



Food and Agriculture
Organization of the
United Nations

GLOBAL SOIL PARTNERSHIP 10th Plenary Assembly



23-25
May 2022

VIRTUAL
MEETING

Global Soil Laboratory Network

GLOSOLAN

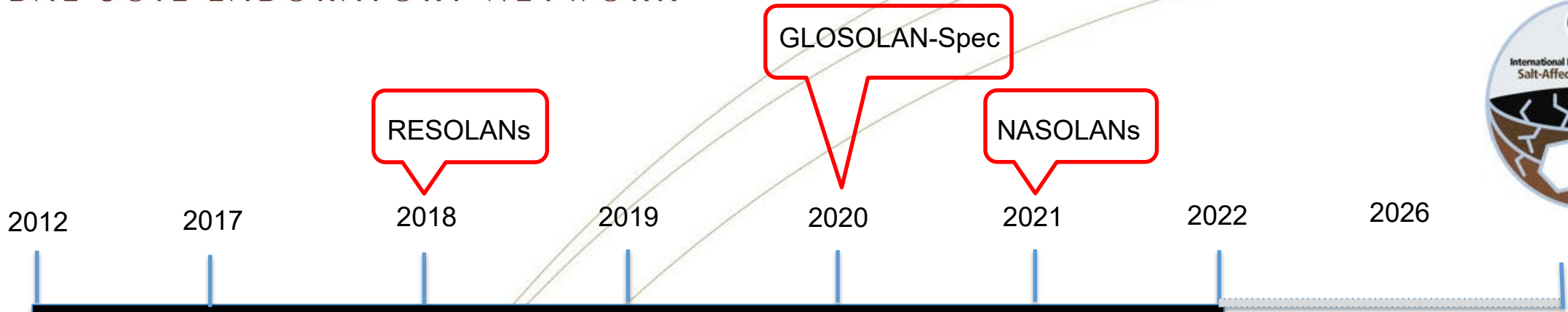
Ms. Miriam Ostinelli

GLOSOLAN Chair



GLOSOLAN

GLOBAL SOIL LABORATORY NETWORK



GSP

GLOSOLAN

PT Asia
PT LAC
In person training
