



Food and Agriculture
Organization of the
United Nations

22-24 November 2022

Report of the work performed by GLOSOLAN in 2021-2022

Ms. Miriam Ostinelli
GLOSOLAN Chair

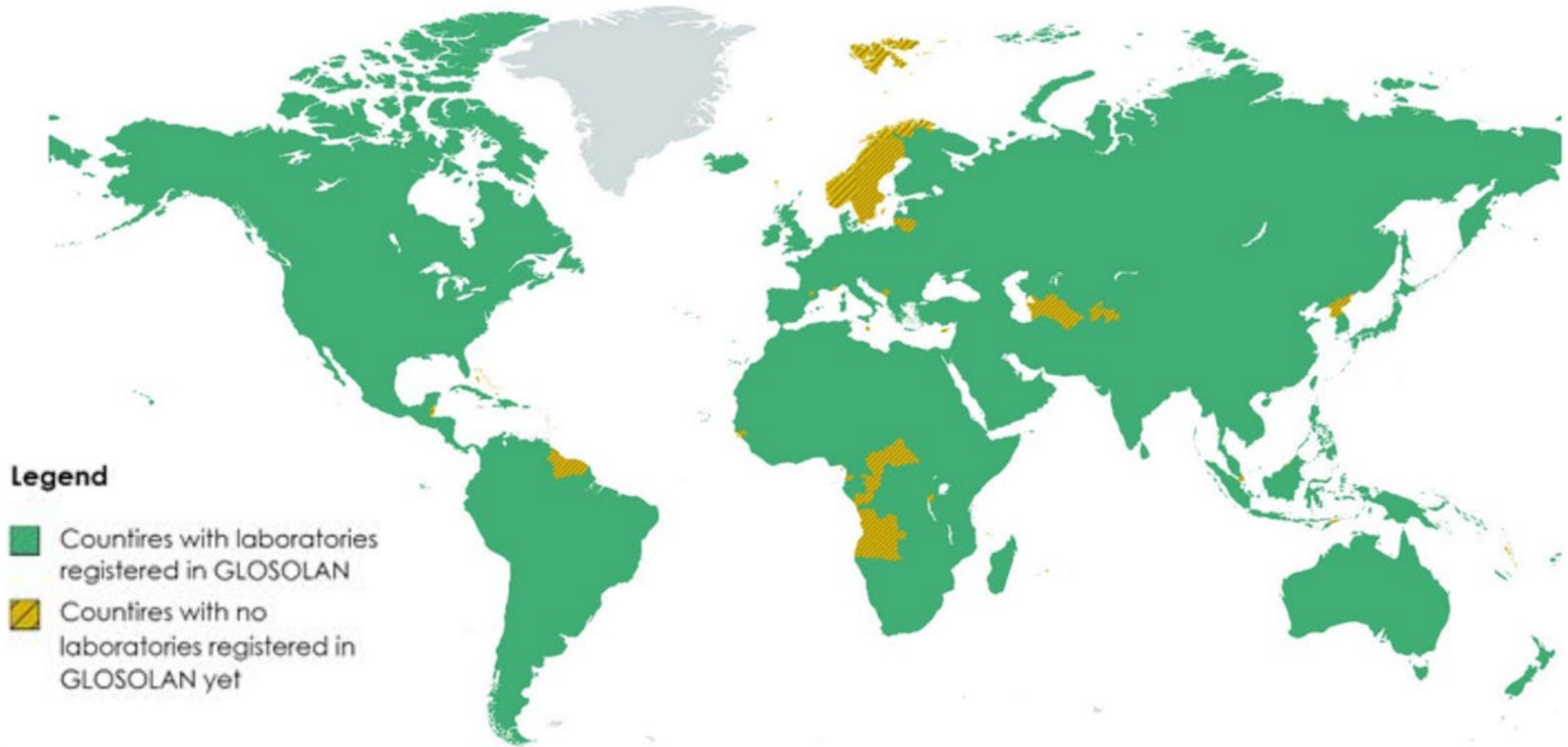
6th Meeting of the
**Global Soil
Laboratory
Network**
(GLOSOLAN)



