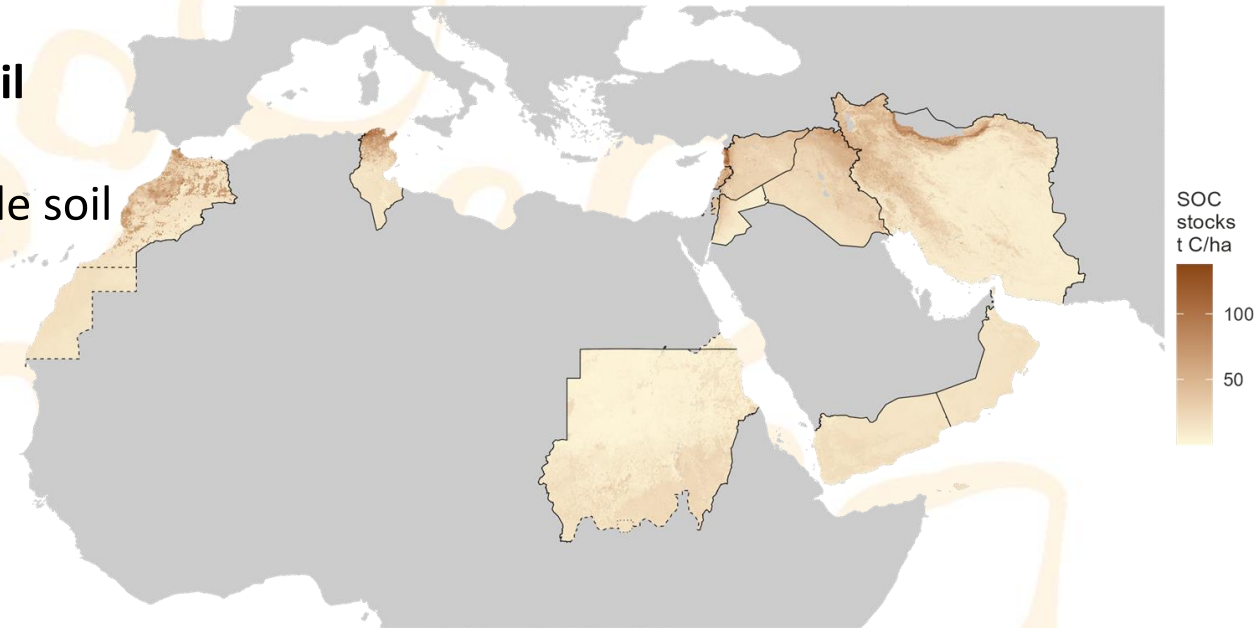
- Implementation slower than expected
- Technical Specifications and Country Guidelines – ready (soon to be published)
- Technical Manual in early stage



# Projects: NENA TCP Project

## Project objectives:

- have a better **understanding of the status of soil resources** in the NENA region
- explore the **potential of and scale up** sustainable soil management (**SSM**)
- contribute to execution of the **NENA Soil Partnership's implementation plan**
- **address** national/regional **needs and priorities**
- **11 Countries** involved - Iran, Lebanon, Oman, Tunisia, Syria, Sudan, Yemen, Jordan, Morocco, Palestine



