ISRIC
World Soil Information

Soils and Climate change

ISRICs contribution to climate change adaptation and mitigation

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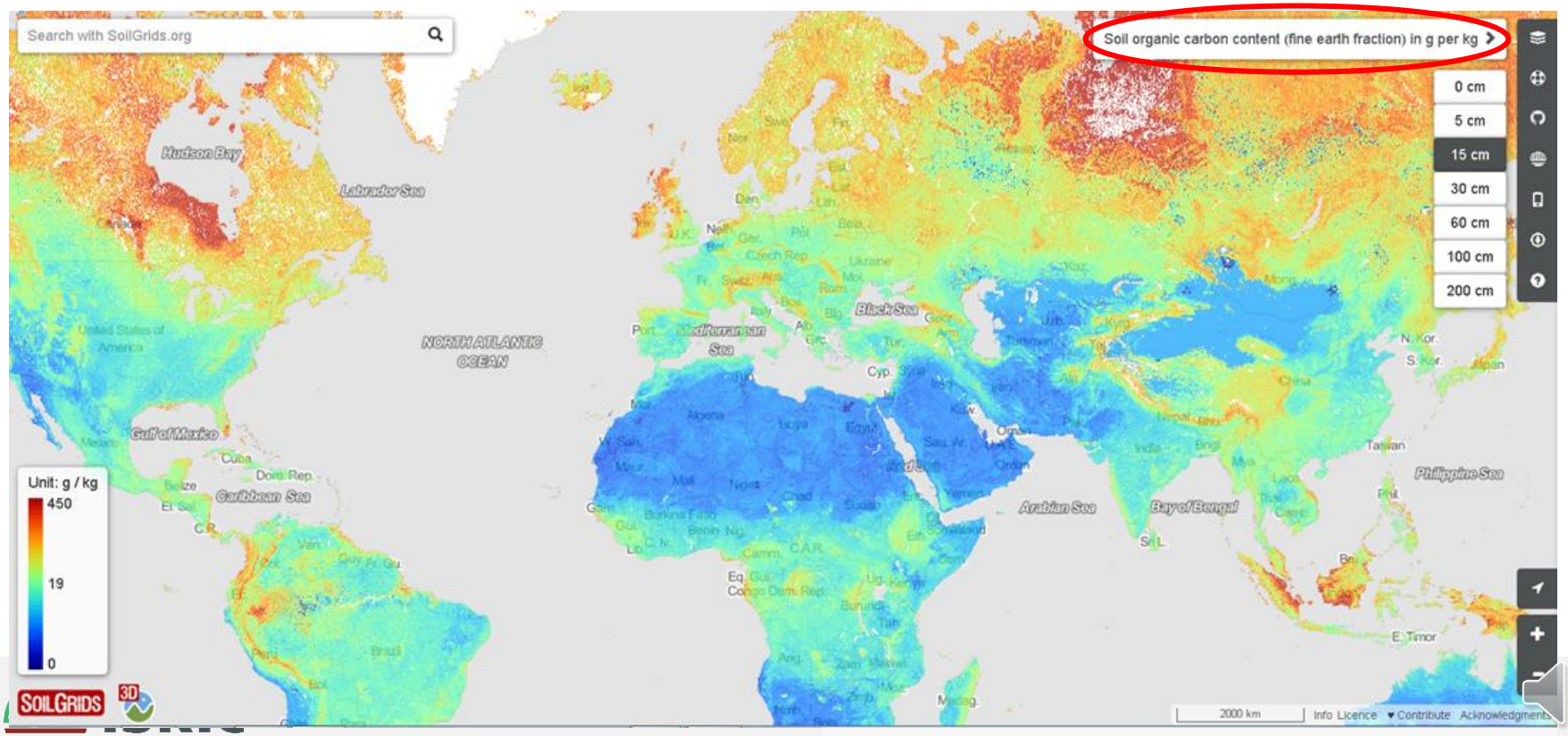
Soils and Climate change

- Soils are the **largest store of terrestrial carbon** on Earth;
- **Conserving and increasing soil organic carbon** can help to mitigate climate change, combat land degradation, and address food security;
- Farmers and other stakeholders can help **reduce GHG emissions from the soil by SLM practices** such as conservation tillage, residue management, or cropping management. Such interventions increase the input of organic matter into the soil and reduce the decomposition of soil organic matter;
- How much carbon a specific soil will store depends on various factors such as **soil type, regional climate, land use** (history) and **management**;
- **Reliable data and tools are needed** to support informed decisions concerning possible actions aimed at mitigation and adaptation;
- ISRIC serves as a reference base for the world's soils and has a range of **global soil databases in point or raster format**;
- ISRIC is involved in various climate change–related projects (next slides).

SoilGrids — global gridded soil information

- A system for automated soil mapping based on global compilation of soil profile data and publicly available remote sensing data.
- **SoilGrids** provides **global gridded data** for various key soil properties, including SOC concentrations and stocks, **at 250 m spatial resolution**.
- SoilGrids was used as **baseline** (default) dataset for 2017-2018 UNCCD reporting.



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https://www.isric.org/explore/soilgrids; https://soilgrids.org

Space-time Statistical Modelling of Soil Organic Carbon

Objectives

- This project develops, implements and applies a statistical **space-time SOC mapping** methodology, using Argentina as a (first) pilot area. Web-based visualization of the resulting time series of SOC maps is done in a parallel project;

Activities

- Assemble **soil profile data and covariates** for the pilot area, covering a 50 year time period;
- Develop a **space-time statistical model** and calibrate it using the available data;
- Make **space-time predictions of SOC concentration and SOC stocks** for the pilot area and chosen time period;
- **Quantify the uncertainties** associated with the predictions;
- **Run scenarios** to make future SOC predictions;
- Publish the project outcome in a **peer-reviewed scientific journal**;

Coordination of International Research Cooperation on soil CArbon Sequestration in Agriculture (CIRCASA)

- The EU H2020 CIRCASA project aims to strengthen synergies among researchers and promote the transfer of knowledge on carbon sequestration in agricultural soils. The project has partners in 17 countries in all continents;
- ISRIC will lead the development of a Knowledge Information System (KIS) that will host knowledge on carbon sequestration in agricultural soils;
- This KIS will include metadata and data from experiments, as well as models and methodological guidelines developed by CIRCASA;
- ISRIC will also take part in the development of an On-line Collaborative Platform (OCP), a networking tool aiming at bringing together researchers, stakeholders and practitioners in the field;
- Through these activities ISRIC will support the improved exchange and accessibility of information on carbon sequestration in agricultural soils;

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Thank you for listening

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