GLOSOLAN
GLOBAL SOIL LABORATORY NETWORK



On September 2022, GLOSOLAN had 885 laboratories registered

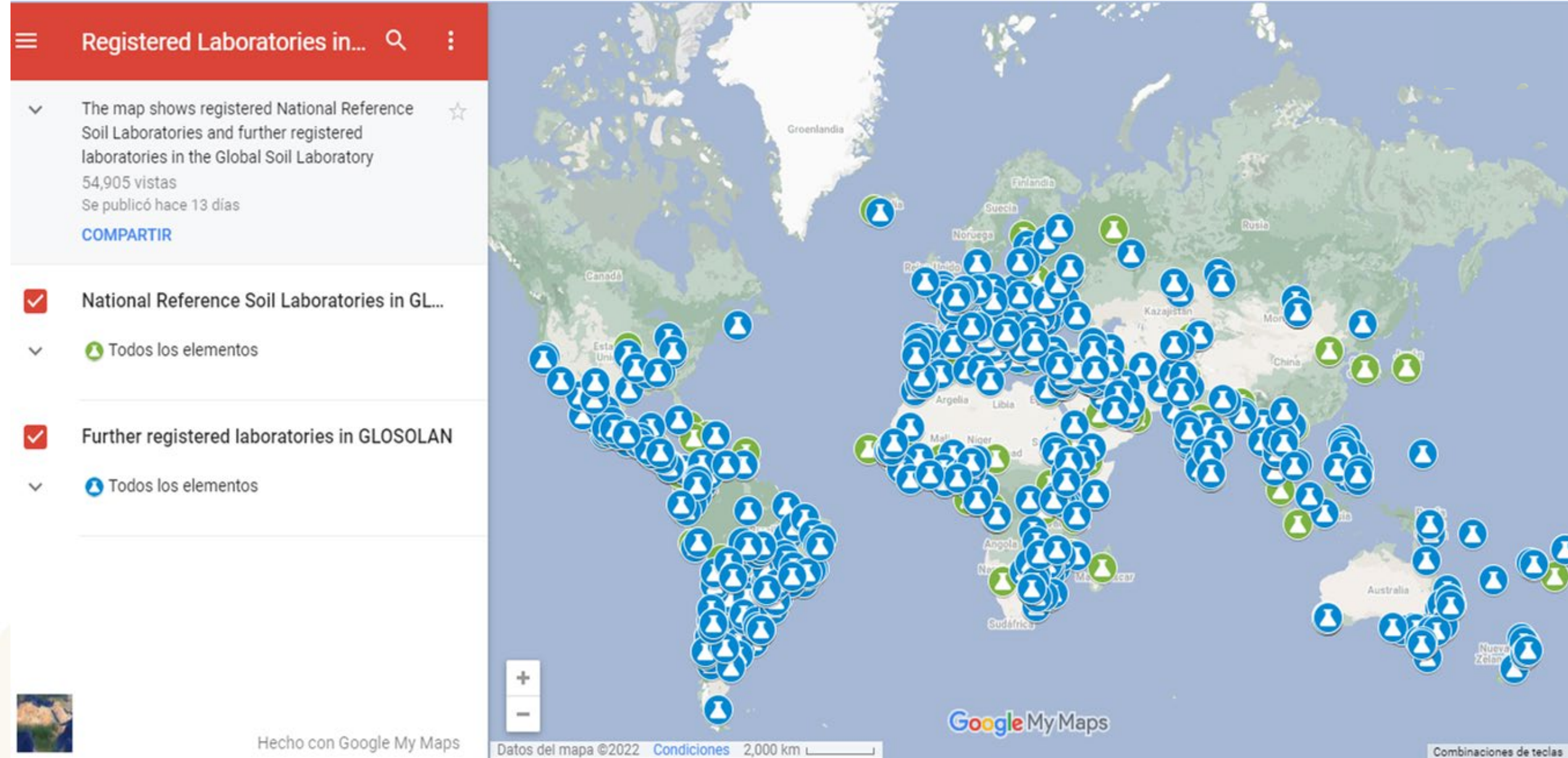


6th Meeting of the **Global Soil Laboratory Network (GLOSOLAN)** | 22-24 November 2022



Learn more on the laboratories registered in GLOSOLAN...