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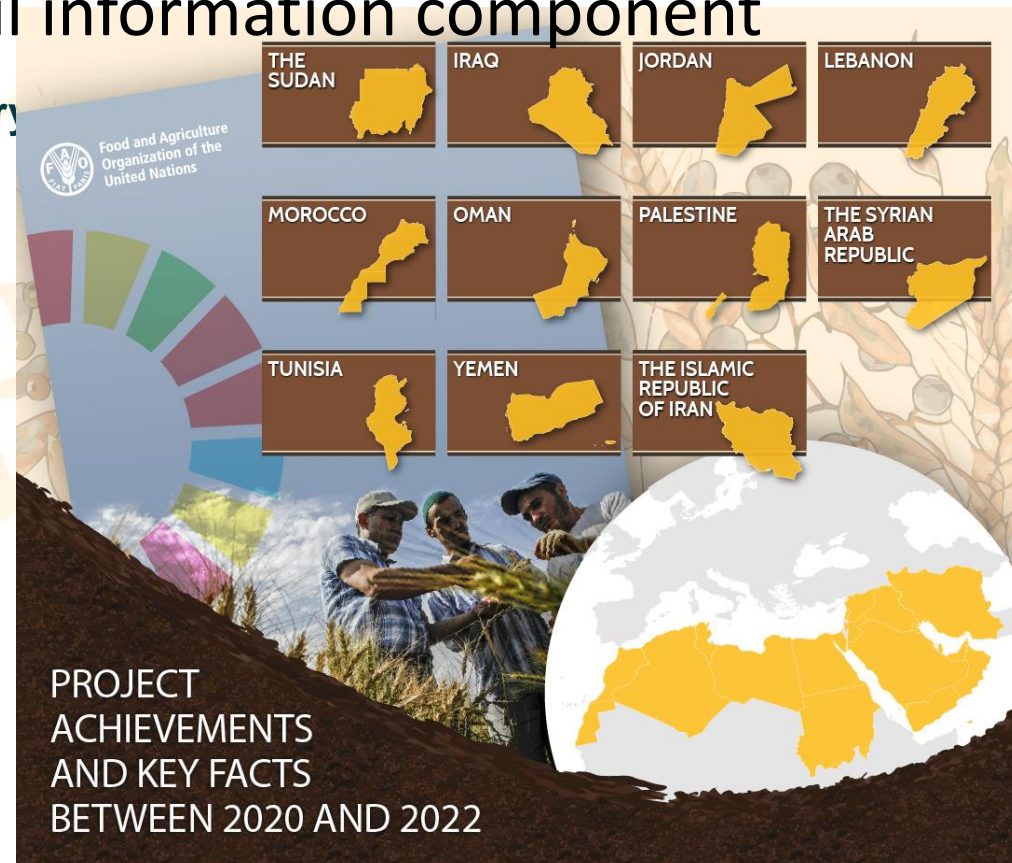
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# NENA TCP Project - Soil information component

## Project achievements and key facts by country

- [the Islamic Republic of Iran](#)
- [Iraq](#)
- [Jordan](#)
- [Lebanon](#)
- [Morocco](#)
- [Oman](#)
- [Palestine](#)
- [the Sudan](#)
- [the Syrian Arab Republic](#)
- [Tunisia](#)
- [Yemen](#)



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# Projects: AFACI

- Project funded by Asian Food and Agriculture Cooperation Initiative (AFACI) and Korea RDA
- Soil Atlas of Asia to be launched during the 11th PA
- Phase II confirmed
- Focus on national SIS and EduSoils – Educational Platform

