Food and Agriculture Organization of the United Nations

4th Meeting of the
European and Eurasian Soil Laboratory Network
(EUROSOLAN)

5 - 6 October 2022

The Global Soil Laboratory Network (GLOSOLAN)

Ms. Lucrezia Caon, GSP Secretariat FAO

EUROSOLAN
EUROPEAN AND EURASIAN SOIL LABORATORY NETWORK

GLOBAL SOIL PARTNERSHIP

GLOSOLAN

GLOBAL SOIL LABORATORY NETWORK

WHY?

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GLOBAL SOIL LABORATORY NETWORK

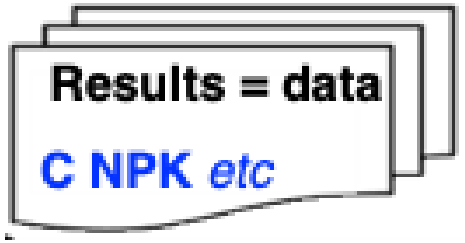
….if you can not measure it, you can not manage it…

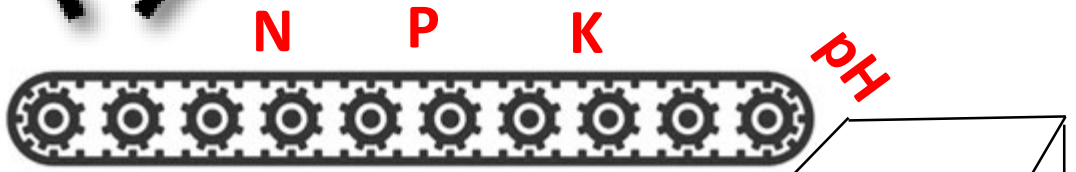
To be successful in global soil management,
Global Soil Laboratory Network is essential.

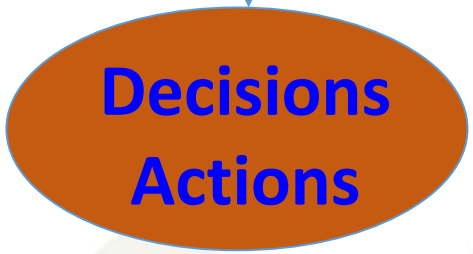
Laboratories:

'factories'

producing data







Laboratories:

'factories'

producing data

Results = data

C NPK *etc*

Soil

Lab

C

N P K

pH

clients

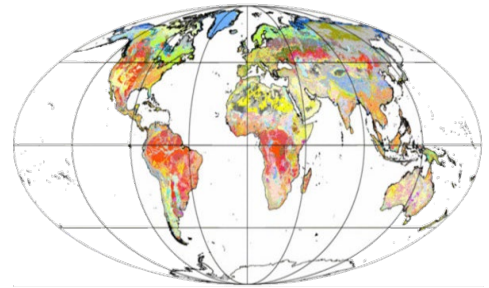
Data

Decisions

Actions

Traditionally

- Fertilisation
- Mapping



GLOBAL SOIL PARTNERSHIP

Laboratories:

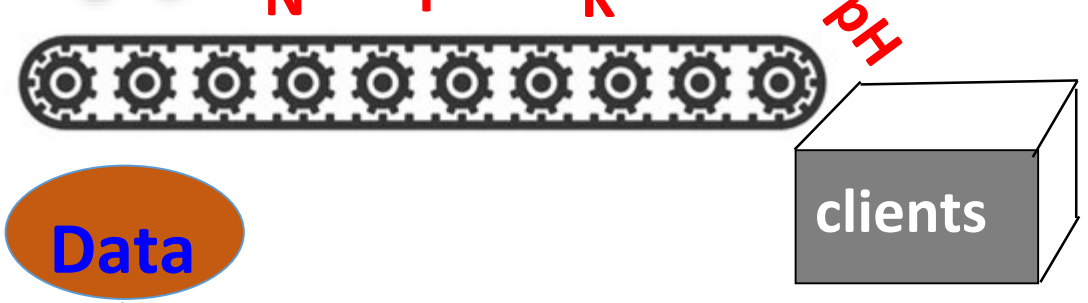
'factories'

