



Food and Agriculture
Organization of the
United Nations



4th Workshop of the International Network of Black Soils

Collaborations
between INBS
and GLOSOLAN

Filippo Benedetti, GSP Secretariat

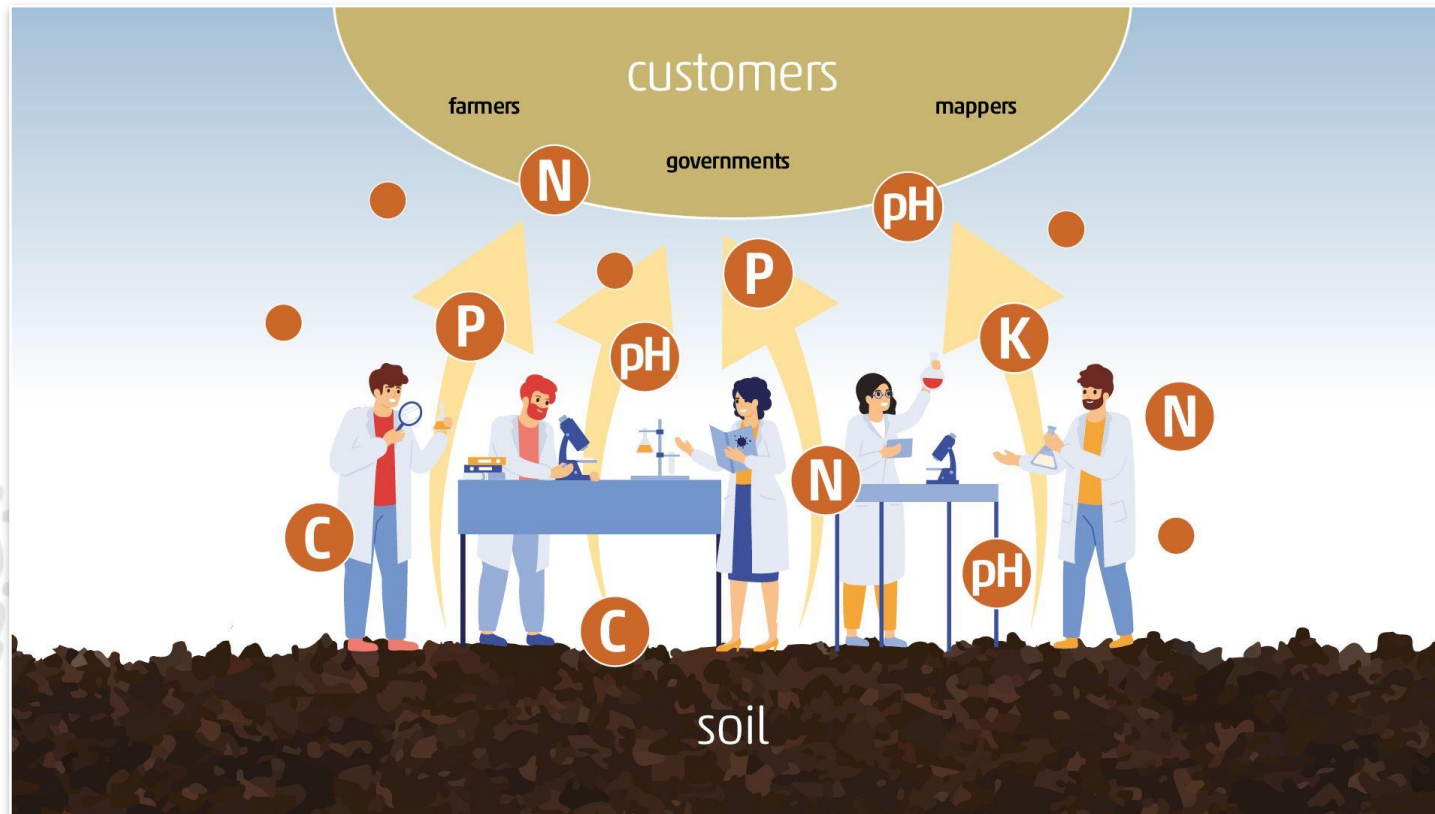


30 March 2023





Established in 2017 to harmonize soil laboratory methods and data, and to build the capacity of laboratories in soil analysis