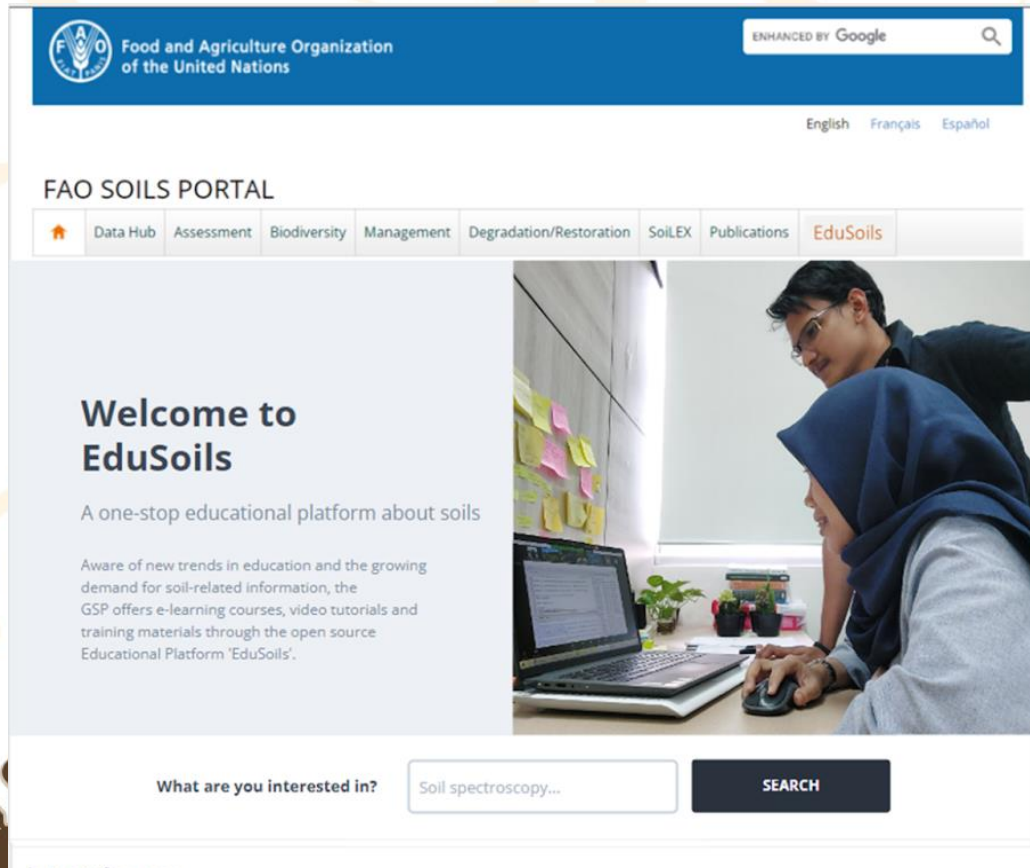
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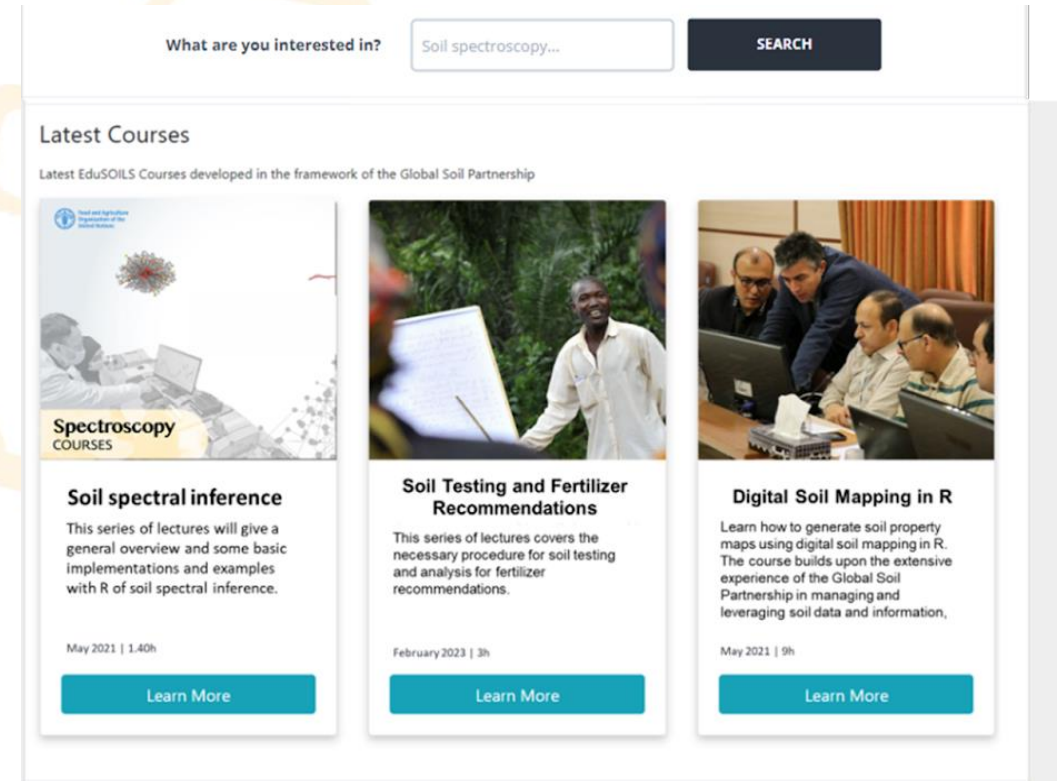
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# EduSoils – educational online platform on soils

