



Food and Agriculture
Organization of the
United Nations

22-24 November 2022

Collaboration opportunities with International Network on Black Soils (INBS)



6th Meeting of the
**Global Soil
Laboratory
Network**
(GLOSOLAN)

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GLOSOLAN
GLOBAL SOIL LABORATORY NETWORK



Outlines

- Overview of INBS and its mission;
- INBS's workplan;
- Potential future collaboration with GLOSOLAN.

What are Black soils?

Black soils are mineral soils which have a black surface horizon, enriched with organic carbon that is at least 25 cm deep (FAO/ITPS, 2019).



Black soils having all five properties

The presence of black or very dark surface horizons typically with a chroma of ≤ 3 moist, a value of ≤ 3 moist and ≤ 5 dry (by Munsell colours);

The total thickness of black surface horizons ≥ 25 cm;

Organic carbon content in the upper 25-cm of the black horizons of $\geq 1.2\%$ (or $\geq 0.6\%$ for tropical regions) and $\leq 20\%$;

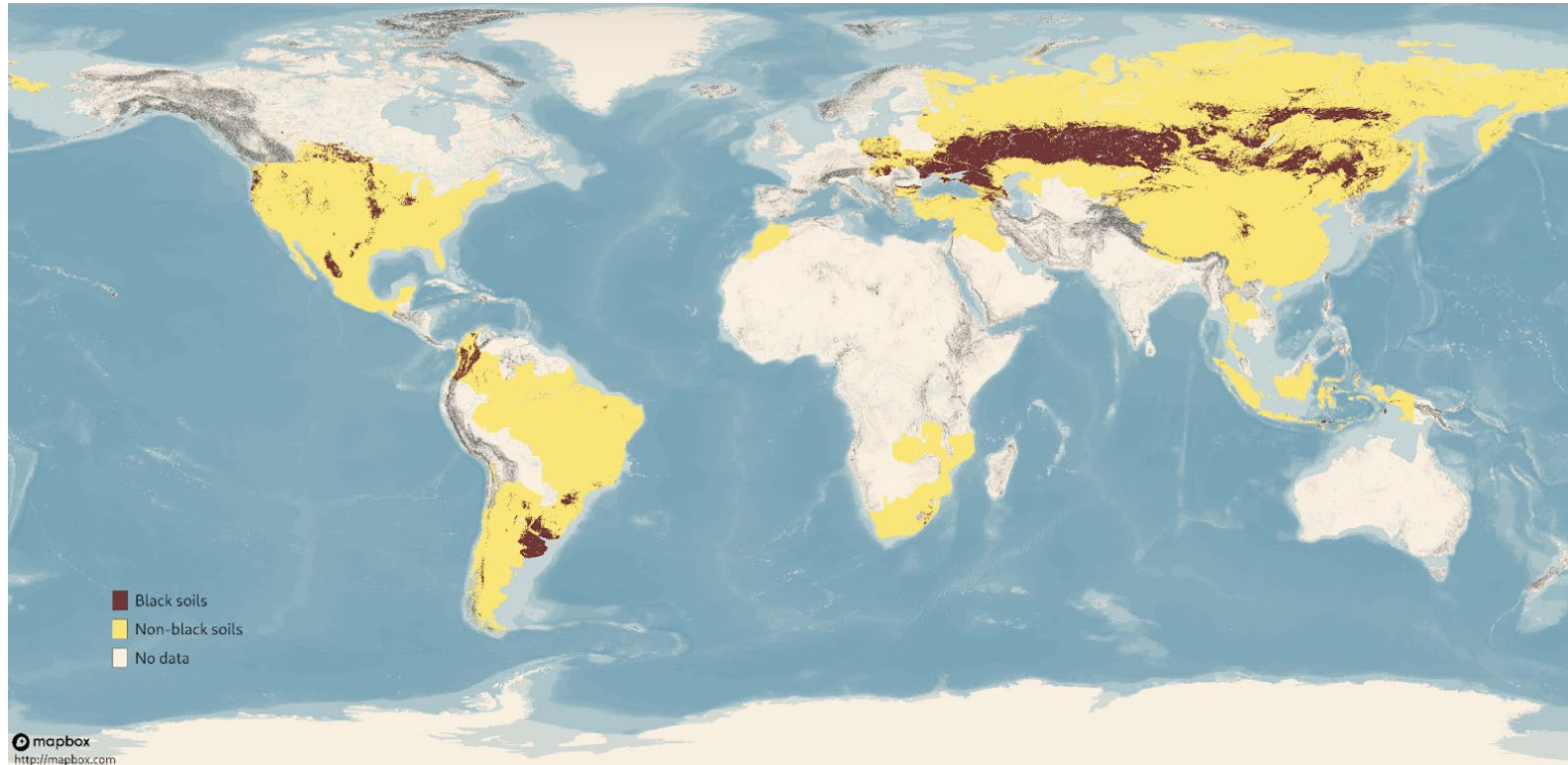
CEC in the black surface horizons ≥ 25 cmol/kg;

