



Food and Agriculture  
Organization of the  
United Nations



# NENA TCP - Training Session

Training on Soil Organic Carbon Sequestration Modeling & Mapping

21-25 February 2022 - Virtual (14:00 -17:00 | Rome GMT+1)

**Project:** This project builds on the need to have a better understanding of the soil conditions in the NENA region and on the benefits of sustainable soil management (SSM) for increasing the soil water storage capacity and addressing soil salinity. This project will contribute to the countries actions to achieve the Sustainable Development Goals (SDGs) and especially SDG1, 2 and 15. It is a direct contribution to the work of the NENA Soil Partnership, which was established in 2012 to enhance collaboration between member countries in the region. In this context, the project contributes to execute the NENA Soil Partnership's implementation plan and to address national needs and priorities, which were translated into regional actions.

**Relevant Project Output:** Production of national soil profile databases and property maps (Output 2)

**Activity:** Produce national thematic maps and extract statistics under the guidance of the GSP. GSP will organize remote support and online harmonization sessions.

**The objective of the training on Soil Organic Carbon Sequestration Modeling & Mapping is to support countries in:**

- To support NENA countries to produce their soil organic carbon sequestration potential maps following the GSOCseq Guidelines
- coordinating action and foster international co-operation by providing a data-driven knowledge base;
- identifying and mapping areas with high sequestration potential to leverage Soil Sustainable Management (SSM) (Voluntary Guidelines on Sustainable Soil Management; (VGSSM; pdf)
- providing a framework to exchange knowledge in a harmonized and effective way
- support the provision of incentives to farmers implementing SOC-cantered SSM practices under GSP's RECSOIL facility (Leaflet; pdf)



Food and Agriculture  
Organization of the  
United Nations



**Registration:** <https://fao.zoom.us/meeting/register/tJlqd-yvqDkoHNfQMdBX5RGP7v3RQn0yUw-b>

## Lecturers:

Guillermo Peralta  
Isabel Luotto  
Moritz Mainka

## Get Prepared

Participants should install the necessary software download the training material:

- Training Material, download and save on your C drive: ·  
<https://drive.google.com/drive/folders/1m6cc8COo3DncLvwp3Oz1WnwZ5wwC0ymY?usp=sharing>
- R (latest stable version, R 4.0.3 for Windows (85 megabytes, 32/64 bit)
- RStudio (latest stable version,  
<https://rstudio.com/products/rstudio/download/#download> )
- QGIS (latest stable version, <https://qgis.org/en/site/forusers/download.htm> | - 32 or 64 bit)
- **ATTENTION** - Participants are **required to sign-up** for **Google Earth Engine Access**. The registration should be done as soon as possible as it might require some days for account activation: <https://signup.earthengine.google.com/>

## Notes/Material

- [GSOCseq Technical Specifications and Country Guidelines](#)
- [GSOCseq Technical Manual](#) (*Advance Copy, Unpublished - Not to be distributed, Copied, or Reproduced*)



Food and Agriculture  
Organization of the  
United Nations



## Agenda

### DAY 1 (3h) - Opening and Introduction

1. High-Level opening (Mr Abdel Hamied & Mr Talal Darwish)- 15'
2. Introduction: The GSOCseq Initiative (importance, the process, benefits, timeline), General framework (BAU, SSM1-SSM2-SSM3, Meta-Analysis), Product specifications, discussion and feedback on national capacities

### DAY 2 (3h) - Introduction to sequestration modelling

1. Introduction to sequestration modelling (RothC Basics), Input data requirements; uncertainties, software and tools (R, QGIS and Google Earth Engine to be used during the training)
2. Introduction to the R language and RStudio
3. Input data preparation: running Scripts 0 to 9

### DAY 3 (3h) – Input data preparation

1. Input data preparation (continuation of Day 2): running Scripts 0 to 9
2. Harmonization of spatial layers

### DAY 4 (3h) – Modeling and Mapping SOC sequestration Potential

1. Modeling and Mapping stage: running Scripts 9-16
2. Hands-on break out room session: applying the methodology to national data

### DAY 5 (3h) - Review and Implementation

1. Review and interpretation of the results and QA
2. Hands-on break out room session