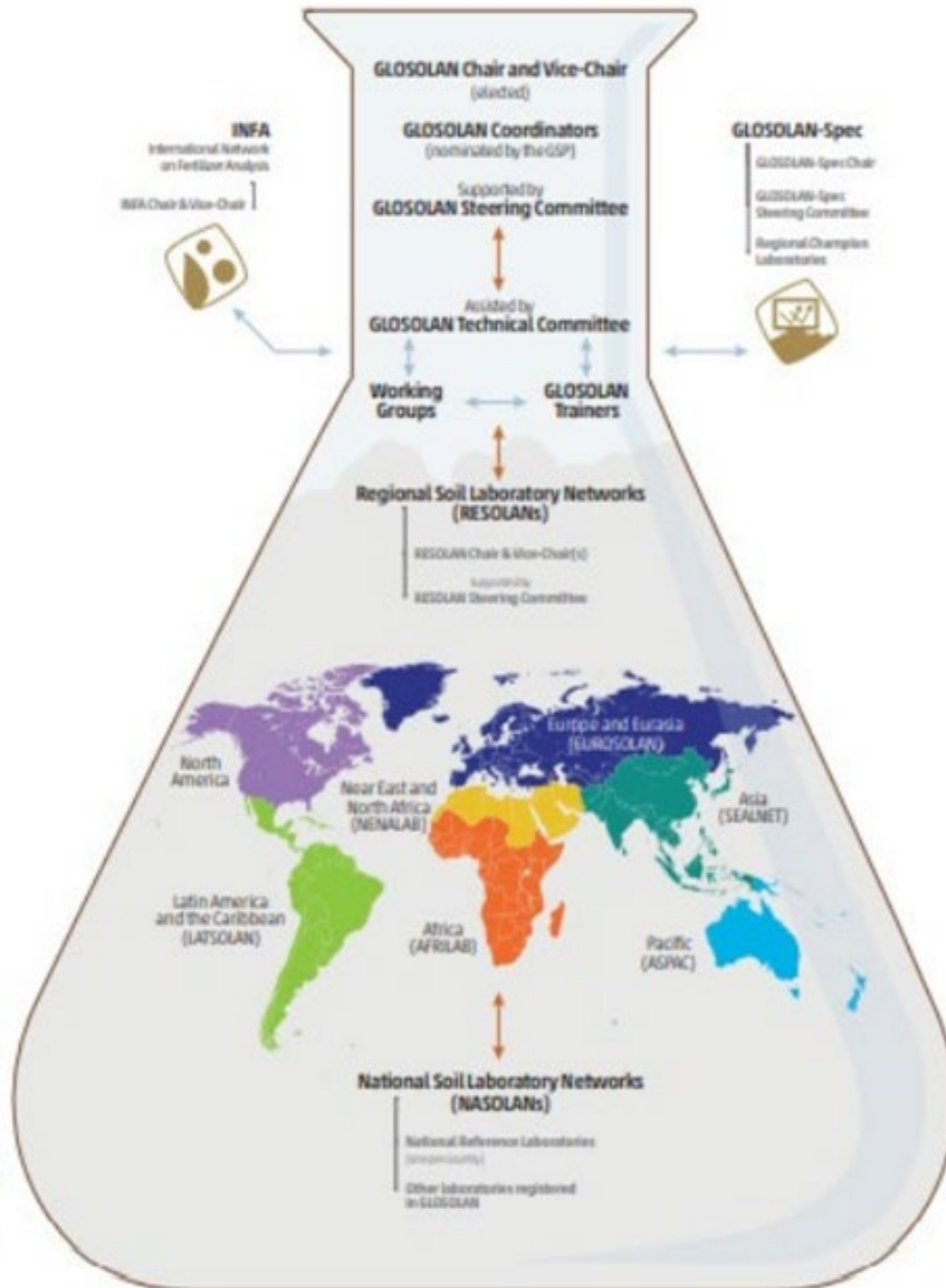
<https://www.fao.org/global-soil-partnership/glosolan/en/>



GLOSOLAN Governance

<https://www.fao.org/global-soil-partnership/glosolan/en/>

We operate at different levels ...