30 March 2023

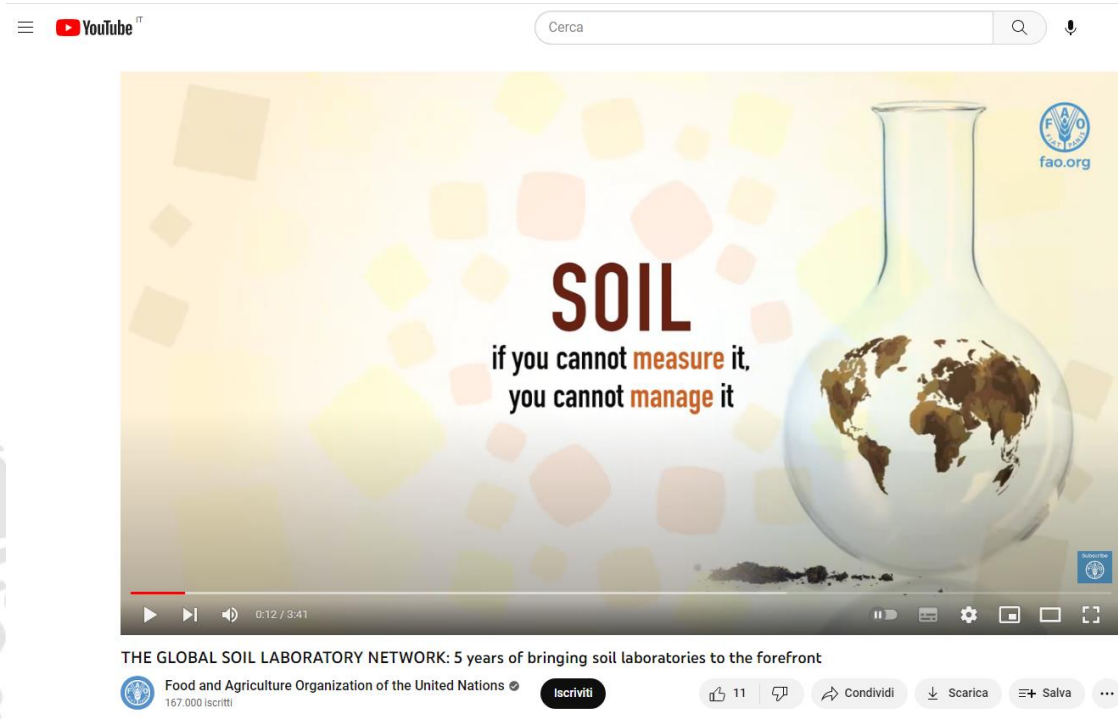


Mission: Improve the analytical capacity of soil laboratories, worldwide



November 2022: 5th anniversary celebrations

High-profile event on the work done so far
to bring soil laboratories to the forefront



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Three major areas of work:



- Harmonization of Standard Operation Procedures (SOPs)
- Training on the implementation of GLOSOLAN SOPs
- Training on safety and health