producing data

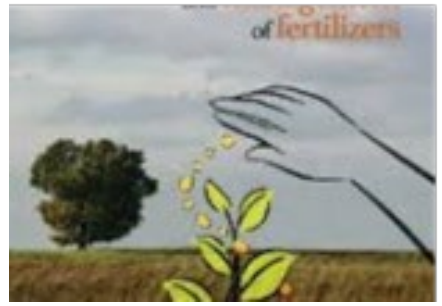
Soil → Lab

C

N P K pH



clients



Results = data

C NPK *etc*

Quantifying

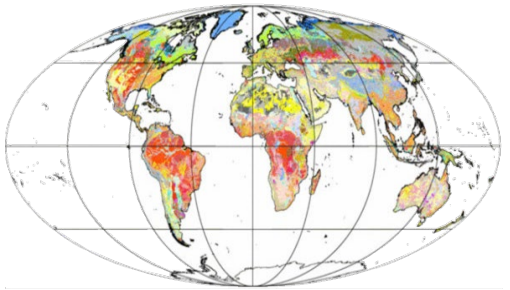
ODD Targets

Ecosystem services

Data → Decisions Actions

Traditionally

- Fertilisation
- Mapping



Nowadays

- Scientific conclusions
- Payment for ecosystem services

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Data QUALITY → RELIABLE Decisions Actions

Data QUALITY → RELIABLE Decisions Actions

Evaluation... of our work…

Soil characteristics	Decisions/Actions
Carbon	Climate change
Nitrogen	Food security/
Phoshorus	environment pollution

Global Proficiency Testing (PT) 2021-22

240 labs
110 countries

4th Meeting of the Eu

…focusing on soil carbon…

How much carbon is in this soil sample?

Wet chemistry

Walkley & Black C_{WB}

Dry combustion

Dumas C_{Dum}

Walkley & Black

3.04 g C

ORGANIC carbon

Dumas

3.51 g C

TOTAL carbon

carbon quantified depends on the method

different carbon types!

GLOSOLAN objective is to improve harmonization and help making data comparable

To make scientific conclusions, uncertainty is essential

Walkley & Black

3.04 g

+/- 1.0 g

Dumas

3.51 g

+/- 0.3

95% of the labs will conclude that carbon is ranging between

2 and 4 g

3.2 and 3.8 g

...uncertainty is currently too large to detect changes in soil carbon content...

Conclusions

Uncertainty is currently too large to monitor changes, to make scientific conclusions or for a payment of carbon storage

With GLOSOLAN support, all labs can improve their performances:

- using SOPs and applying good laboratory practices
- implementing internal and external quality control
- training their staff and managers
- etc…

GLOSOLAN is able to identify reference values for different soil properties, including C content => in the future, labs everywhere in the world could calibrate their analyzes on GLOSOLAN reference samples

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GLOBAL SOIL LABORATORY NETWORK

If you can not measure it, you can not manage it…

better soil data, for better soil management!

Harmonization of methods, units, data and information is critical to:

- ✓ provide reliable and comparable information between countries and projects;
- ✓ allow the generation of new harmonized soil data sets;
- ✓ support evidence-based decision making for sustainable soil management.

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GLOBAL SOIL LABORATORY NETWORK

Materials and activities are open access to anybody and aim to improve global analytical performance,

success will be faster

with the support of national governments, resource partners and GSP Focal Points!

