



Food and Agriculture
Organization of the
United Nations

6th Meeting of the Asian Soil Laboratory Network (SEALNET)

21-22 September 2022

The Global Soil Laboratory Network (GLOSOLAN)

Ms. Lucrezia Caon, GSP Secretariat FAO

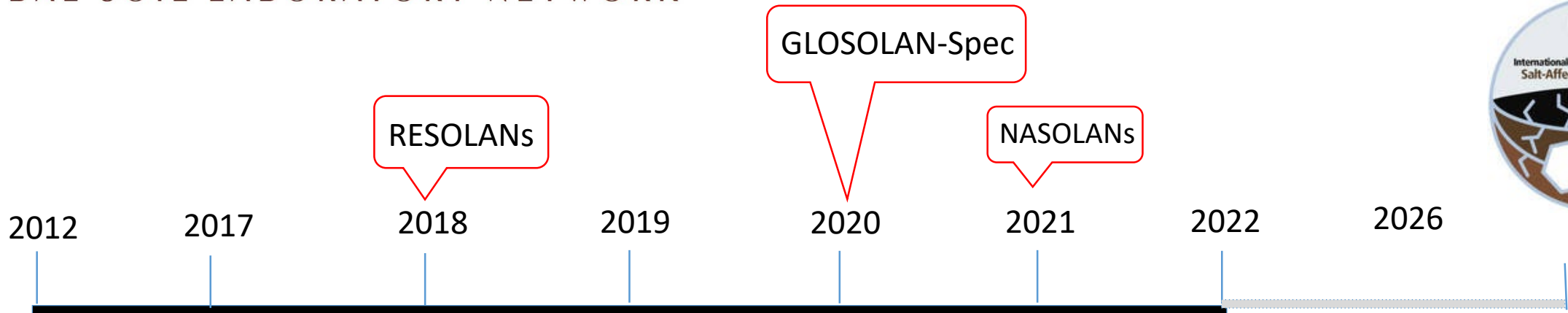


SEALNET
