



Food and Agriculture
Organization of the
United Nations

GLOBAL SOIL PARTNERSHIP 10th Plenary Assembly



23-25
May 2022

VIRTUAL
MEETING

Global Black Soil Distribution Map GBSmap

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GSP Secretariat





BLACK SOILS MATTER



Photo Xingzhu Ma

Black soils constitute the food basket for many countries and for the world in general and are often recognized as inherently productive and fertile soils.



INTERNATIONAL NETWORK OF BLACK SOILS



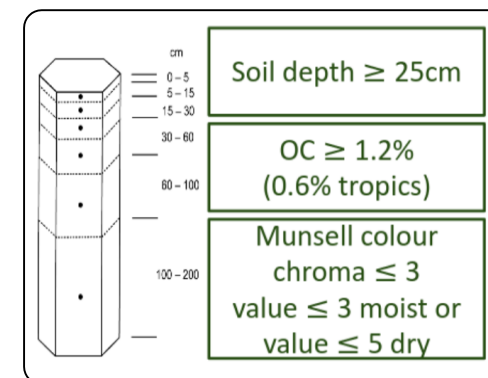
The **International Network of Black Soils (INBS)** aims to provide a **platform for knowledge** sharing for countries with black soils to discuss common issues related to the **conservation and sustainable management** of these soils and the need to foster technical exchanges and cooperation.

BLACK SOILS - DEFINITION



Photo Xingzhu Ma

According to INBS, black soils are mineral soils which have a black surface horizon, enriched with organic carbon that is at least 25 cm deep.





INTERNATIONAL NETWORK OF BLACK SOILS

INBS's priorities (Harbin, China - 2018)

1. Complete a delineation of the areas identified as Black Soils according to the criteria adopted at National level;
2. Support the implementation of the Voluntary Guidelines for Sustainable Soil Management in the areas designated at National level as black soils;
3. Perform a global assessment of black soils and publish it as a formal report of the Global Soil Partnership;
4. Establish a capacity development programme on the management of black soils;
5. Prepare a policy brief on the importance of black soils and advocate for the implementation of binding legislation for the full protection of these soils for future generations;
6. Black Soils Data streamline as part of a monitoring sub-component of the Global Soil Information System (GloSIS).
7. Develop the "Best Available Practice" Knowledge Bank as part of INBS Information System.