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GLOBAL SOIL LABORATORY NETWORK

GLOSOLAN-Spec

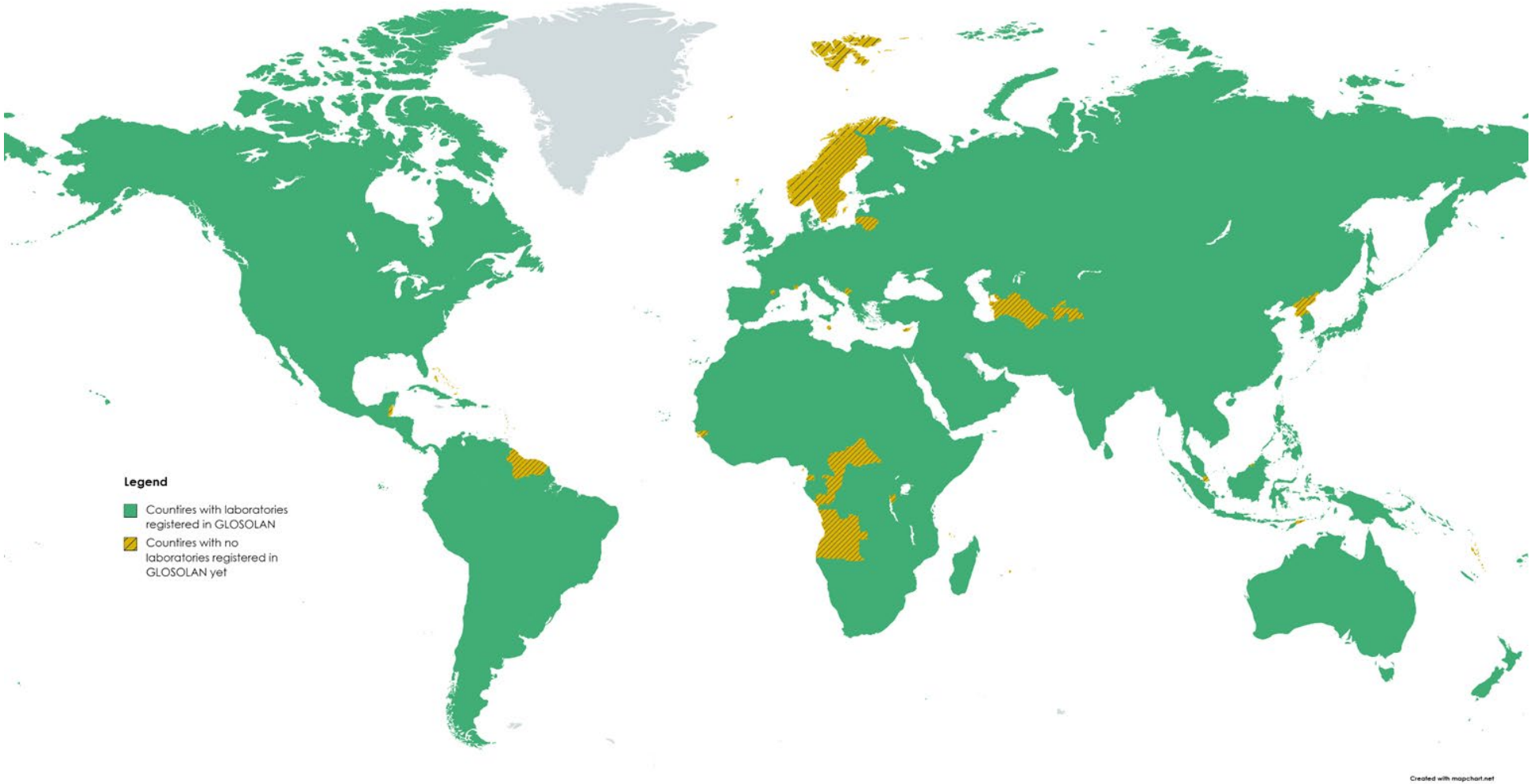
RESOLANs

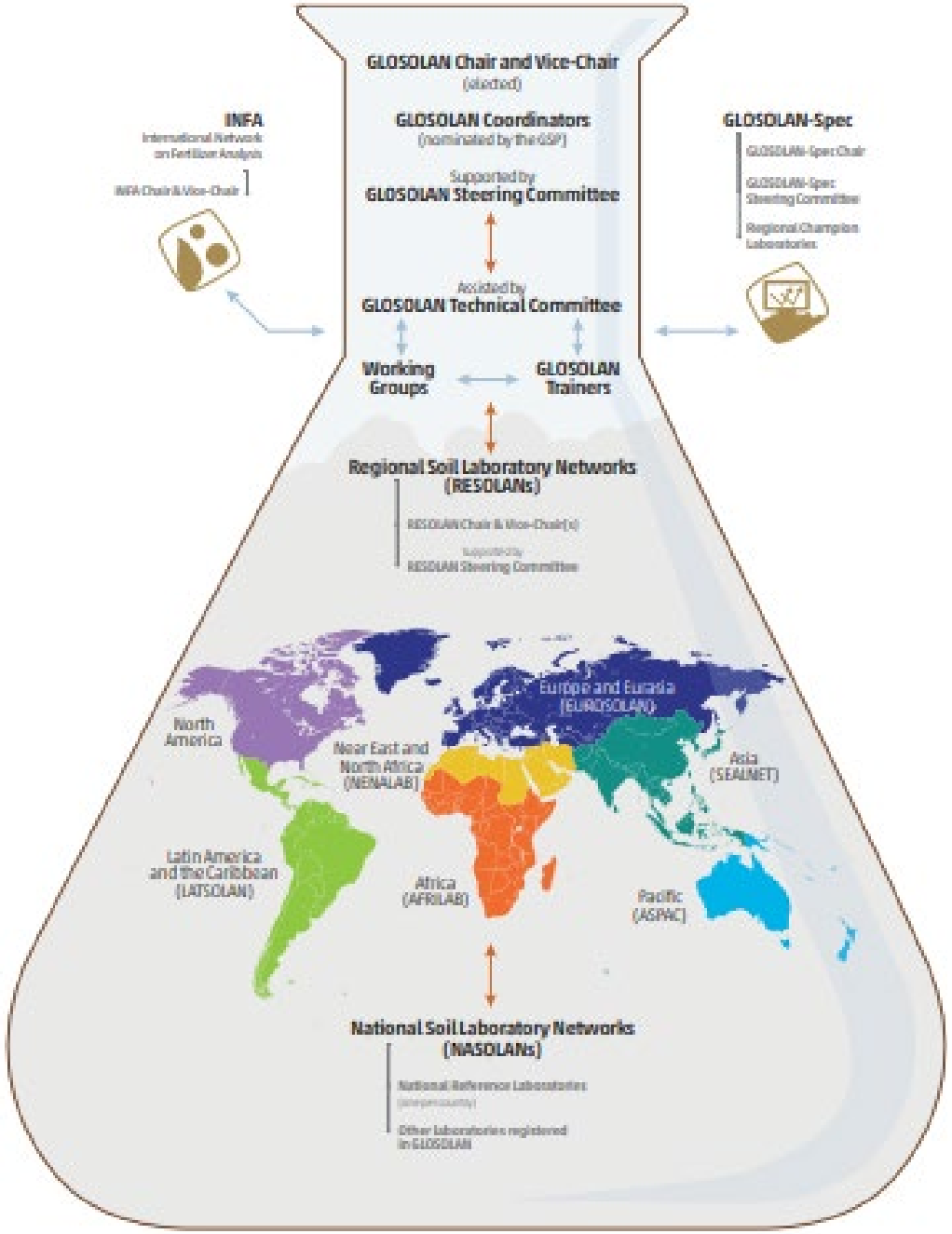
NASOLANs

2012	2017	2018	2019	2020	2021	2022	2026
GSP	GLOSOLAN	PT Asia PT LAC In person training 1st Global assessment	GLO_PT 5 SOPs In person training	GLO_PT 10 SOPs 2nd Global assessment Spectroscopy assessment SIMPLE	GLO_PT 12 SOPs 16 webinars **Procurement to 16 labs**	GLO_PT 14 SOPs 7 webinars in the agenda	