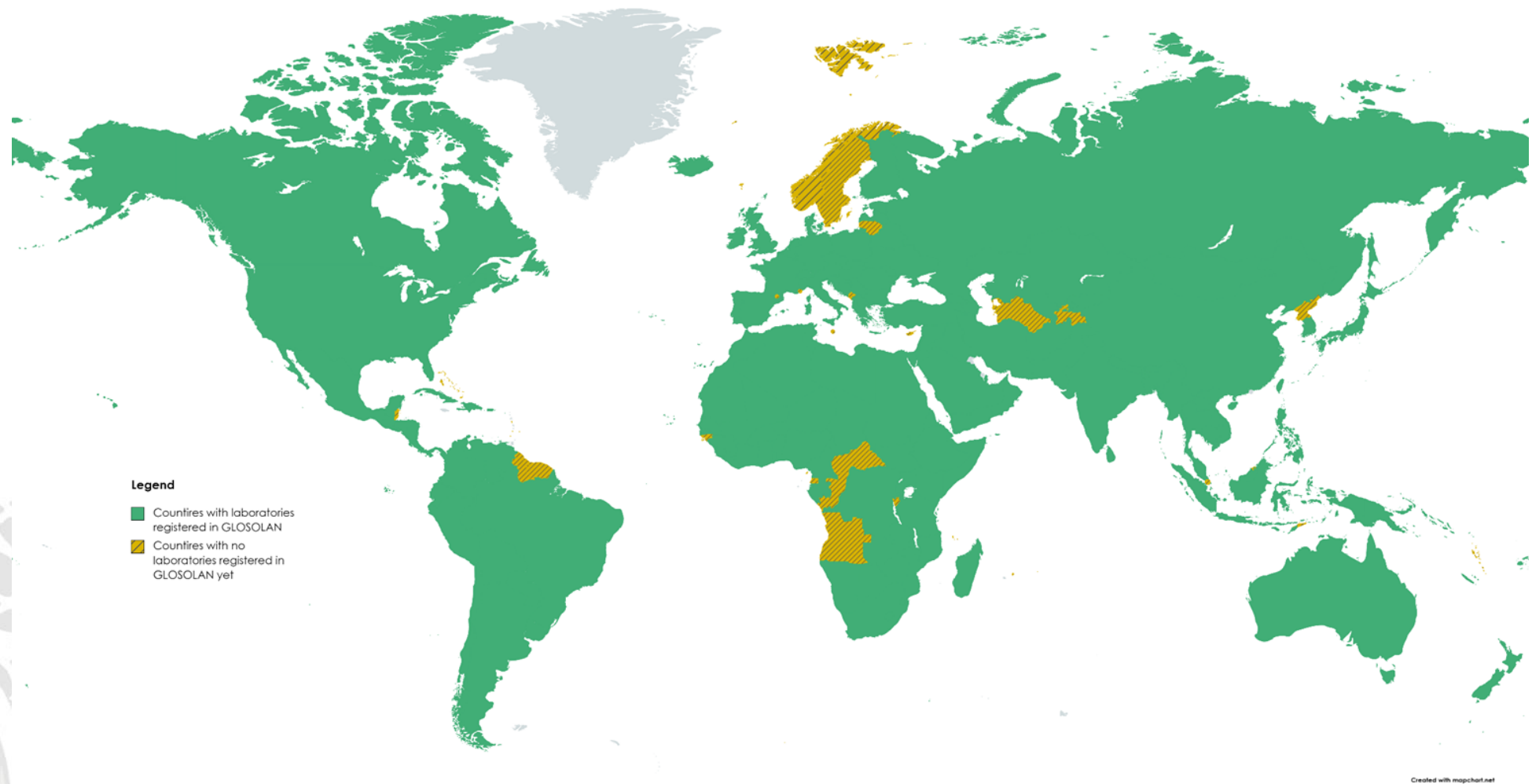
- Execution of external quality control (proficiency testing)
- Training on the execution of internal quality control



- Training on equipment use, maintenance and purchasing
- Establishment of a donation/bartering system
- Spectroscopy