A base saturation in the black surface horizons $\geq 50\%$

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Where are Black Soils?



725 million hectares

5.58% of Global Land Area

Global Black Soil Distribution Map (GBSmap), launched in 10th GSP Plenary Assemble on 23th May 2022

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Multiple benefits of black soils



Food security

- High organic matter and fertility
- Good soil structure
- Enhance farmer income

Human well-being

- Providing nutritious food
- Enriching folks culture
- Offering alternative livelihoods

Ecosystem services

- SOC sequestration
- Soil biodiversity maintenance
- Fertility maintenance
- Prevention of waterlogging and compaction

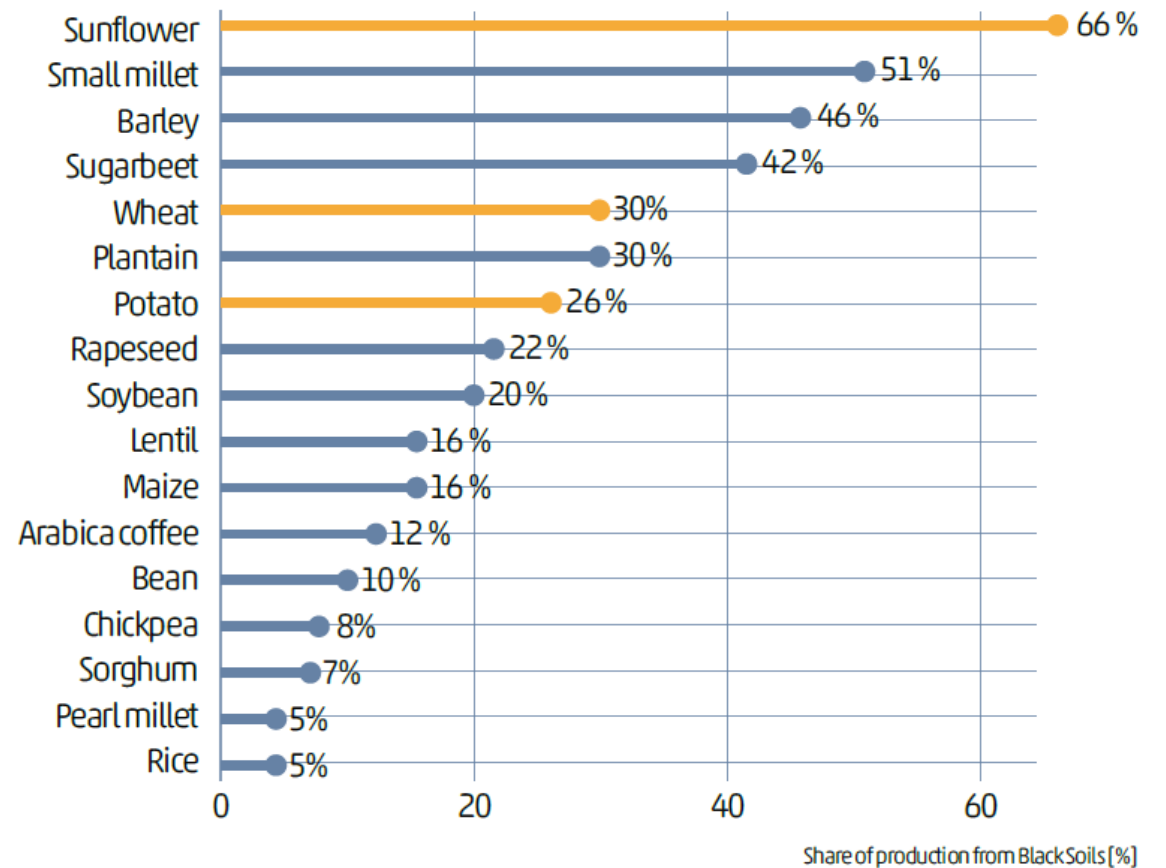
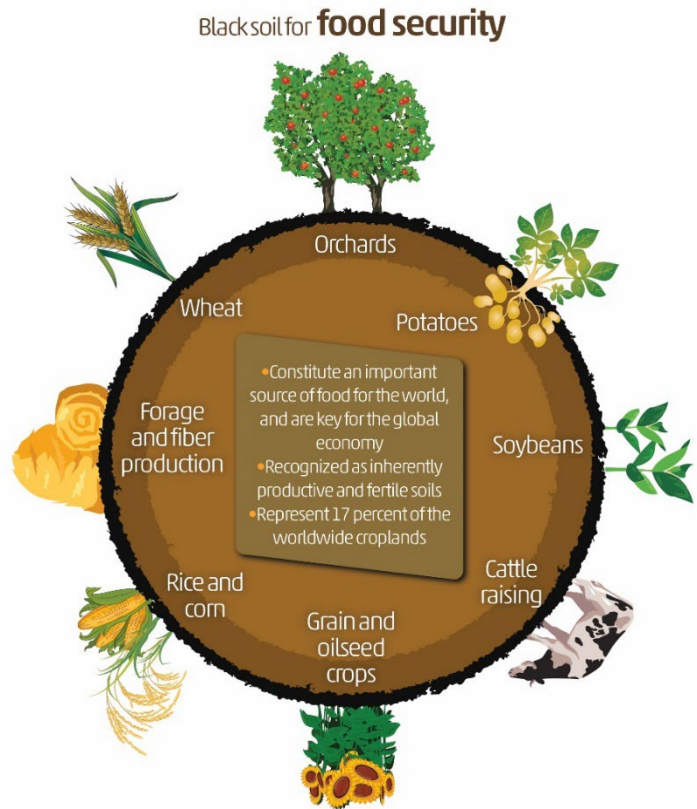
Climate change mitigation and adaptation

- Increase resilience to droughts and floods
- GHGs balance
- Reduce global warming
- High SOC storage and SOC sequestration

Why Black Soils matter ?



Why Black Soils matter ?