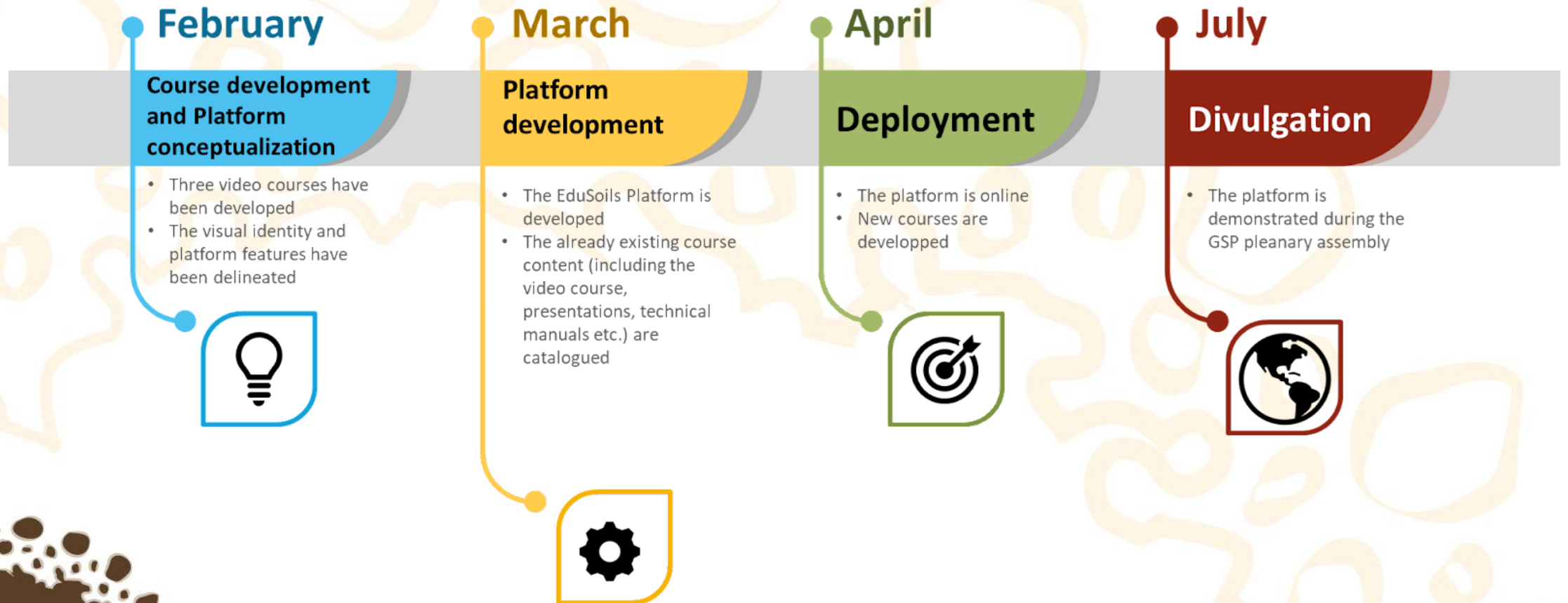


The screenshot shows the top navigation bar of the FAO Soils Portal. It includes the FAO logo and the text 'Food and Agriculture Organization of the United Nations'. A search bar is present with the text 'ENHANCED BY Google'. Below the navigation bar, there are language options: 'English', 'Français', and 'Español'. The main heading is 'FAO SOILS PORTAL'. A secondary navigation bar contains links for 'Data Hub', 'Assessment', 'Biodiversity', 'Management', 'Degradation/Restoration', 'SoiLEX', 'Publications', and 'EduSoils'. The main content area features a large image of two people working at a laptop. To the left of the image, the text reads: 'Welcome to EduSoils', 'A one-stop educational platform about soils', and 'Aware of new trends in education and the growing demand for soil-related information, the GSP offers e-learning courses, video tutorials and training materials through the open source Educational Platform 'EduSoils'.' At the bottom of the page, there is a search bar with the text 'What are you interested in?' and a 'SEARCH' button.



The screenshot shows the 'Latest Courses' section of the EduSoils platform. At the top, there is a search bar with the text 'What are you interested in?' and a 'SEARCH' button. Below the search bar, the text reads 'Latest EduSOILS Courses developed in the framework of the Global Soil Partnership'. The section displays three course cards. The first card is titled 'Spectroscopy COURSES' and features a sub-card for 'Soil spectral inference' with a description: 'This series of lectures will give a general overview and some basic implementations and examples with R of soil spectral inference.' and a 'Learn More' button. The second card is titled 'Soil Testing and Fertilizer Recommendations' with a description: 'This series of lectures covers the necessary procedure for soil testing and analysis for fertilizer recommendations.' and a 'Learn More' button. The third card is titled 'Digital Soil Mapping in R' with a description: 'Learn how to generate soil property maps using digital soil mapping in R. The course builds upon the extensive experience of the Global Soil Partnership in managing and leveraging soil data and information,' and a 'Learn More' button. Each card also includes a date and duration: 'May 2021 | 1.40h', 'February 2023 | 3h', and 'May 2021 | 9h' respectively.

# EduSoils – educational online platform on soils



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**GSNmap – Global Soil Nutrient and Nutrient Budget Maps**

**GSERmap – Global Soil Erosion Map**

**Update: GSOCmap, GSOCseq, GBSmap, GSASmap**

**EduSoils**

**National Soil Information Systems**

**AFACI Project + AFACI Phase II**

**SoilCARE**

**TCP-Liberia**

**Azerbaijan**

**SoilFER**

**SID'24**

# 2023 Work Plan

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Thank you!

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