ASIAN SOIL LABORATORY NETWORK



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

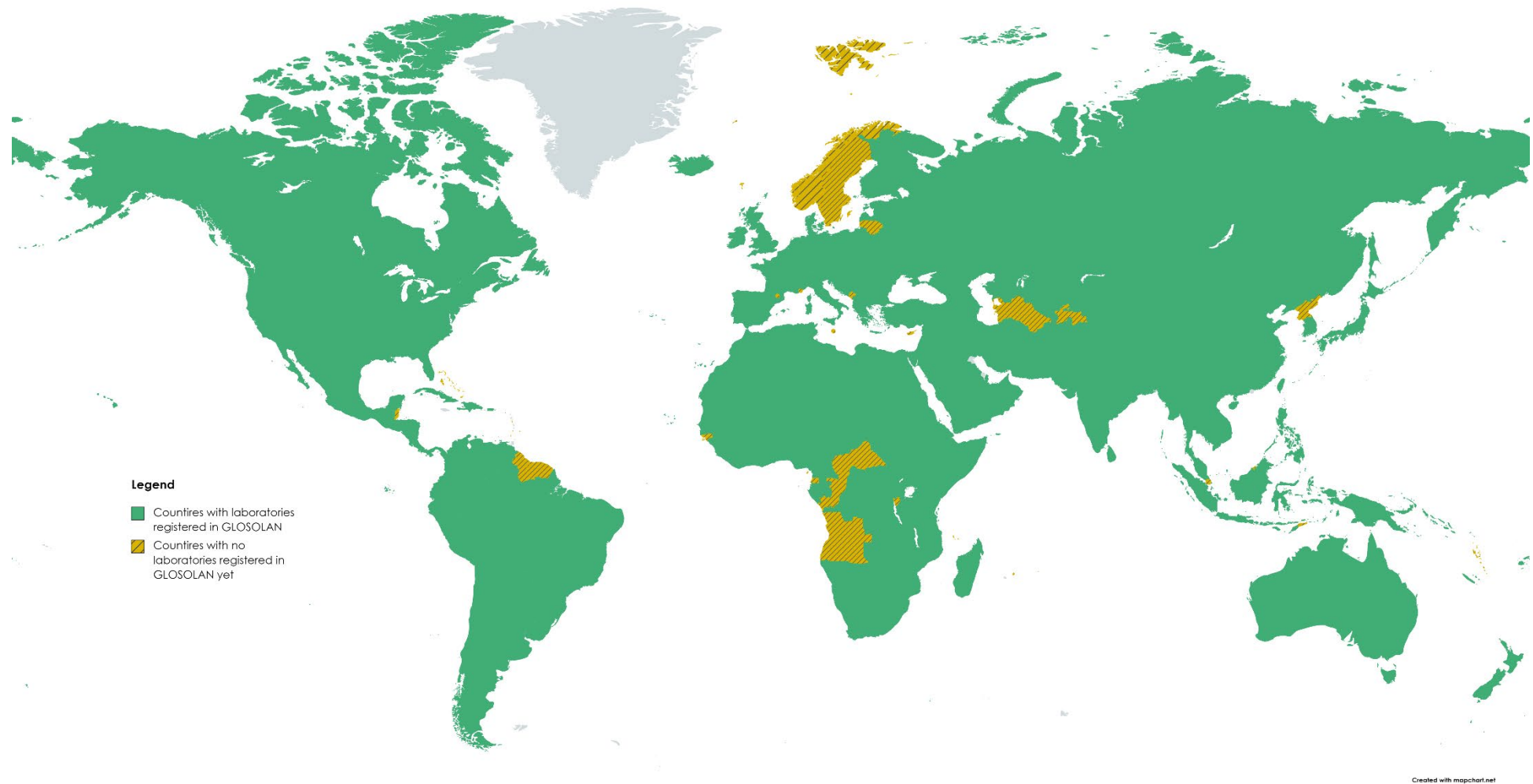
GLO_PT
14 SOPs
7 webinars in the agenda



Meeting of the Asian



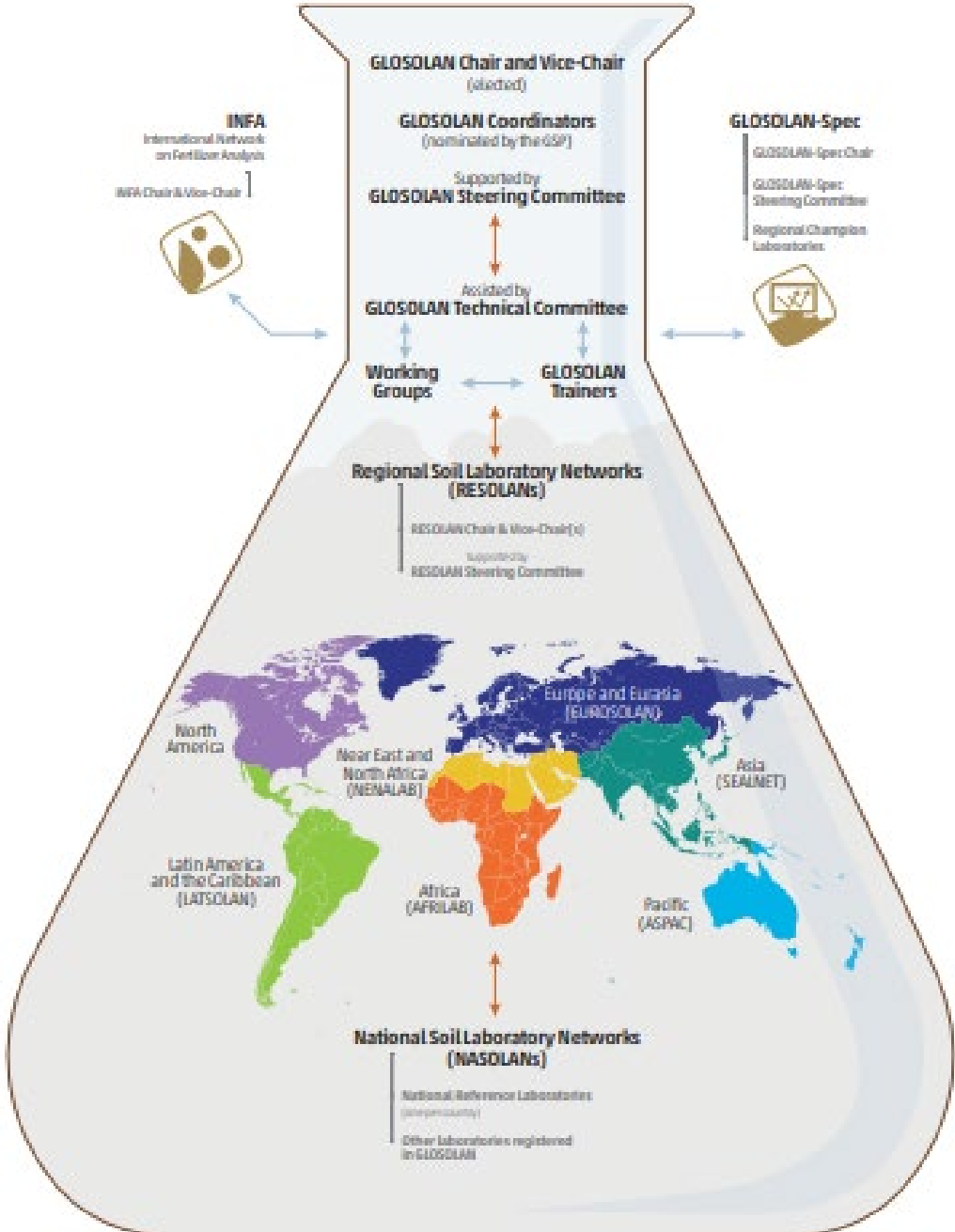
On September 2022, the network had 885 laboratories registered



