



Food and Agriculture
Organization of the
United Nations

The North American Partnership

GLOBAL SOIL PARTNERSHIP

11th Plenary Assembly

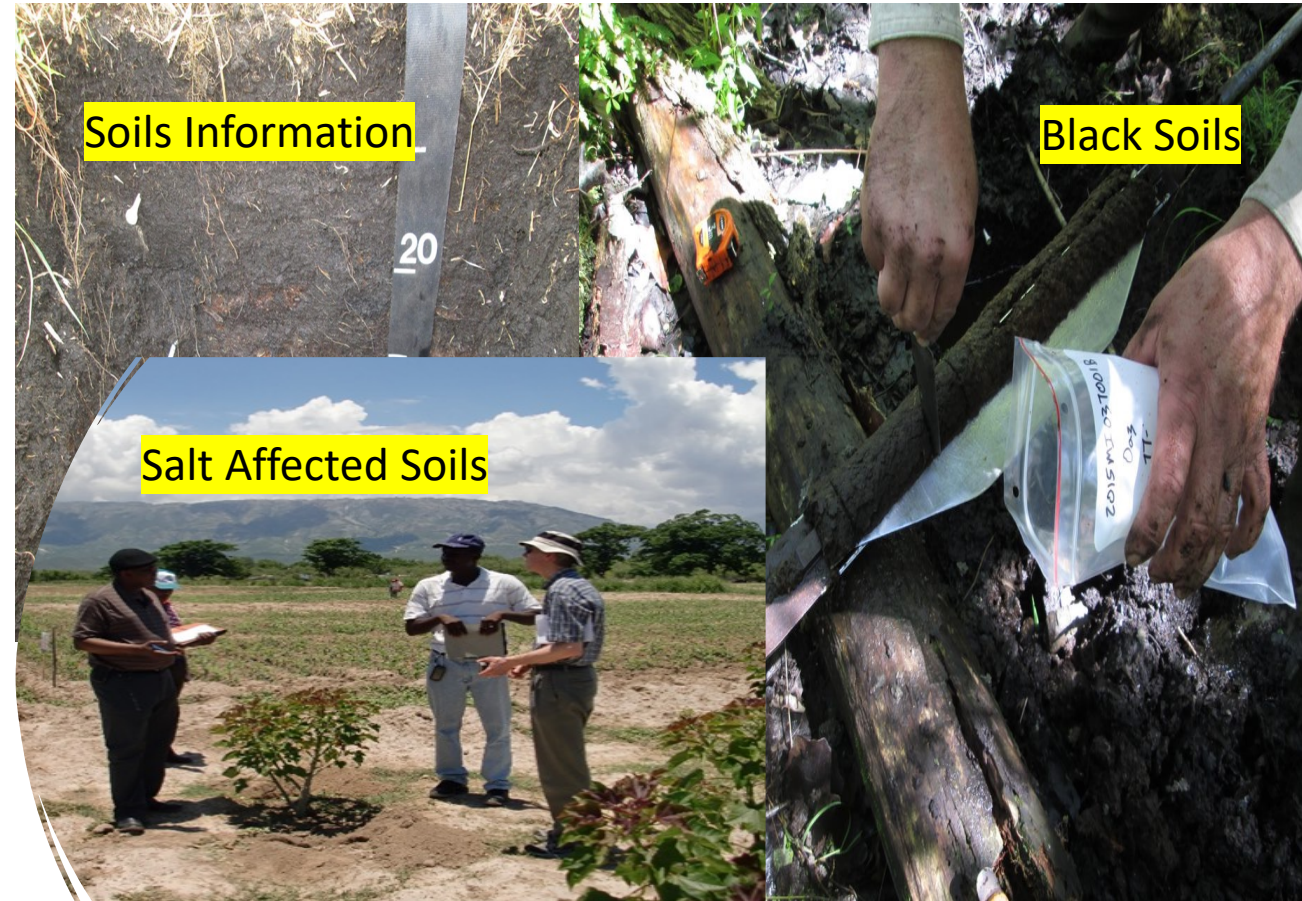
12-14 July 2023



North American Soil Partnership

Canada and the United States of America:

- Support targeted research on soil, focused on greenhouse GHG emissions from agriculture, soil biodiversity and the quantification of soil heath.
- The International Network of Soil Information Institutions (INSII)
- International Network of Salt-Affected Soils (INSAS)
- the Global Salt-affected Soils Map (GSASmap)
- International Network on Black Soils (INBS)
 - Map of Black Soils in North America
 - Chapters for Black Soils publication
- Working Group of GSP Action Framework Indicator System (ISAF)



2022 World Soil Day

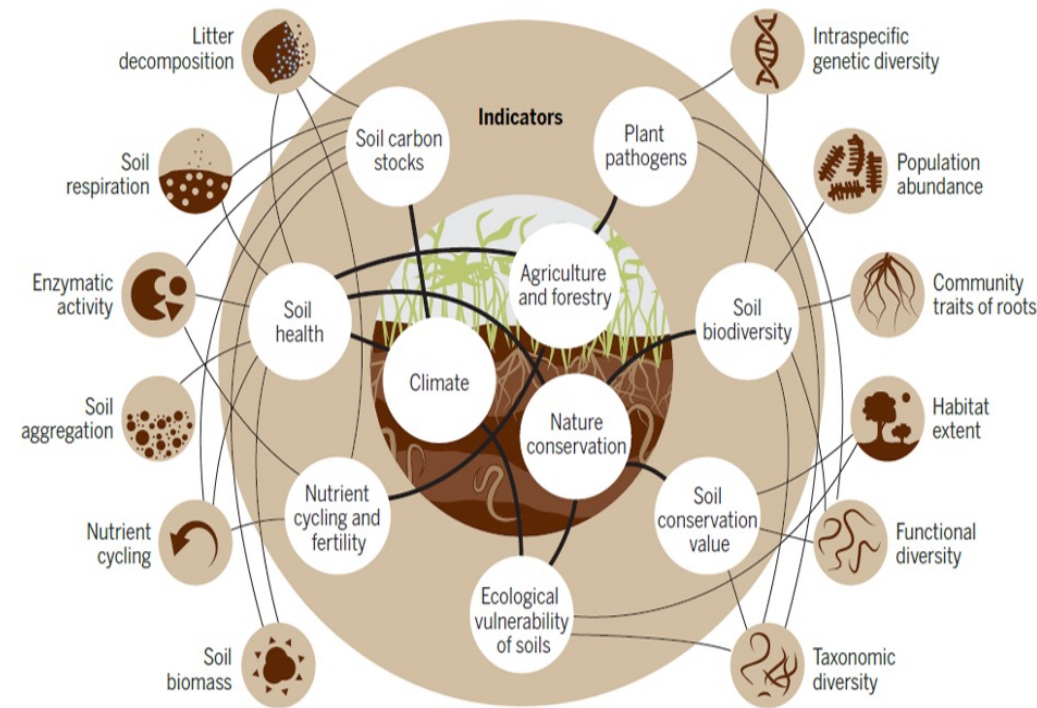
- **United States:** announcement of the USDA's ARS Agency on Soil Biology and Soil Health Research Team via social media including on Twitter, Facebook and the USDA website.
- **Canada:** Promotion of WSD on a variety of platforms (Twitter, Facebook, press releases, newsletters) by AAFC, the Canadian Society of Soil Science (CSSS) and Soil Conservation Council of Canada (SCCC), and others.



Soil Biodiversity

The North American Soil Partnership is also working with soil biodiversity. Participating in a number of related initiatives, including the Global Soil Biodiversity Observatory and the International Network on Soil Biodiversity (NETSOB).