uropean and Eurasian

On September 2022, the network had 885 laboratories registered





We operate at all levels…

GLOBAL

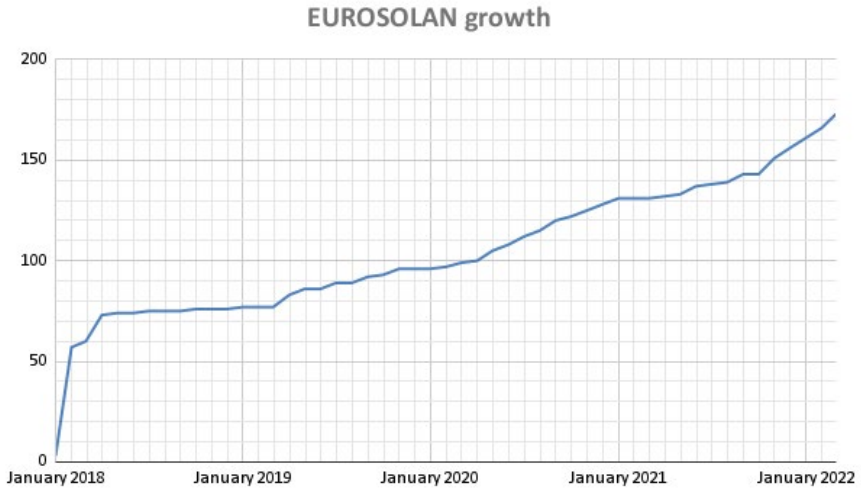
REGIONAL

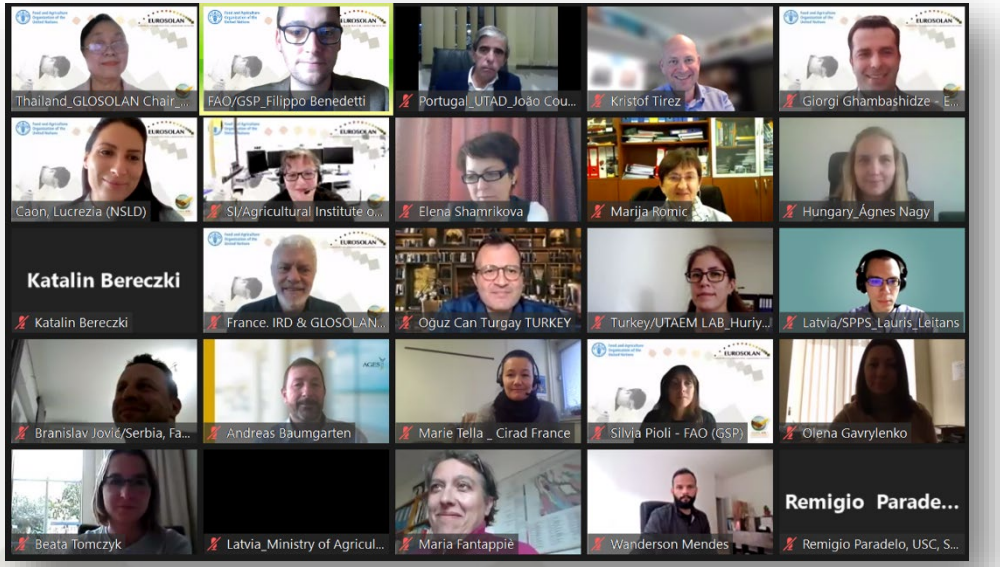
NATIONAL

The European and Eurasian Soil Laboratory Network (EUROSOLAN)

A network of **194 laboratories** from **43 European and Eurasian countries**

Albania, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Kazakhstan, Kosovo, Kyrgystan, Latvia, Luxemburg, Poland, Portugal, Republic of Moldova, Republic of North Macedonia, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Spain, Switzerland, The Netherlands, Turkey, Ukraine, United Kingdom, Uzbekistan.