GLOBAL



REGIONAL



NATIONAL

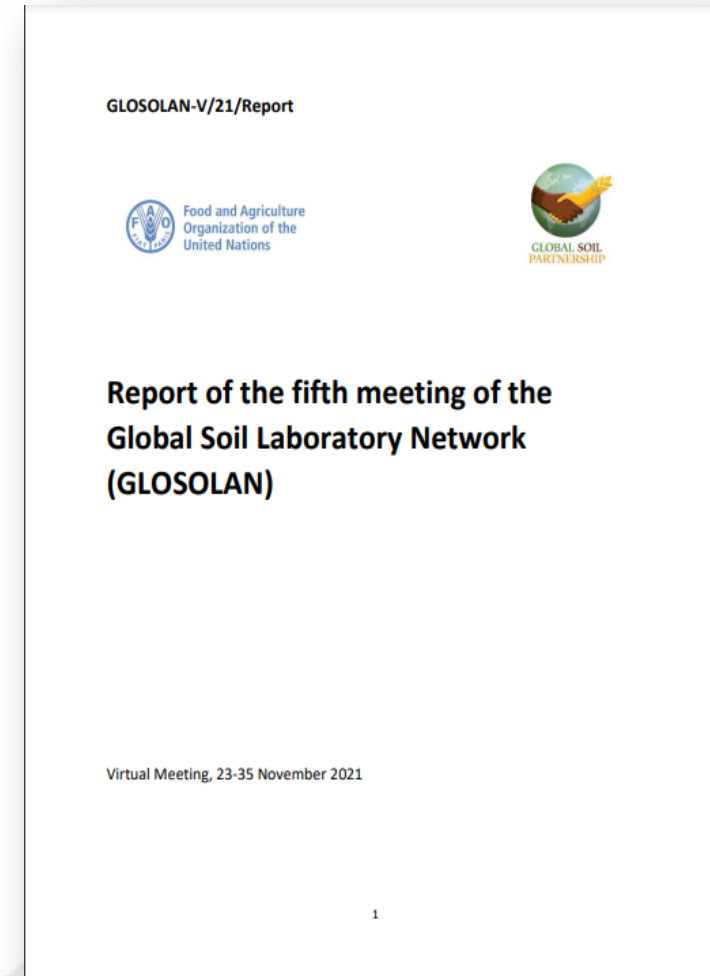
Network (GLOSOLAN) | 22-24 November 2022



Implementation of the GLOSOLAN work plan 2021-2022

As agreed at the 5th GLOSOLAN meeting,
November 2021

<https://www.fao.org/global-soil-partnership/glosolan/en/>



6th Meeting of the **Global Soil Laboratory Network (GLOSOLAN)** | 22-24 November 2022



GLOSOLAN work plan 2022

Activity	Responsible party	Deadline
Organization of webinars on several topics, in several languages	GLOSOLAN Coordinators and trainers DONE	December 2022
Translation of the GLOSOLAN website and publications in several languages	GLOSOLAN Coordinators and translators ONGOING : delays caused by the renewal of the website	December 2022
Update of SIMPLE	GLOSOLAN Coordinators with the support of GLOSOLAN members DONE	December 2022

GLOSOLAN work plan 2022

Regional Soil Laboratory Networks (RESOLANs)		
<p>Organization of the meeting between RESOLAN Chair, vice-Chair(s) and Steering Committee</p> <ul style="list-style-type: none"> The GLOSOLAN coordinator to share information on RESOLAN members with the heads of each region 	GSP Secretariat	December 2021 - January 2022
<p>Organization of the annual meetings of SEALNET, AFRILAB, LATSOLAN, EUROSOLAN, NENALAB and ASPAC (2 hours virtual meeting on decision making)</p>	GSP Secretariat	June to September 2022

DONE



National Reference Laboratories and National Soil Laboratory Networks (NASOLAN)		
Update and create NASOLAN webpages as needed	GSP secretariat and National Reference Laboratories with the support of all GLOSOLAN members	Continuous
Monitor the performance of National Reference Laboratories	GLOSOLAN Coordinators, RESOLAN Chair, Vice-Chair(s) and Steering Committee	Continuous