- The Secretariat for the Global Soil Biodiversity Initiative (GSBI), based at Colorado State University (United States of America), is a partner of the GEOBON Soil Observation Network (SoilBON) and the Food Web research team.
- The GSBI and SoilBON are supporting the establishment of the Global Soil Biodiversity Observatory (GLOSOP) of the GSP, launched at COP15 of CBD in December 2022.
- Scientist from both countries are also contributing to the CBD-GSP review of the implementation of the International Initiative for the Conservation and Sustainable Use of Soil Biodiversity and the International Network on Soil Biodiversity (NETSOB).



North American Soil Partnership

Status of the World Soils Report:

- Regional Assessment Panel has been established.
- Contributing authors have been identified to lead the assessments of the various soil threats.
- Special sessions have been organized for the meetings of the Canadian Soil Science Society and the Soil Science Society of America to discuss these threats for the purpose of this report.
- Planning a related symposium at the 2023 Soil Science Society of America /American Society of Agronomy annual meeting.

Principles for Improving Soil Health

- Manage More by Disturbing Less
- Increase Diversity in Soil Biota and Plants
- Keep Living Roots in the Soil Year Round
- Keep the Soil Covered as Much as Possible



Soil Research

In the United States of America, the United States Department of Agriculture (USDA) partner research agencies support activities and collaborations, closely aligned with Pillar 3 of the GSP.

- Natural Resources Conservation Service (NRCS),
- Agricultural Research Service (ARS)
- the National Institute of Food and Agriculture (NIFA)
- National Science Foundation (NSF)

In Canada, AAFC provides science and innovation resources for Canadian scientists to research practices that:

- benefit soil health, and related issues such as soil carbon sequestration
- nitrogen and carbon dynamics;
- soil microbiome; and
- reducing soil chemical, biological and physical degradation.

AAFC is also investing in soil data renewal and mapping of soil carbon sequestration potential using recently-developed predictive mapping and ecosystem modelling.