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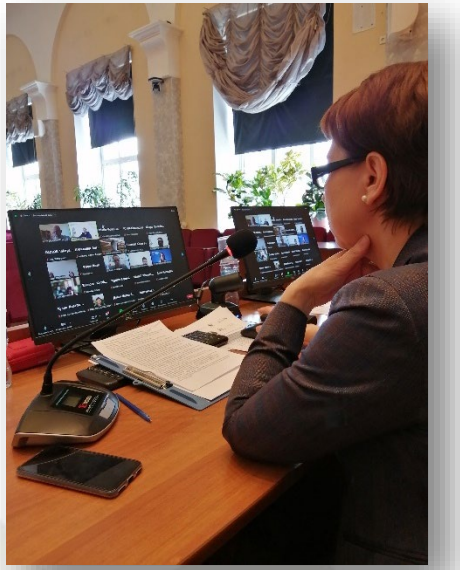
GLOBAL SOIL PARTNERSHIP

National Soil Laboratory Networks (NASOLANs)

- **Established:**
  Austria, Belgium-Luxemburg, Croatia, Russia
- **Under establishment:**
  Hungary, Turkey
- **Not established yet** (different reasons/conditions)
  <u>We can help you</u>
  - Low number of laboratories operating in the country
  - Communication problems
  - Lack of knowledge
  - Need of financial resources



Food and Agriculture Organization of the United Nations

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Global Soil Partnership

Overview | Partners | Regional partnerships | ITPS | Technical networks | Areas of work | Resources

- Publications
- Multimedia
- Communication material
- Soil Doctor posters
- Photo galleries
- GSP Events Archive
- Highlights Archive

Launch of the Belgian Soil Laboratory Network | BESOLAN

The Global Soil Laboratory Network (GLOSOLAN) was established in 2017 to build and strengthen the capacity of laboratories in soil analysis and to respond to the need for harmonizing soil analytical data. Harmonization of methods, units, data and information is critical to (1) provide reliable and comparable information between countries and projects; (2) allow the generation of new harmonized soil data sets; and (3) support evidence-based decision making for sustainable soil management. In order to downscale its activities and better adapt them to the local context, the Global Soil Laboratory Network (GLOSOLAN)is structured in regional and national soil laboratory networks. National Soil Laboratory Networks are established by grouping together soil laboratories operating in the same country, under the leadership of the National Reference Laboratory.

11/05/2022 Following the successful establishment of national soil laboratory networks in other countries around the world, on March 21, the Belgian Soil Laboratory Network (BESOLAN) was launched through a virtual event attended by 37 stakeholders including laboratory managers and representatives of the regional Belgian governments (the Walloon region, the Brussels region and the Flemish region). The event was opened by Ms Caon Lucrezia from the FAO's Global Soil Partnership (GSP), who recalled the importance of establishing National Soil Laboratory Networks to downscale the activities of the GLOSOLAN and to bring Belgian laboratories' needs and priorities to the attention of GLOSOLAN. This will allow GLOSOLAN and GSP/FAO to include and address these requests in their global and regional strategies and work plans. Ms. Caon closed by thanking VITO and the Axe Echanges Eau-Sol-Plantes, GxABT, Liège University for leading the establishment of BESOLAN.

The event counted on the participation of Ms. Martien Swerts, Belgian focal point to the GSP, Mr. Elh Moustapha Abdourahaman, vice-chair of GLOSOLAN, and Ms. Marija Romić, chair of EUROSOLAN, contextualizing the launch of BESOLAN at the global and regional level. Ms. Clémence Mariage, Mr. Gilles Colinet and Mr. Kristof Tirez from the organizing institutions, introduced participants to BESOLAN in terms of wet chemistry and soil spectroscopy activities. Referring to soil physical measurements, Ms. Aurore Degré from ULiège - Gembloux Agro-Bio Tech made the link between BESOLAN and the Soil Program on Hydro-Physics (SoPhie). Ultimately, participants were invited to spread the voice on BESOLAN in order to motivate laboratories to join this new Network and to unite their efforts on the harmonization of soil laboratory data and methods of analysis at the national level. Finally, the event was rounded off by the BESOLAN webpage, which has been significantly updated to mark the launch of the Network and to keep it fully up-to-date with information and references.

National Soil Laboratory Networks (NASOLANs)

Please inform us on progresses in establishing your NASOLAN or in the activities implemented or under implementation in your NASOLAN.

Please encourage all the laboratories in your national network to register in GLOSOLAN, so they can be informed on the global activities

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EUROSOLAN

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Thanks for your attention!

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