



Food and Agriculture
Organization of the
United Nations



Rural Development
Administration

AFACI - Training Session

Training on Soil Organic Carbon Sequestration Modeling & Mapping

17-21 January 2022 - Virtual (10am - 1pm | Rome GMT+1)

Project: Preparation of the Soil Atlas of Asia through the update of national soil maps and National Soil Information Systems for AFACI Countries

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

Activity: Production/update of gridded maps of soil properties and threats (Activity 2.6)

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

- To support AFACI 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-centered SSM practices under GSP's RECSOIL facility (Leaflet; pdf)



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Registration:

<https://fao.zoom.us/meeting/register/tjwscuyrpjspHNDyszczwPwPmQoanPYn1216A>

Lecturers:

Guillermo Peralta
Luciano di Paolo
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: [GSOCseq AFACI Training Material](#)
- 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- [GSOCseq Technical Manual](#) (*Advance Copy, Unpublished - Not to be distributed, Copied, or Reproduced*)



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Agenda

DAY 1 (3h) - Opening and Introduction

1. High-Level opening (Dr. Park Joungyoon, AFACI Senior Deputy Secretary General, AFACI Secretariat)- 10'
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