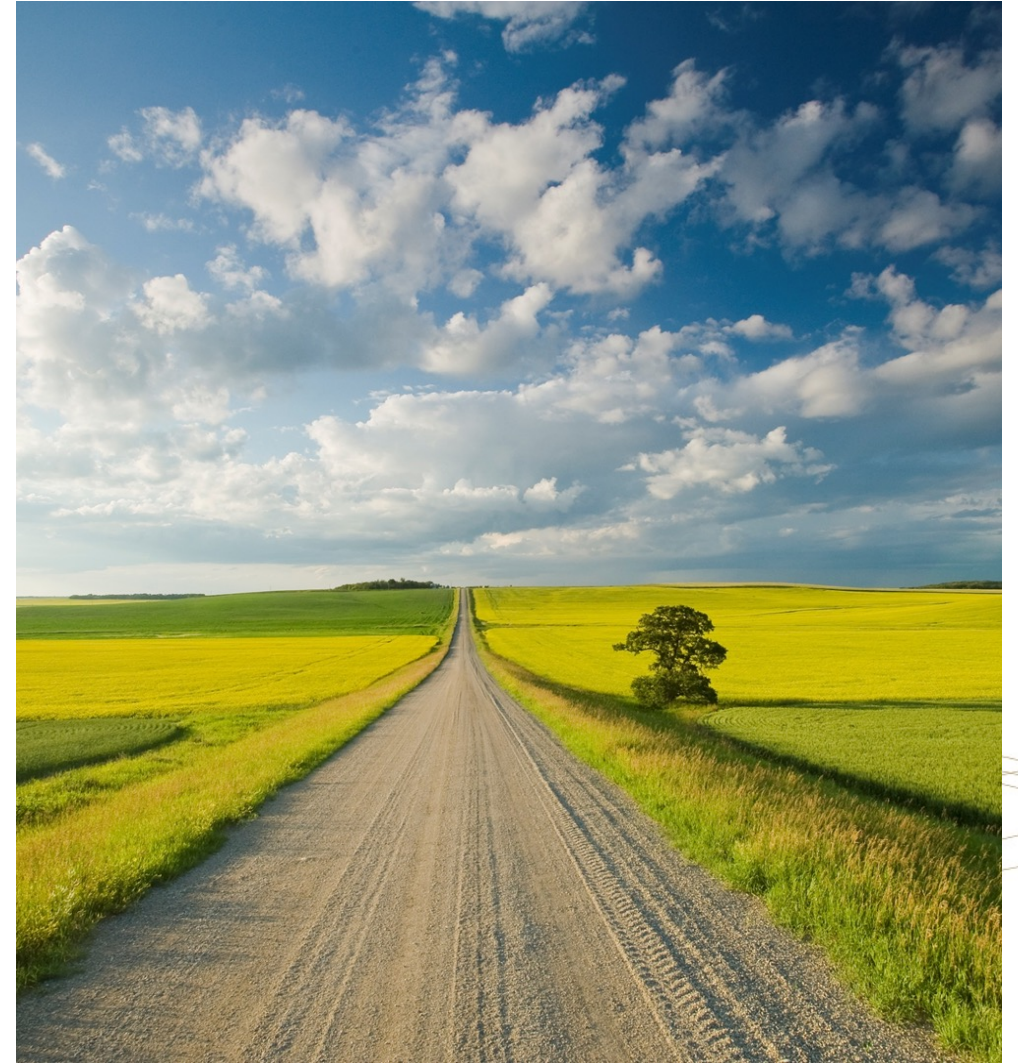
Highlights: Soil Health in Canada

AAFC's new Strategic Plan for Science

- Mission-driven approach which focuses science on clearly defined goals and outcomes.
- Promotes a variety of scientific approaches to ensure a sustainable, resilient, and profitable agriculture and agri-food sector by 2050 in four priority areas:
 - mitigating and adapting to climate change;
 - **increasing the resiliency of agro-ecosystems, including enhanced and protected soil and water resources and enhanced biodiversity and resilience;**
 - advancing the circular economy; and
 - accelerating the digital transformation of the agriculture and agri-food sector.

Report on the Status of Soil health in Canada

- In 2022, the Senate of Canada initiated formal hearings on the status of soil health in Canada.
- Testimony from soil scientists from many universities, government and industry agencies.



United States Highlights: Global Soil Laboratory Network (GLOSOLAN)

USDA-NRCS, SPSS Kellogg Soil Survey Laboratory (KSSL)

- Soil spectroscopy training to FAO-GSP GLOSOLAN personnel
- Soil sample exchange and analysis project with the Soil and Water Research Institute (SWRI) of the Islamic Republic of Iran
- Compared methods
 - Soil inorganic carbon
 - Soil organic carbon
 - Optimal standards for measuring SIOC and SOC.
- Presented results:
 - Nebraska Society of Professional Soil Scientists
 - Society for Range Management joint symposium: Healthy Soil, Healthy Range (April 2023)

Spectral Analysis

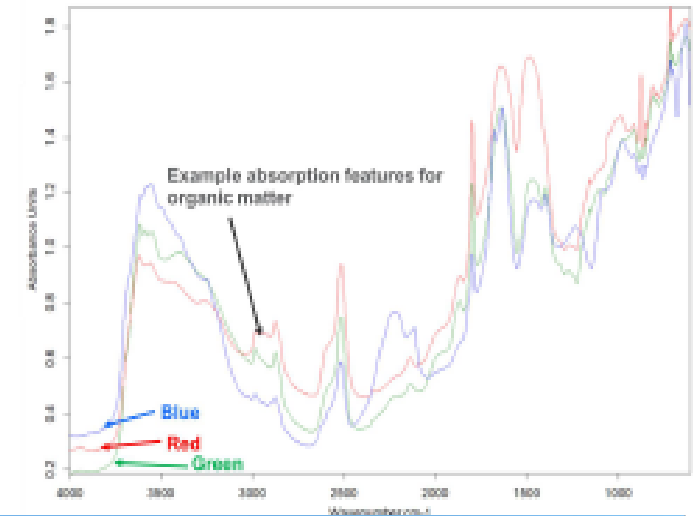
MIR spectra have features that are known to rise and fall with SOC content.