As of March 2023, the network had 937 laboratories registered

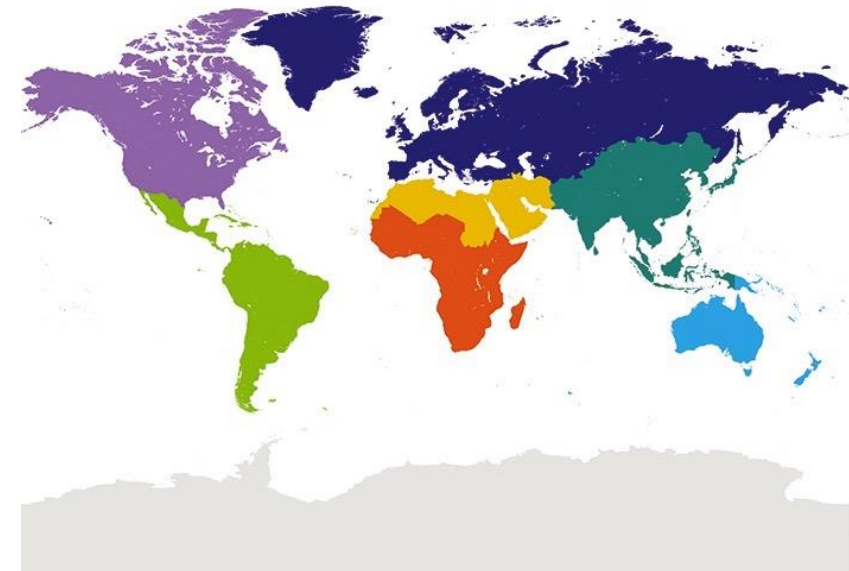
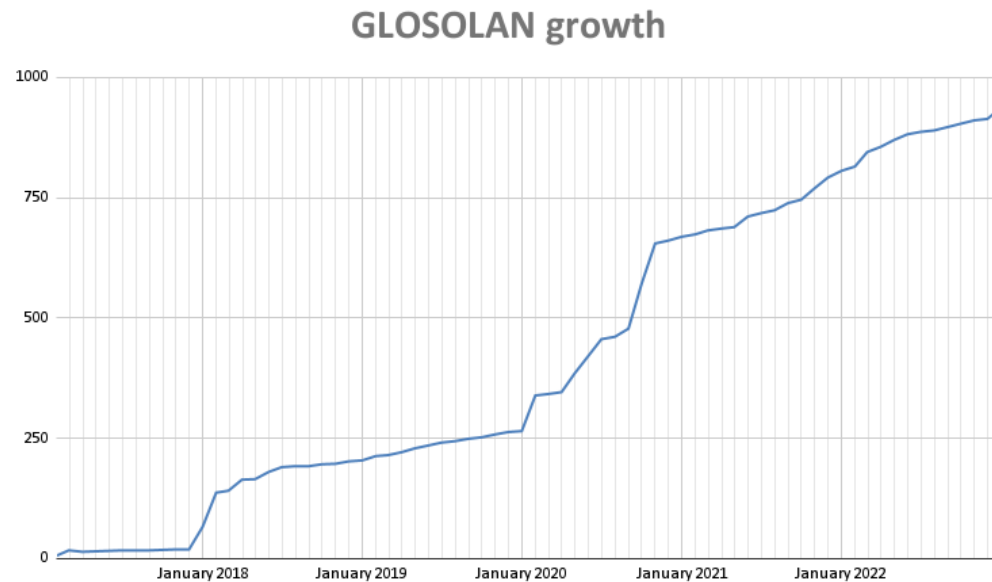