DONE

ONGOING : we are analysing the survey results



GLOSOLAN PT		
Publish the results of the GLOSOLAN PT 2021	ONGOING (writing the global report, individual lab reports was sent)	June 2022
Organize regional PTs (if possible)	ONGOING (more information will be provided under Item 5)	December 2022
Purchase equipment to good performing laboratories (see GLOSOLAN PT 2021 results) if the budget allows it. <i>Note: financial resource constrains due to Covid-19</i>	GLOSOLAN Coordinator	December 2022 – 2023 (procurement is a long process)

NOT POSSIBLE in 2022



Standard Operating Procedures (SOPs)		
Publish the SOPs harmonized in 2021	GLOSOLAN Coordinator	March 2022
<p>Harmonize the SOPs for the methods agreed at the 5th GLOSOLAN meeting, including SOPs on health and safety</p> <p>Discuss how to harmonize, update or develop “special” methods with INBS, INSAS, NETSOB, and GLOSOLAN partners like Fields4Ever.</p>	<p>SOP working groups, Review Panels and other networks/partners</p> <p>ONGOING</p>	December 2022
Publish information on the sustainability of the methods harmonized in 2021 on the GLOSOLAN website	GLOSOLAN Coordinator	December 2021

	2019	2020	2021	2022
Chemical	OC Walkley and Black, TC Dumas, Calcium carbonate eq. (titrimetric and volumetric calcimeter methods)	Phosphorus (Bray I, Bray II, Olsen, Mehlich I), pH, electrical conductivity (in water and in saturated paste), nitrogen (Dumas, Kjeldah), carbon (Tyurin)	Particulate organic carbon (physical fractionation), Quasi-total elements (digestion using aqua regia and EPA), Exchangeable bases and CEC (ammonium acetate), available micronutrients (extraction using DTPA), Boron (hot water extraction), Mehlich III for macro and micronutrients (including S and B)	Organic matter (loss of ignition), Available phosphorus (KCl), Exchangeable acidity + Exchangeable Al (KCl), Soil buffer capacity (KOH), Fe and Al oxides (ammonium oxalate)
Physical			Particle size-distribution (hydrometer, pipette), bulk density, moisture content (gravimetric method)	Water retention (pF) curve, Particle density (pycnometer)
Biological			Microbial biomass C and N by chloroform fumigation-extraction, soil respiration	Microbial Enzyme Activities (B-Glucosidase, Arylsulfatase, Dehydrogenase), N Mineralization (incubation method), Nematodes trophic groups (wet extraction), QBSar, ISO-TSBF

GLOBAL harmonization process

1. Decision on which SOP to harmonize (parameter + method) according to the proposal received
2. Establishment of the working group (experts from all regions)
3. Developing of the matrix
4. Share the matrix with soil labs worldwide and collecting the information
5. Harmonization of the information collected on regional basis (regional matrices)
6. Harmonization of the regional matrices into a global matrix
7. Develop the text of the SOP (start from the global matrix information)
8. Review the draft
9. Publication of the SOP
10. Publication of the information on the sustainability of methods
11. Translation of the SOP in multiple languages

“Special cases” harmonization process

Few experts on the topic (e.g. biological parameters)

Not many laboratories perform such procedures

We need a new way to harmonize SOPs

1. Decision on which SOP to harmonize (parameter + method), according to the proposal received from both GLOSOLAN and other network members
2. Establishment of the working group (experts from all regions and from both networks)
3. Develop the text of the SOP (could be started from already-published SOPs)
4. Share the draft with soil labs worldwide
5. Collection of the inputs from all regions
6. Review the draft
7. Publication of the SOP
8. Publication of the information on the sustainability of method
9. Translation of the SOP in multiple languages

Standard Operating Procedures (SOPs)		
Publish the SOPs harmonized in 2021	GLOSOLAN Coordinator	March 2022
<p>Harmonize the SOPs for the methods agreed at the 5th GLOSOLAN meeting, including SOPs on health and safety</p> <p>Discuss how to harmonize, update or develop “special” methods with INBS, INSAS, NETSOB, and GLOSOLAN partners like Fields4Ever.</p>	<p>SOP working groups, Review Panels and other networks/partners</p> <p style="text-align: center;">ONGOING</p>	December 2022
Publish information on the sustainability of the methods harmonized in 2021 on the GLOSOLAN website	GLOSOLAN Coordinator	December 2021