1st Global assessment

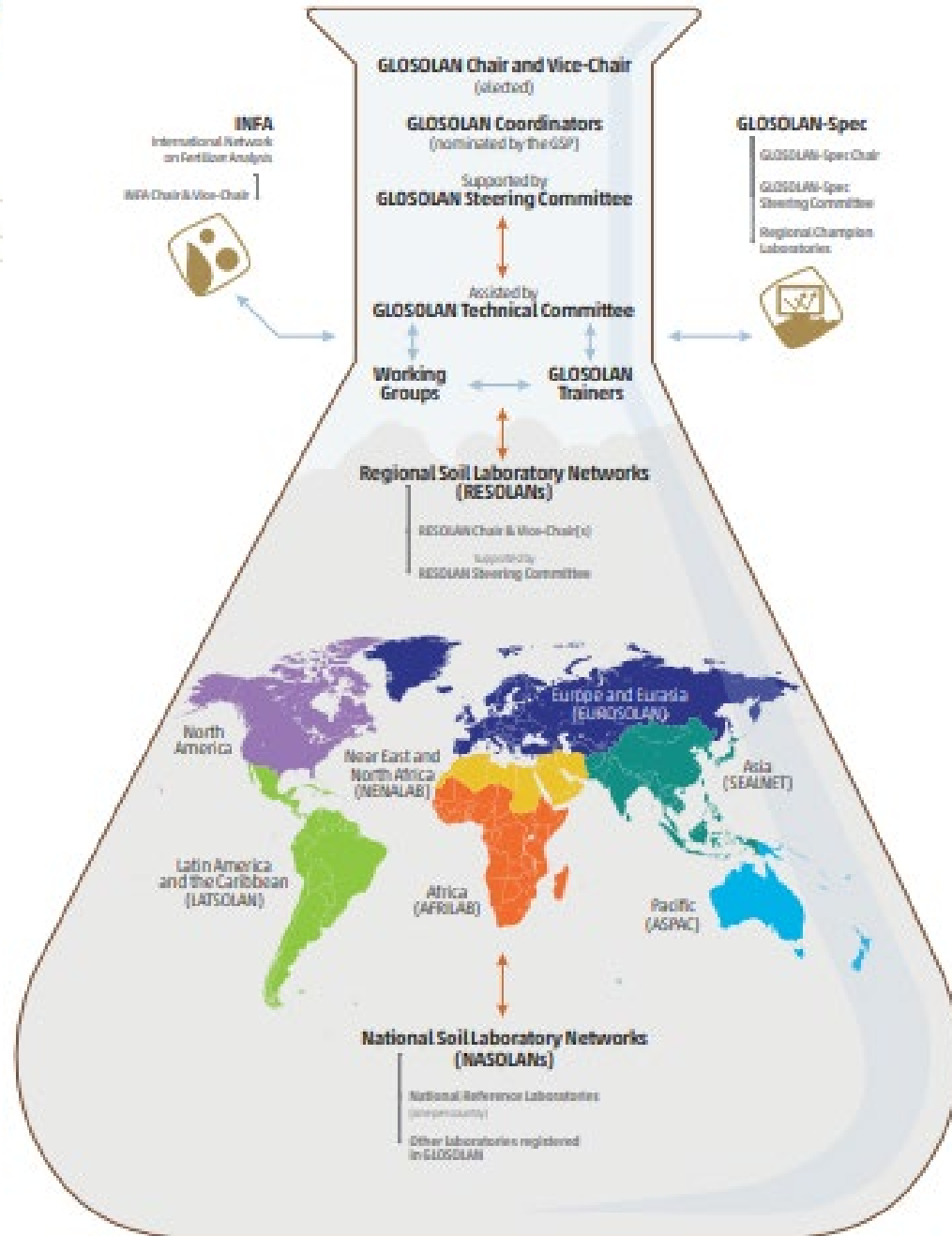
GLO_PT
5 SOPs
In person training

GLO_PT
10 SOPs
2nd Global assessment
Spectroscopy assessment
SIMPLE

GLO_PT
12 SOPs
16 webinars
Procurement to 16 labs

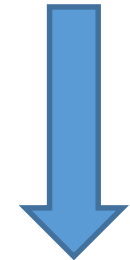
GLO_PT
14 SOPs
7 webinars in the agenda



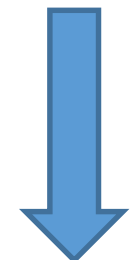


We operate at all levels...