227 million hectares

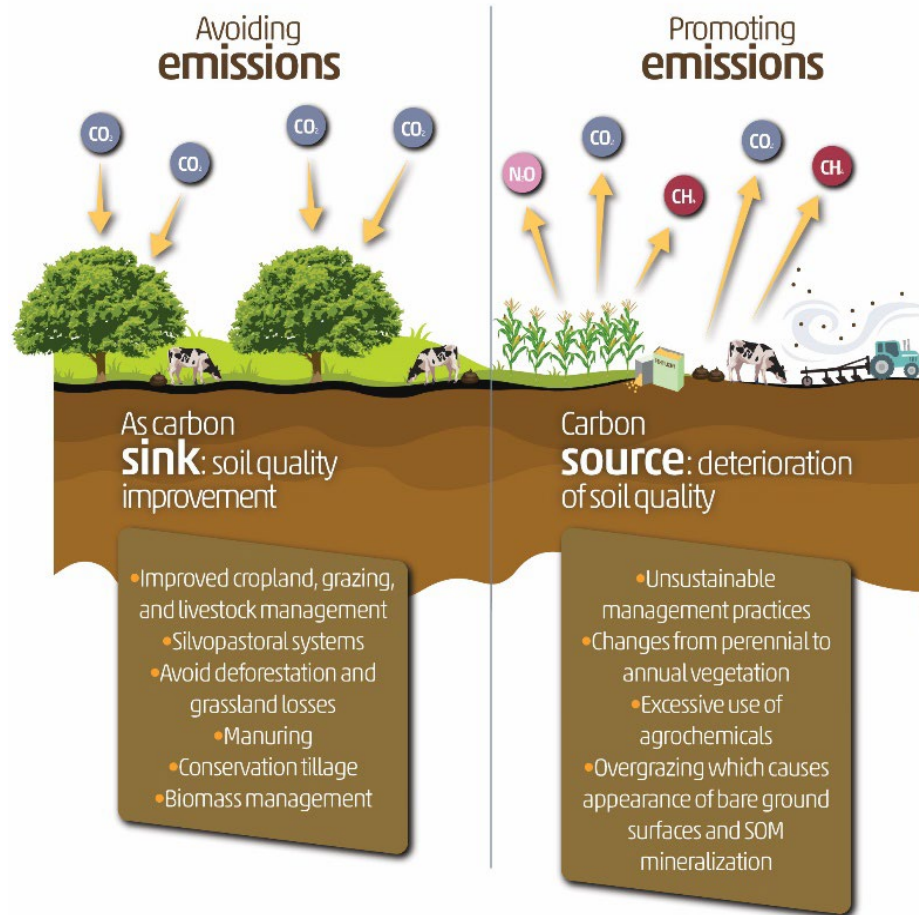
17% of the Global Cropland Area

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Why Black Soils Matter ?