Publication of the information on the sustainability of methods

Aim: promote the transition to more sustainable methods

SOIL CARBON METHODS. Sustainability of 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 análisis (for the customers)
Walkley & Black (organic carbon)	High	High	Low	Up to one working day	6 USD
Tyurin (organic carbon)	High	High	Low	Up to one working day	7.6 USD
Dumas (total carbon)	Low	Low	High	Up to half working day	11.6 USD

Include reference values and range values to the GLOSOLAN SOPs harmonized so far and in those in the work plan 2021-22	SOP working groups (range values); working groups to be established with GSP Pillars of Actions and other Technical Networks (reference values).	December 2022
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PENDING

Standard Operating Procedures (SOPs)		
Contact with coordinators and Chairs of NETSOB, INBS and INSAS to invite external experts to join GLOSOLAN SOP working groups to review already-published SOPs and to decide which soil biological parameters to target in 2022.	GLOSOLAN Coordinator	December 2022
	DONE	

Units of measure		
Publish the units of measure endorsed at the 4th GLOSOLAN meeting and prepare conversion tables	Technical Committee and GLOSOLAN Coordinator	March 2022
	PENDING	
<i>This activity was in the GLOSOLAN work plan 2021 but it was not implemented</i>		

GLOSOLAN Technical Committee		
Published the TORs for the position on the GLOSOLAN website and inform GLOSOLAN members on the members of the Committee	GLOSOLAN Coordinator	December 2021
DONE Only a few meetings were organized		
Organization of regular meetings	GLOSOLAN Coordinator	Continuous
Prepare a quick-reference guide to building a transfer function for harmonization. <i>This activity was in the GLOSOLAN work plan 2021 but it was not implemented</i>	Technical Committee	December 2022
PENDING		

GLOSOLAN Technical Committee

Develop a plan on how to update the FAO Bulletin 74:

- No rewriting of the document from scratch but only UPDATING information
- The use of English should be simple with short sentences (everyone should be able to understand the document easily and quickly). This will greatly help translators as well
- The document should be downloadable. Can be divided into chapters that can be downloaded as separate documents
- The document should include visuals (use of images and graphics that make the document easier to understand)
- Some items in the Table of Content have already been addressed by GLOSOLAN

Identify sections that need to be updated and those whose information is still valid

Identify the lead authors. (If possible) the original authors of the Bulletin should be involved

Technical Committee and experts on specific topics as needed

GSP Secretariat to support with layout and graphic elements

December 2022

Partially addressed. More information will be provided under ITEM 14

GLOSOLAN Technical Committee		
Write a policy brief on the importance of soil laboratories and soil analysis. Link to waste management and policy support to laboratories	To be discussed by RESOLANs. GLOSOLAN Technical Committee to review RESOLAN proposals. Eventually, RESOLAN working groups to write the documents	December 2022

ONGOING



GLOSOLAN Steering Committee		
Establish the Steering Committee and publish the TORs for the position on the GLOSOLAN website	GLOSOLAN Coordinator	December 2021
DONE A few meetings were organized		
Organization of regular meetings	GLOSOLAN Coordinator	Continuous
Review the GLOSOLAN work plan in the long-term	Steering Committee and GLOSOLAN Coordinators	March 2022
Develop a policy strategy to support laboratories on e.g. lab maintenance, waste management, etc.	Steering Committee and GLOSOLAN Coordinators	July 2022
ONGOING		
Comply with their task as needed	Steering Committee	December 2022

GLOSOLAN-INSII collaboration		
INSII and GLOSOLAN to share contact information	INSII and GLOSOLAN Coordinators	February 2022
Writing of guidelines on soil sampling, storage and transportation	INSII and GLOSOLAN experts	December 2022
INSII to organize trainings on data management and storage to GLOSOLAN	INSII trainers	December 2022

ONGOING: more information will be provided under Item 13

PENDING





GLOSOLAN
GLOBAL SOIL LABORATORY NETWORK

Thanks for your attention!