GLOBAL

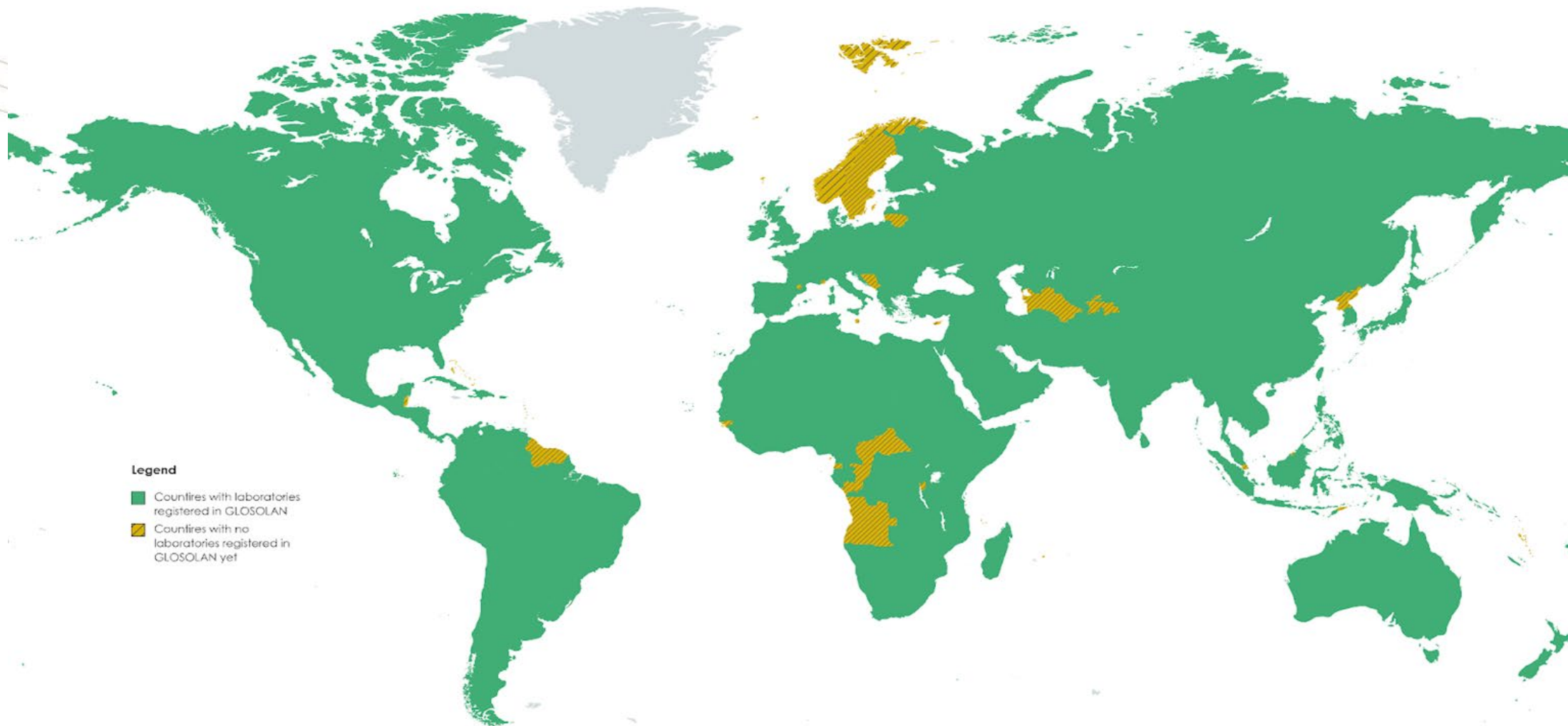


REGIONAL



NATIONAL

On April 2022, the network had 840 laboratories registered



Legend

-  Countries with laboratories registered in GLOSOLAN
-  Countries with no laboratories registered in GLOSOLAN yet



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WHY?

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

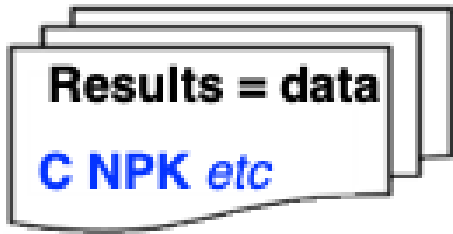
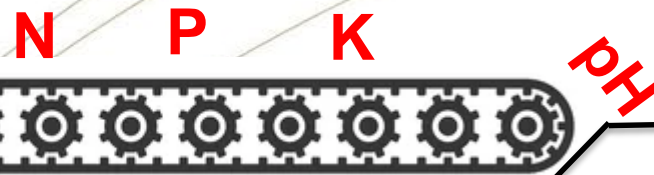
To be successful in global soil management,
Global Soil Laboratory Network is essential.

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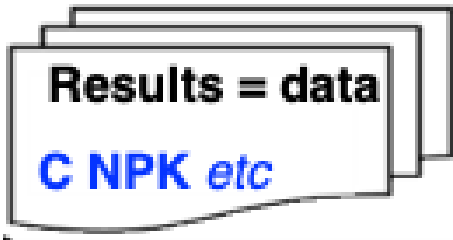
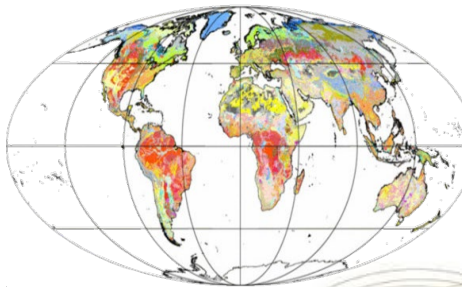
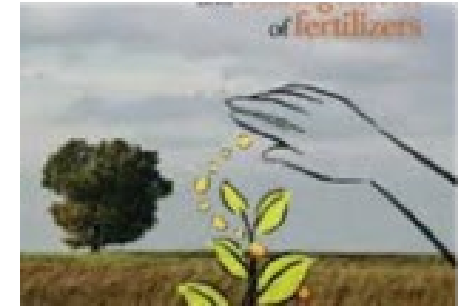
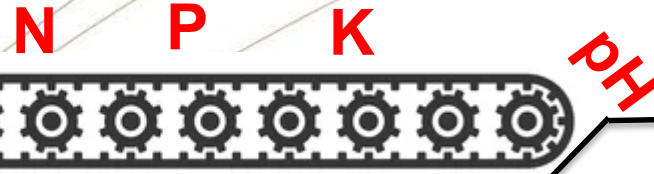