Figure 3.
The absorbance spectra of three samples with different SOC contents.

Red: 1.4 % SOC

Green: 0.7 % SOC

Blue: 0.3 % SOC

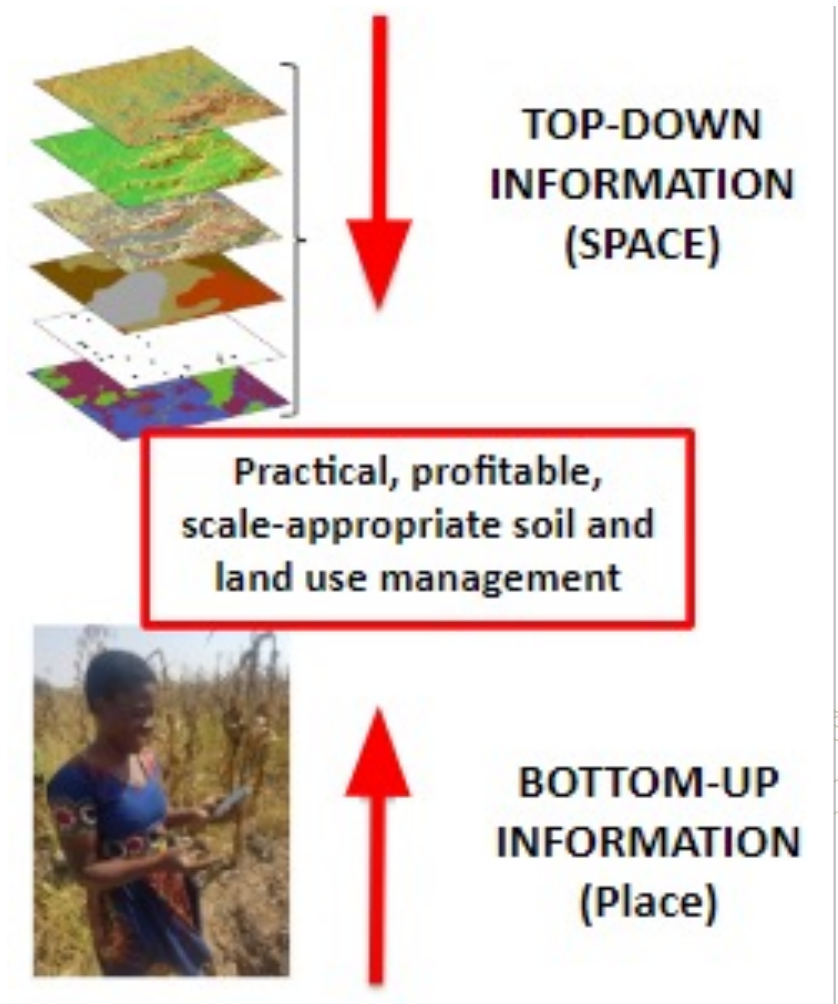


GLOSOSAN REPRESENTATIVES - Filippo Benedetti (FAO) and Rich Ferguson (USDA)

United States Highlights: SoilFER, Space-to-Place, Accelerated Innovation Delivery-Initiative

New initiatives to improve soil maps and their use, technical capacity, and access to high quality inputs and extension to increase productivity and combat the current fertilizer crisis.

- FAO SoilFER - \$20 million fertilizer use efficiency and extension capacity initiative, starting in Guatemala, Honduras, and Zambia
- Space-to-Place – \$67 million farm-level fertilizer use efficiency and soil health initiative to increase sustainable production in sub-Saharan Africa.
- AID-I (Accelerated Innovation Delivery Initiative) – \$70 million to ensure smallholder farmers in in sub-Saharan Africa have access to high quality information and scientific innovations.





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Thank you