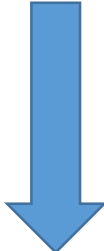
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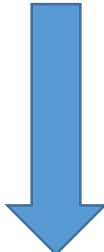
We operate at all levels...



GLOBAL



REGIONAL



NATIONAL

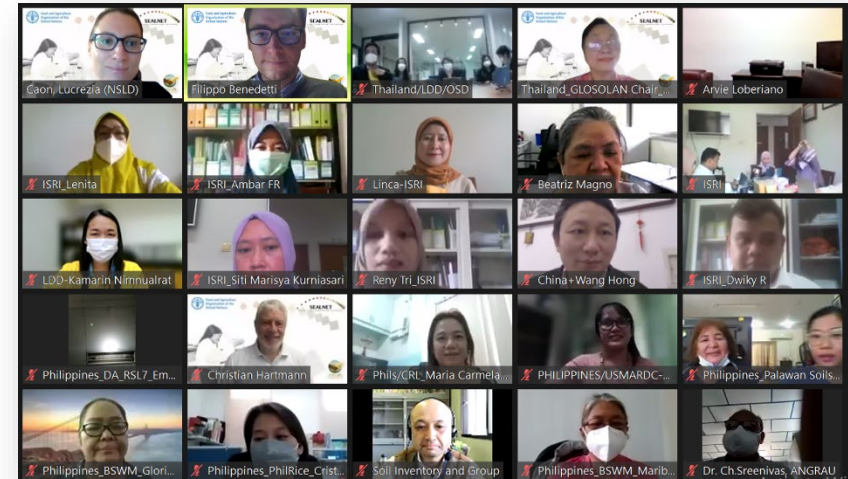
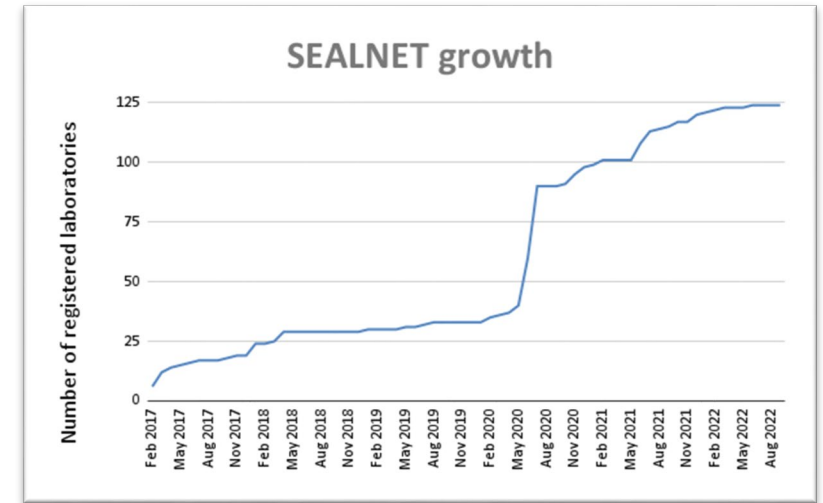
work (SEALNET) | 21-22 September 2022



The Asian Soil Laboratory Network (SEALNET)

A network of **124 laboratories** from **20 Asian countries**

Afghanistan, Bangladesh, Bhutan, Cambodia, China, India, Indonesia, Japan, Republic of Korea, Lao PDR, Malaysia, Mongolia, Myanmar, Nepal, Pakistan, Philippines, Sri Lanka Thailand, Viet Nam



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National Soil Laboratory Networks (NASOLANs)

- **Not established yet** (different reasons/conditions)

We can help you

- Low number of laboratories operating in the country
- Communication problems
- Lack of knowledge
- Need of financial resources

- **Under establishment**
(around 7 countries)

- **Established**
(around 7 countries)



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



WHY?