Laboratories:
 'factories'
 producing data





Laboratories:
 'factories'
 producing data



Results = data
 C NPK etc



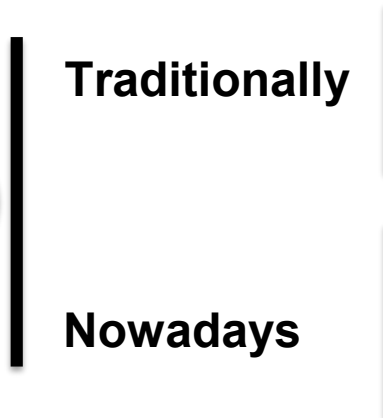
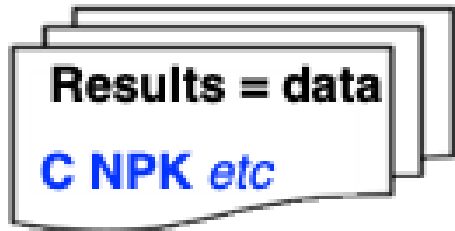
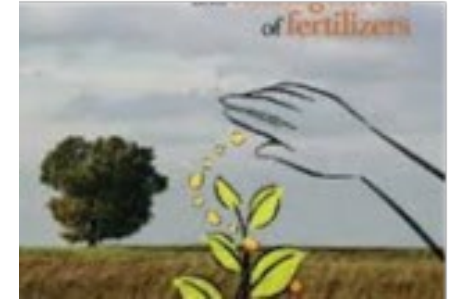
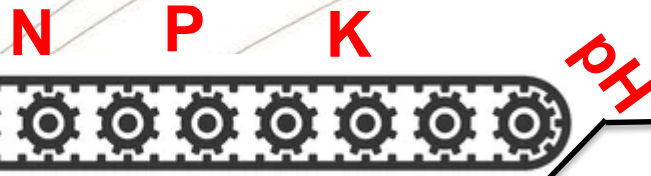
Traditionally

- Fertilisation
- Mapping

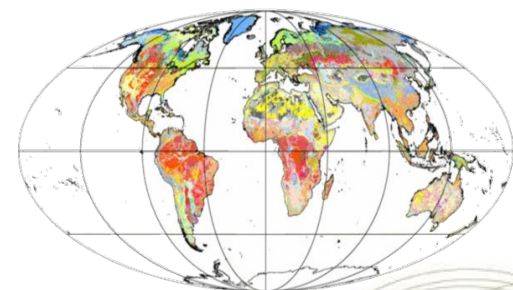




Laboratories: 'factories' producing data



- Fertilisation Mapping
- Scientific conclusions
- Payment for ecosystem services





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Data

QUALITY



RELIABLE

**Decisions
Actions**

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Data

QUALITY



RELIABLE

**Decisions
Actions**

Evaluation... of our work...

Soil characteristics

Carbon

Nitrogen

Phosphorus

Decisions/Actions

Climate change

**Food security/
environment pollution**



Global Proficiency Testing (PT) 2021-22

240 labs

110 countries



...focusing on soil **carbon**...

How much carbon is in this soil sample?



Wet chemistry

Walkley & Black **C_{WB}**



Dry combustion

Dumas **C_{Dum}**





100 g soil

Walkley & Black



ORGANIC carbon

3.04 g C

3.51 g C

Dumas



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

2 and 4 g



100 g soil

3.51 g

+/- 0.3

3.2 and 3.8 g

Dumas



**...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



Soil

Lab

Data

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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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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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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Thanks for your attention!

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