MAPPING BLACK SOILS



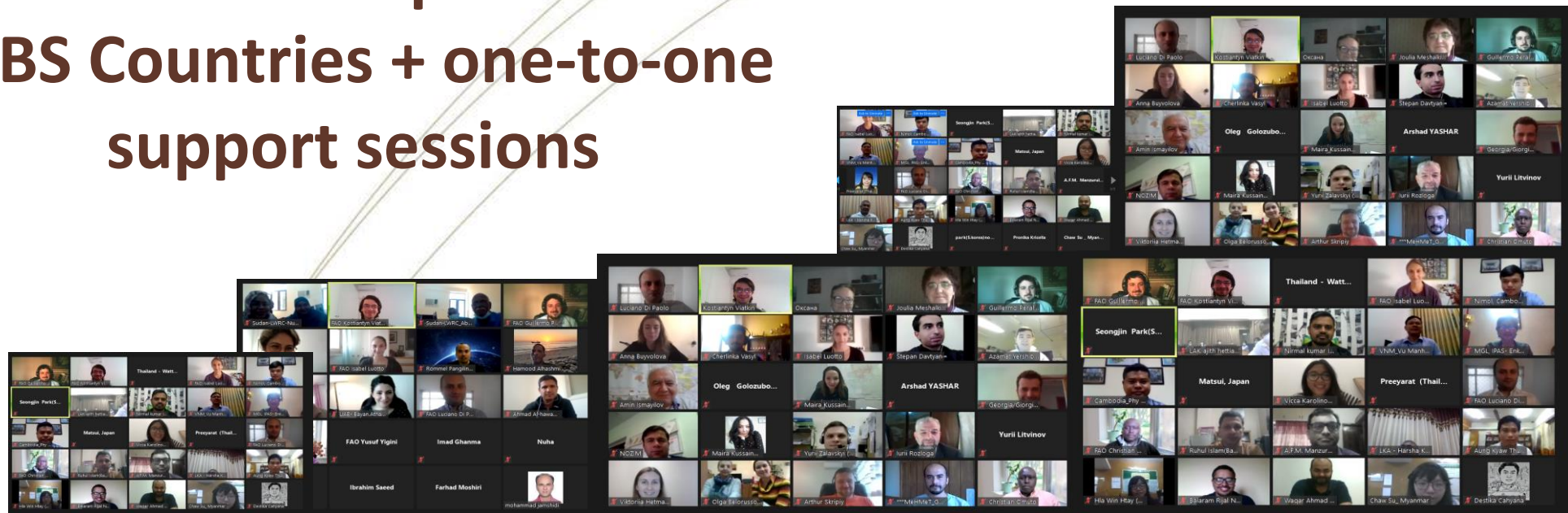
MAPPING BLACK SOILS

GBSmap Training

9-11 December 2020

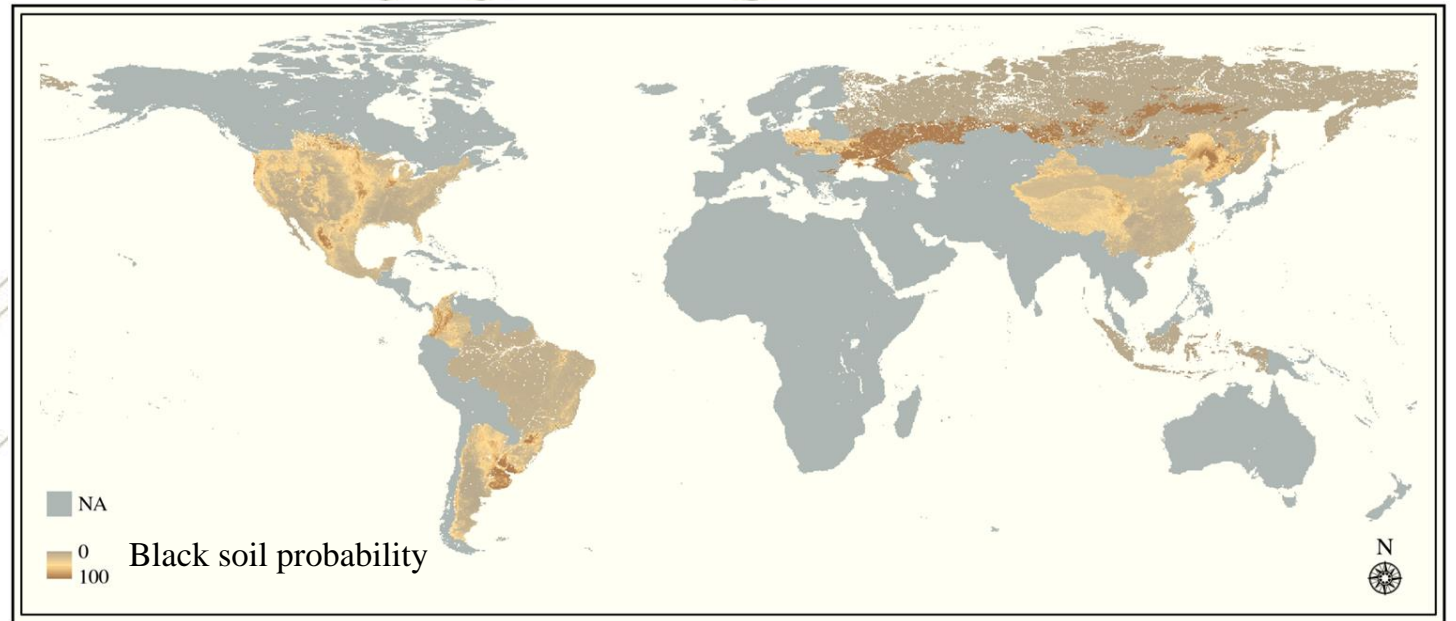
45 Participants

INBS Countries + one-to-one
support sessions

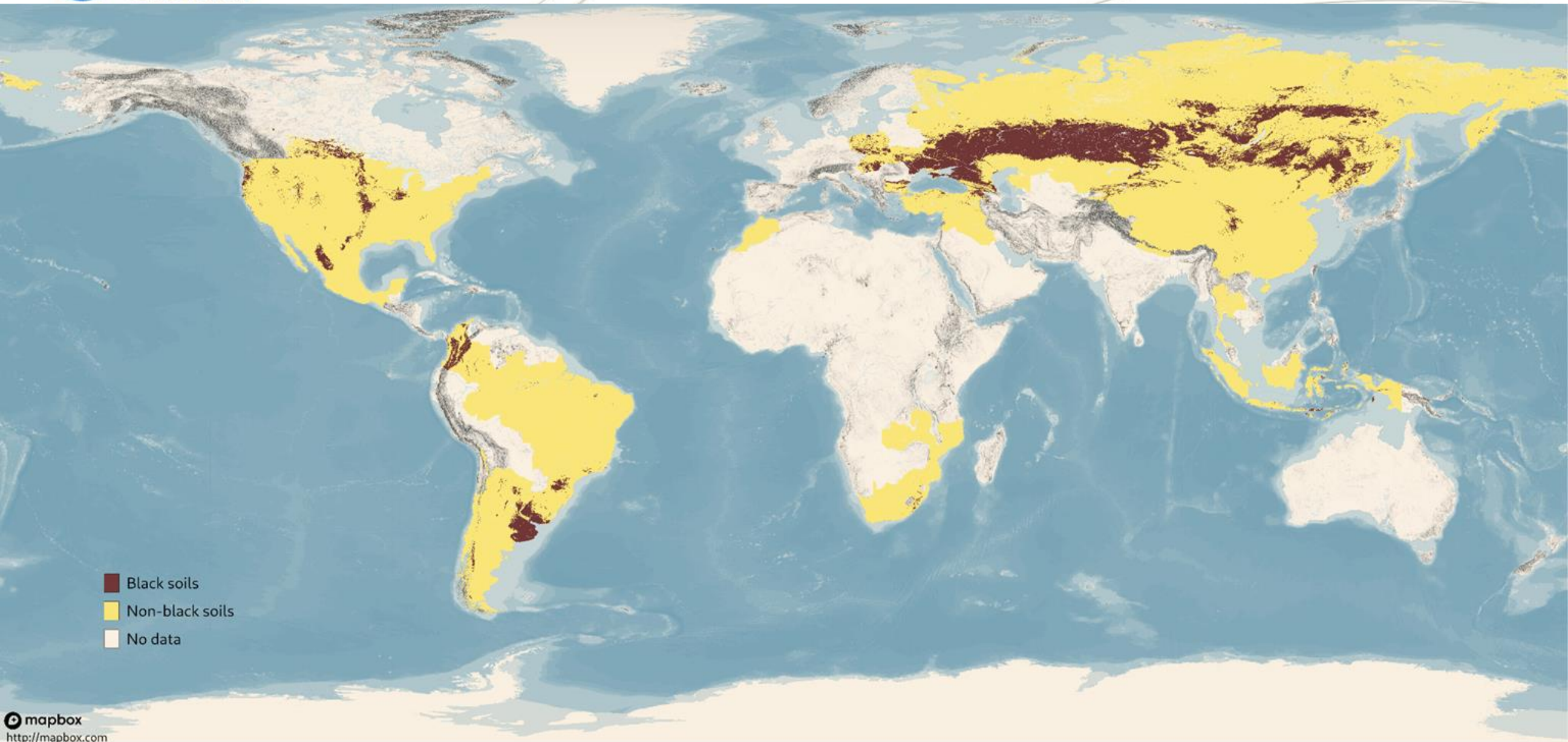


NATIONAL MAP SUBMISSIONS

1. Argentina (probability map)
2. Brazil (probability map)
3. Bulgaria (detailed polygon maps)
4. Canada (probability map)
5. China (probability map)
6. Colombia (probability map)
7. Indonesia (detailed polygon maps)
8. Mexico (probability map)
9. Poland (probability map)
10. Russian Federation (detailed polygon maps)
11. Slovakia (detailed polygon maps)
12. Ukraine (probability map)
13. United States of America (probability map)
14. Uruguay (probability map)



Global Black Soil Map v.1.0 (INBS Members)





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**725 million
hectares**

Global Area of Black Soils

5.58%

of Global Land Area

Russian Federation holds
326.8 Mha of Black Soils

86% of Moldova is Black Soils

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	Country	BS area ▾
1.	Russian Federation	326.8M
2.	Kazakhstan	107.7M
3.	China	50M
4.	Argentina	39.7M
5.	Mongolia	38.6M
6.	Ukraine	34.2M
7.	United States of America	31.2M
8.	Colombia	24.5M
9.	Canada	13M
10.	Mexico	11.9M