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

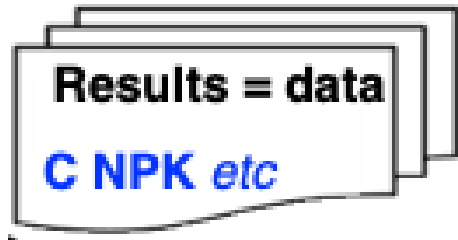
To be successful in global soil management,
Global Soil Laboratory Network is essential.

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Laboratories:
'factories'
producing data

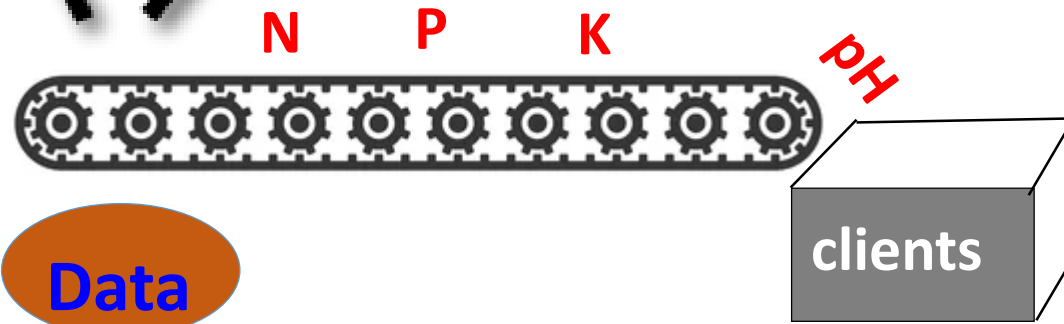
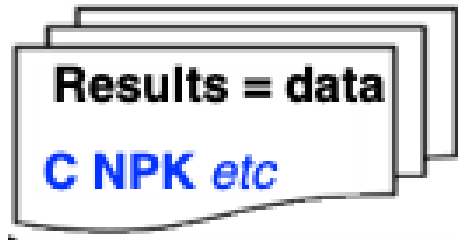


N P K PH



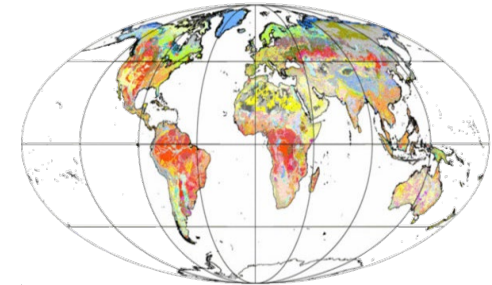
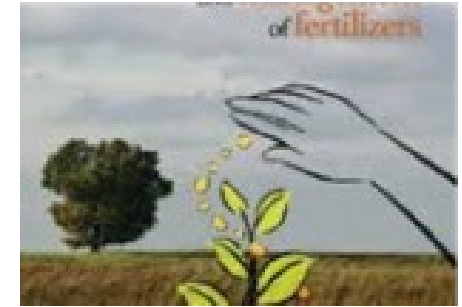


Laboratories:
'factories'
producing data



Traditionally

- Fertilisation
- Mapping





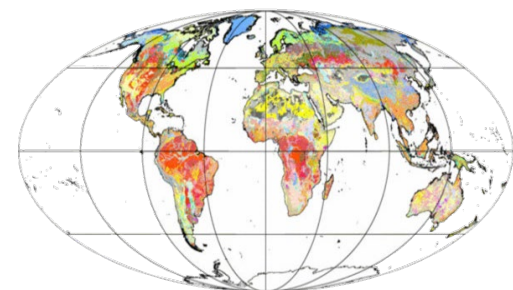
Laboratories:
'factories'
producing data

Results = data
C NPK etc

Quantifying
ODD Targets
Ecosystem
services



N P K PH



Traditionally

- Fertilisation
- Mapping

Nowadays

- Scientific conclusions
- Payment for ecosystem services



Data

QUALITY



RELIABLE

**Decisions
Actions**

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Data

QUALITY



RELIABLE

**Decisions
Actions**

Evaluation... of our work...

Soil characteristics

Decisions/Actions

Carbon

Climate change

Nitrogen

Food security/
environment pollution

Phosphorus



**Global Proficiency Testing
(PT) 2021-22**

240 labs
110 countries

6th



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

How much carbon is in this soil sample?



Wet chemistry

Walkley & Black **C_{WB}**



Dry combustion

Dumas **C_{Dum}**



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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**

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To make scientific conclusions,
uncertainty is essential



Walkley & Black



3.04 g

+/- 1.0 g

3.51 g

+/- 0.3

Dumas



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



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!