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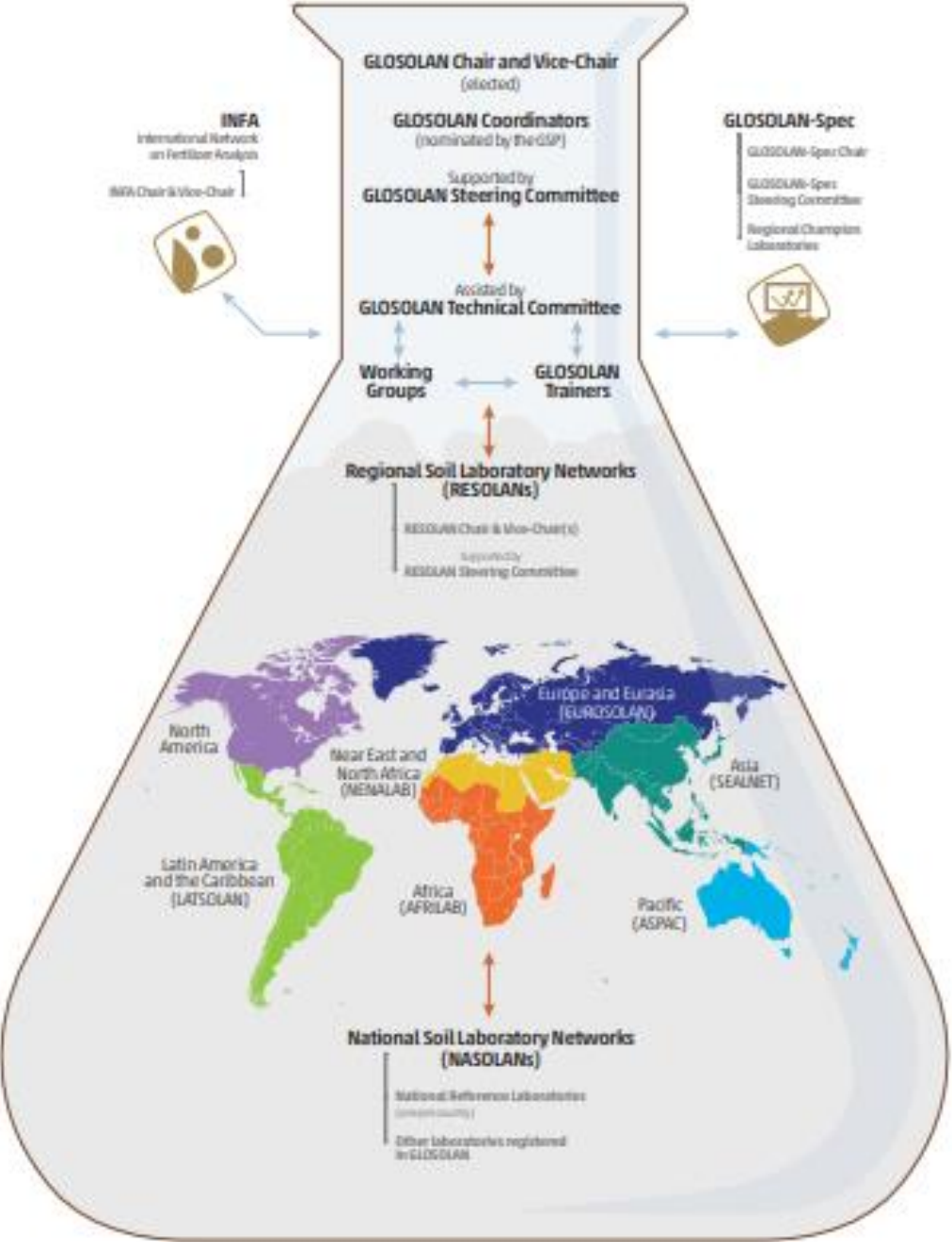


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AFRILAB	SEALNET	EUROSOLA N	LATSOLAN	NENALAB	PACIFIC	North America
172	130	217	223	101	77	17



We operate at all levels...