	Country	BS Population ▾	Total Population	BS population share
1.	Russian Federation	68M	141.2M	48%
2.	China	32M	1.4B	2%
3.	Colombia	31M	62.7M	49%
4.	Argentina	23M	44.4M	51%
5.	Ukraine	23M	43.7M	52%
6.	Poland	9M	39.1M	23%
7.	Kazakhstan	8M	18.2M	42%
8.	Indonesia	5M	277.1M	2%
9.	United States of America	4M	343.2M	1%
10.	Hungary	3M	9.4M	37%





66.7PgC

Total SOC stock in Black Soils

10%

Proportion of the global SOC stock

20% SOC Stocks in Eurasia held by Black Soils

47% potential SOC sequestration of Eurasia is
under Black Soils



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Black soils and croplands

**227 million
hectares**

of Croplands on Black Soils

17%

of the Global Cropland Area

Russian Federation, Ukraine & Kazakhstan have more than 70% of croplands under Black Soils

Black Soils Feed the World!

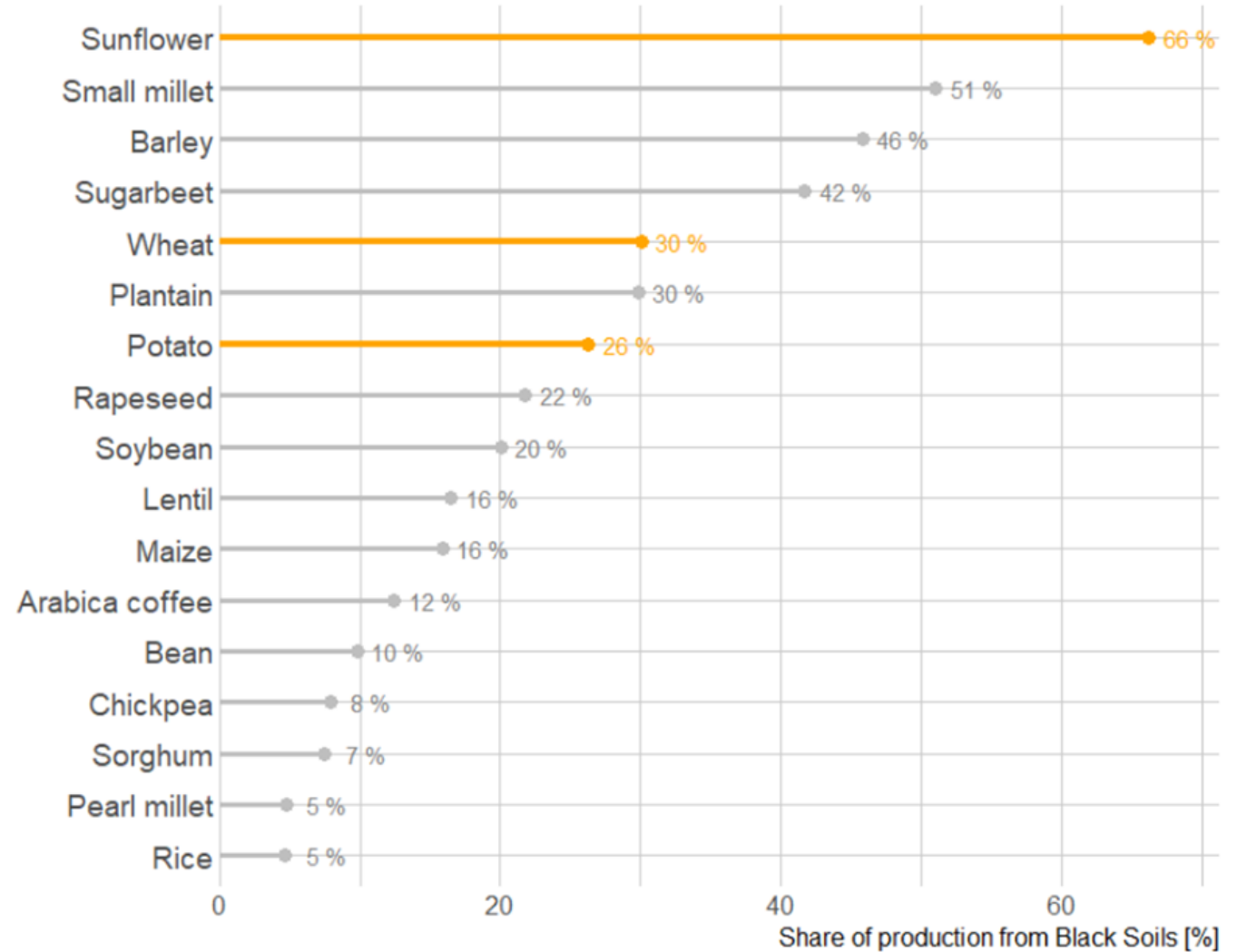
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BLACK SOILS FEED THE WORLD