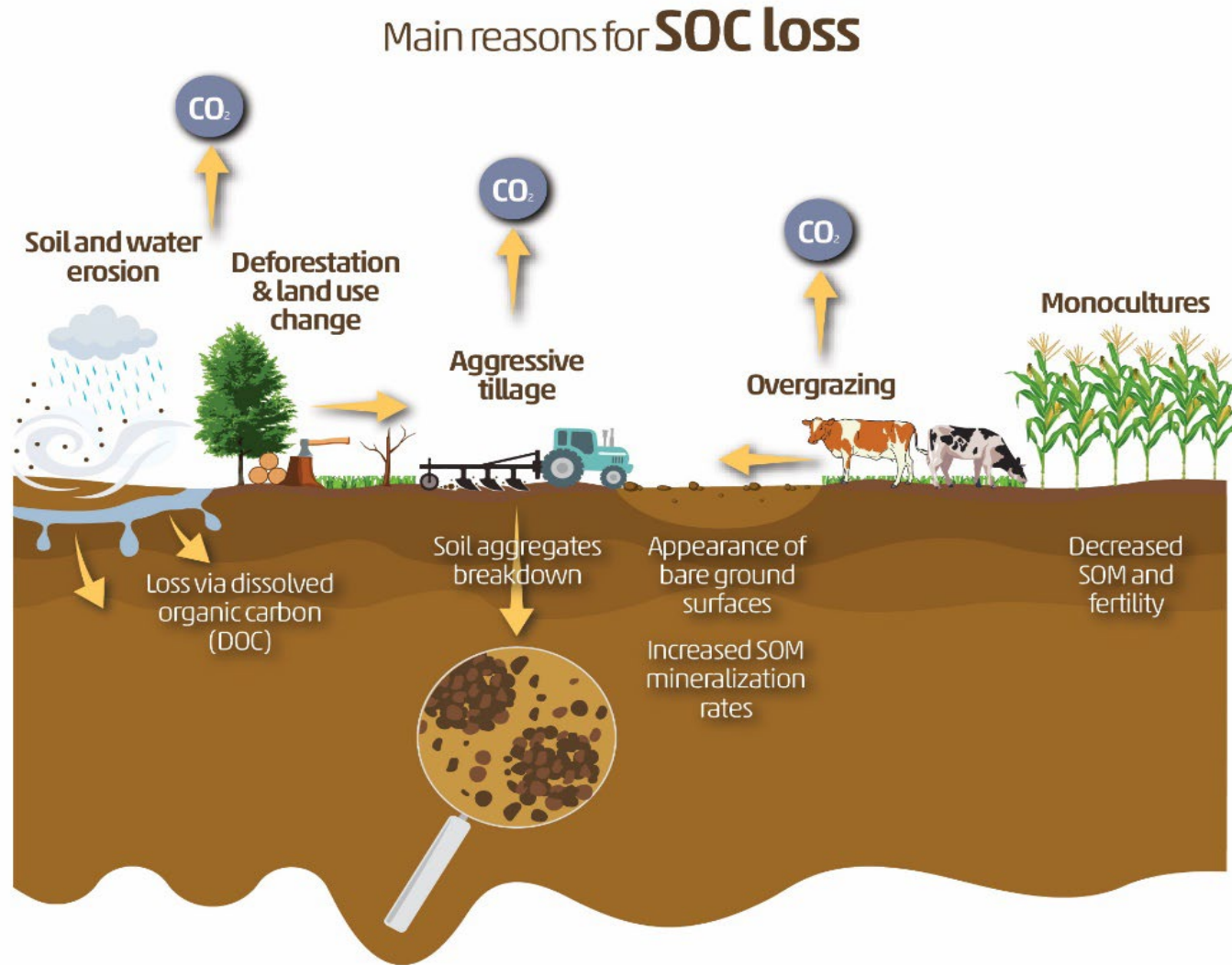
Blacksoils, a **sink** or a **source** of carbon?