GLOBAL



REGIONAL



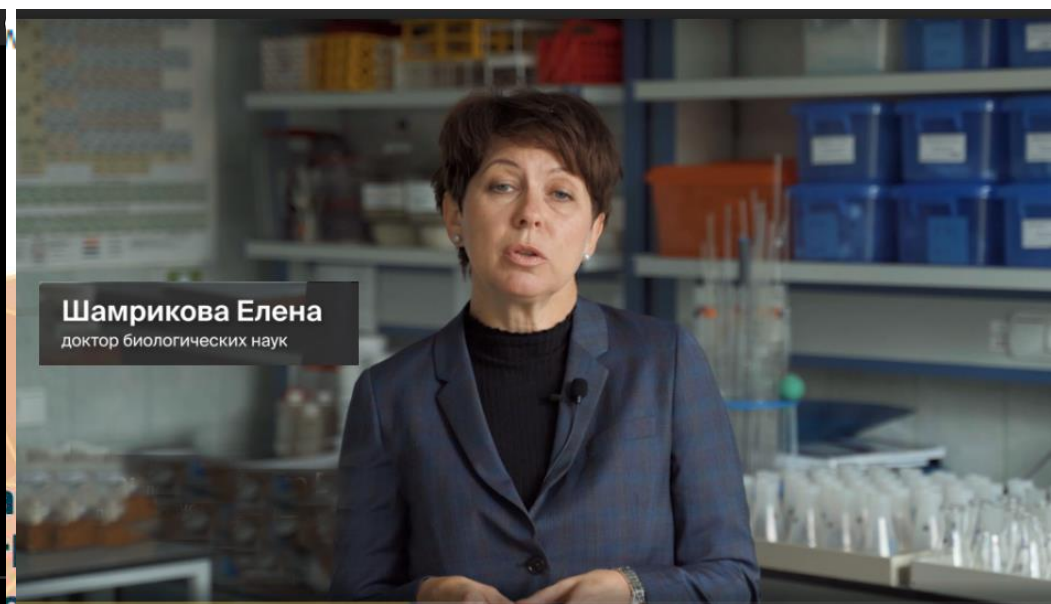
NATIONAL



Work on soil carbon

- Standard Operating Procedures (SOPs) harmonized and published on:
 - SOC by Walkley and Black (titration and colorimetric methods) - 2019
 - SOC by Tyurin - 2021
 - Total carbon by Dumas - 2019
 - SOM by loss of ignition (ongoing – expected release in 2023)
 - Many others (including BS and CEC)
- In-person training, webinars, training videos on the measurement of SOC
- Spectroscopy initiative





Almost 9000 views in one year!



GLOSOLAN Proficiency Test 2022

(ring test/inter-laboratory comparison)

- Around 235 laboratories from over 100 countries
- Focus on N,P, and... **CARBON**
- Main outcomes:
 - Many laboratories have insufficient precision
 - Need to develop international quality control
 - The comparability of results depends on the method
 - Even with high technology there were analytical problems and/or transcription mistakes



Joint products

- GLOSOLAN SOPs are living documents and are revised regularly and/or as needed
- Experts from other GSP Technical Networks support the harmonization process according to the parameter:
 - NETSOB: active members of the working groups for all SOPs dealing with soil biological parameters
 - INSAS: review the SOPs related to soil salinity and sodicity
 - INSOP: review the SOPs related to pollutants and toxic elements



Collaboration opportunities between GLOSOLAN and INBS

- Develop new SOPs
- Review already-published SOPs
- Organize joint webinars on the analysis of black soils-related parameters
- Develop transfer functions between methods
- Work on joint technical documents as needed
- Share questions to include in the 2023 Global Soil Laboratory Assessment

GLOSOLAN – INBS collaboration proposal

1. INBS to spread the voice on GLOSOLAN to motivate laboratories working on black soil analysis to join the network;
2. INBS experts to contribute to the writing, review and update of GLOSOLAN SOPs and training material;

GLOSOLAN would like to promote the *transition* towards the use of **more sustainable methods**.

Can INBS experts help us to **develop** new and sustainable methods of analysis and **transfer functions** among methods?

Method	Risk for human health related to the use of chemicals and the overall implementation of procedure by staff	Environmental risk (waste disposal)	Level of technology required	Average duration of the analysis	Global median price of the analysis (for the customers)
Walkley & Black	High	High	Low	Up to one working day	6 USD
Tyurin	High	High	Low	Up to one working day	7.6 USD

Most laboratories implement **NOT sustainable methods** (e.g. Walkley and Black), which bring risk both for the environment (waste disposal) and human health



GLOSOLAN – INBS collaboration proposal

3. INBS and GLOSOLAN to prepare **awareness raising material** on black soil analysis and management;
4. INBS experts to provide **training** on black soil analysis (as per the GLOSOLAN SOPs);
5. INBS experts to **support and advice** laboratories as needed.

Overall, GLOSOLAN can take care of INBS's work related to soil laboratories in order to avoid duplication of efforts



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