They not only sustain **people settled on them** but also the rest of the world through exports. Key for **food security** and the **global economy**, a significant share of oilseed, cereal, and tuber crops are cultivated in black soils. Globally, **66 percent of sunflower seed**, **30 percent of wheat** and **26 percent of potato** outputs were harvested from black soils



Global Spatially-Disaggregated Crop Production Statistics Data for 2010 Version 2.0





"Protect black soils, invest in the future"

- Protect and conserve **Black Soils**
- Policies and legal instruments
- Monitoring of **Black Soils**



Photo George Laetoli



Challenges & Way forward

Challenges:

- Data availability
- Lack of recent data
- Lack of soil colour data

Way forward and next steps:

- Working with INBS & INSII to extend the coverage to global area
- Translating GBSmap into action

More Information, Statistics and Data Access

fao.org/global-soil-partnership/GBSmap/



Acknowledgments

INRA- Morocco; Mozambique Agricultural Research Institute; ARC-Institute for Soil, Climate, and Water; Ministry of Agriculture and Livestock; Institute of Soil Science, Chinese Academy of Science; Nanjing Institute of Geography & Limnology, Chinese Academy of Science.; Indonesian Center for Agricultural Land Resource Research and Development, Agency for Agricultural Research and Development, Ministry of Agriculture; Mongolian University of Life Sciences Darkham-Uul; Soil Management Section, Department of Agriculture; Heilongjiang Academy of Black Soil Conservation and Utilization, Heilongjiang Academy of Agricultural Sciences; Agricultural Research Officer, Office of Land Use Planning and Policy, Land Development Department, Ministry of Agriculture and Cooperatives; Armenian Scientific Center of Soil Science, Agrochemistry and Melioration after H. Petrosyan; Uspanov Kazakh Research Institute on Soil Science and Agrochemistry; scientific secretary, Institute of Pedology, Agrochemistry and Soil Protection; Russian State Agrarian University - Moscow Timiryazev Agricultural Academy; Severtsov Institute of Ecology and Evolution of the Russian Academy of Sciences; South Federal University; Lomonosov Moscow State University; Irkutsk State University; Dokuchaev Soil Science Institute; Ministry of Food, Agriculture and Livestock; National Scientific Center «Institute for Soil Science and Agrochemistry Research named after O.N. Sokolovsky»(NSC ISSAR); National Scientific Center «Institute for Soil Science and Agrochemistry Research named after O.N. Sokolovsky», Kharkiv, Ukraine; Institute of soil science, agrotechnologies and plant protection Nikola Poushkarov; Joint Research Centre, European Commission; Head of Laboratory of the Scientific-Research Center of MEPA, Associated professor; Department of Crop Production and Soil Science, University of Pannonia; Chairman of the teaching methods Commission; Institute of Soil Science and Plant Cultivation, State Research Institute; University of Zielona Góra; National Agricultural and Food Centre, Soil Science and Conservation Research Institute, Banská Bystrica; National Institute of Agricultural Technology; Embrapa Solos; Universidade Federal de Santa Maria.; Universidade Federal da Paraíba.; Universidade do Estado do Amazonas; Universidade Federal da Paraíba; Universidade Federal Rural do Rio de Janeiro; Departamento de Protección y Conservación de Suelos y Aguas, División de Protección de Recursos Naturales Renovables; Agustín Codazzi Geographical Institute; Centro de Geociencias - Universidad Nacional Autónoma de México; Secretaría de Agricultura y Desarrollo Rural; Directorate General of Natural Resources (DGRN) of the Ministry of Livestock, Agriculture and Fisheries (MGAP) for Uruguay; General Direction of Natural Resources-Ministry of Livestock, Agriculture and Fisheries; Office of Planning and Follow-up; General Commission of Scientifics Agriculture Research (GCSAR) Damascus – Syria/Institute of Geography, FAU Erlangen Nurnberg University; Canadian Soil Information Service (CanSIS), Science and Technology Branch, Agriculture and Agri-Food Canada; United States Department of Agriculture;



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