66.7 PgC

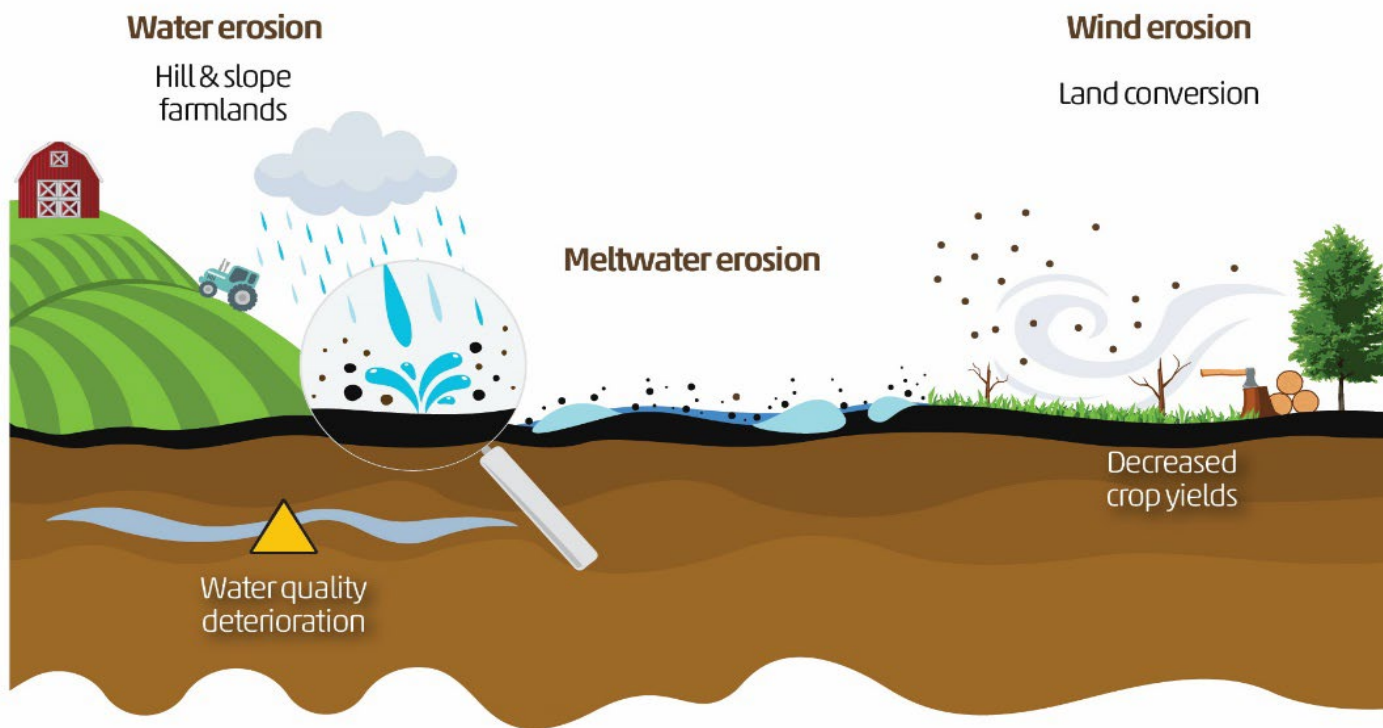
8.2% Proportion of the global SOC stock

How are Black Soils threatened?



How are Black Soils threatened?

Land use change



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Wind erosion in Liaoning province, China. Zhiqiang Zhou.

Launch of the INBS

- Considering the great importance of black soils and their risk of **severe degradation**, it has become crucial to promote their conservation and sustainable use,
 - And to unlock their potential in the longer term to support **food security** while protecting the environment and **mitigating climate change**.
- On the basis of recommendation of the FAO's Global Soil Partnership (GSP) on the UN's Sustainable Development Goals (SDG) and the discussions and decisions from the Global Symposium of Soil Organic Carbon, the International Network of Black Soil (INBS) has been launched in Rome in March 2017.



Progress of the INBS



- ❑ Launched the Global Black Soil Distribution Map (GBSmap) on 23 May 2022;
- ❑ The establishment of an International Research Institution of Black Soils in June 2022;
- ❑ the Report on the Global Status of Black soils is under preparation and will be launched in December 2022.



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Action plan 2023

1. Implement black soil monitoring activities at the national and global levels;
2. Develop a technical manual on black soil management;
3. Propose an unbinding international agreement for sustainable black soil management;
4. Support actions in the field of member countries to ensure soil fertility and mitigate climate change;
5. Promote knowledge exchanges among INBS members.

SOPs related to black soils

- ✓ soil organic carbon by Walkley and Black
 - ✓ soil total carbon by Dumas
 - ✓ soil organic carbon by Tyurin
 - ✓ soil organic matter by Loss of ignition
-
- CEC
 - Base saturation

33 members of INBS

the United States of America	the Republic of Indonesia	the Kingdom of Morocco
EU	the Republic of Turkey	the Republic of Armenia
Canada	the Federative Republic of Brazil	the Republic of Chile
the Republic of Kazakhstan	Mongolia	South Africa
People's Republic of China	the Eastern Republic of Uruguay	Poland
the Russian Federation	the Republic of Bulgaria	Nepal
Hungary	the Slovak Republic	Thailand
Ukraine	the Republic of Mozambique	Colombia
the Argentine Republic	the Syrian Arab Republic	Georgia
the Kyrgyz Republic	the Republic of Iraq	Maxico
the Republic of Moldova	the Republic of Zambia	Kenya

Chair: Ivan Vasenev, ivvasenev@gmail.com

Coordinator of INBS: Yuxin.tong@fao.org

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A decorative graphic consisting of a series of squares and dots in shades of orange, yellow, and grey, arranged in a curved path that points towards the GLOSOLAN logo.

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Thank you!

