

# Collaboration between GLOSOLAN and INSII: addressing data quality in map production



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6<sup>th</sup> Meeting of the  
**Global Soil  
Laboratory  
Network**  
(GLOSOLAN)



**GLOSOLAN**  
GLOBAL SOIL LABORATORY NETWORK

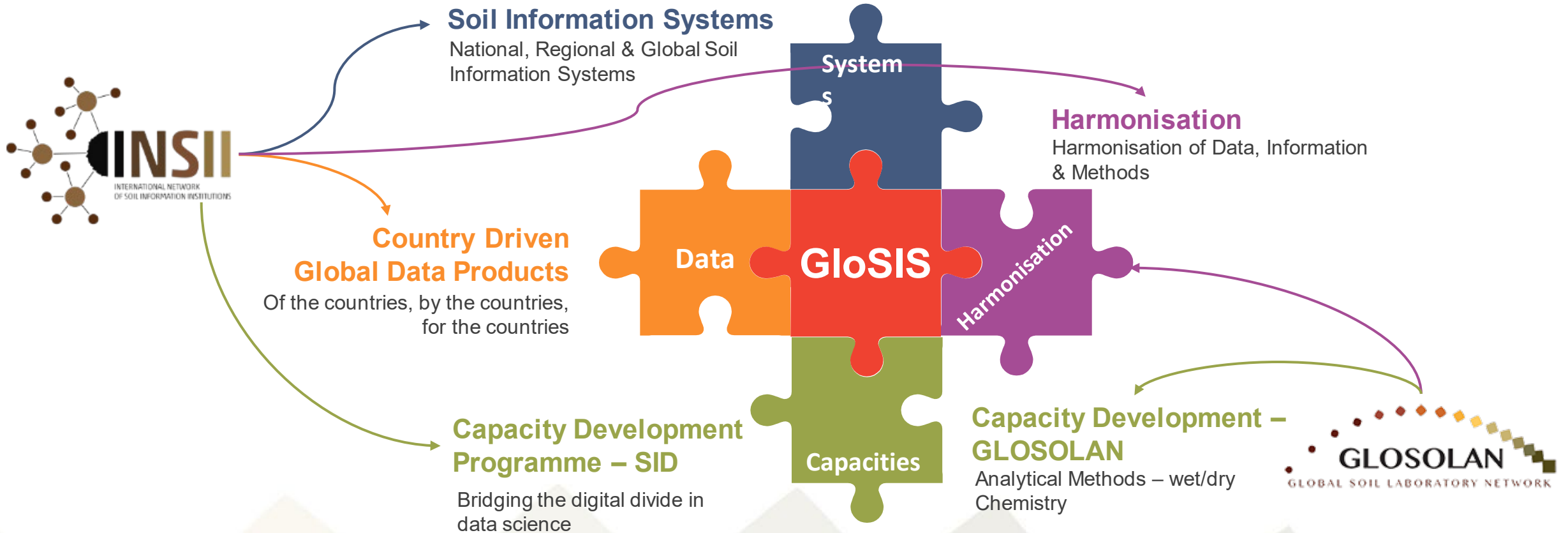


# Goals



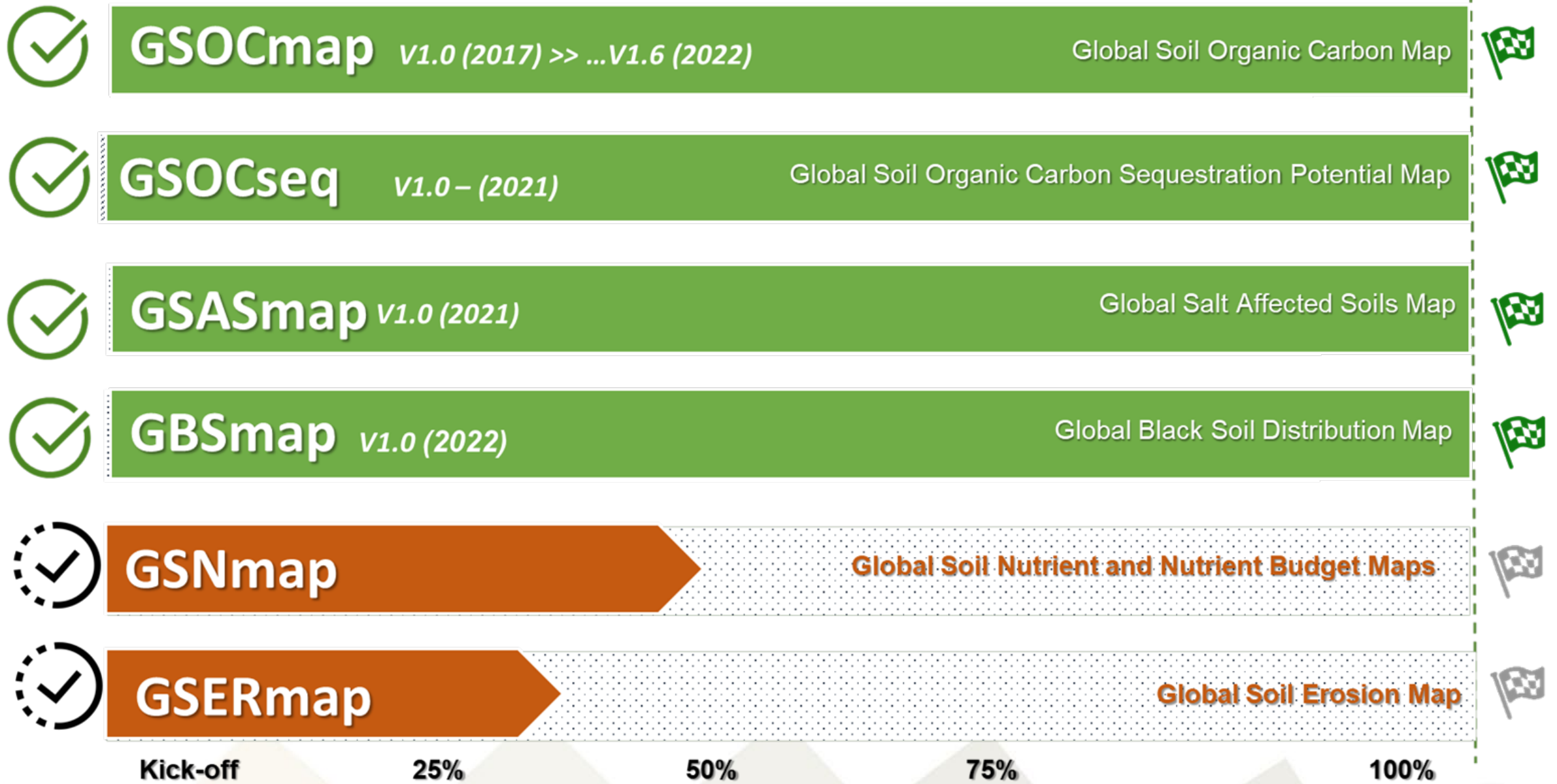
- Continuously developing actionable soil information, purely country - driven global assessments, products and systems (in accordance with international standards) that support decision making for sustainable soil management, which is instrumental for the implementation of the GSP Action Framework .
- Make soil information and data accessible, interoperable and harmonised at national, regional and global level to facilitate environmental assessments.
- Provide a robust data -driven framework for monitoring GSP Action Framework indicators and targets .

# GSPs Contribution to Data Driven Policy Making



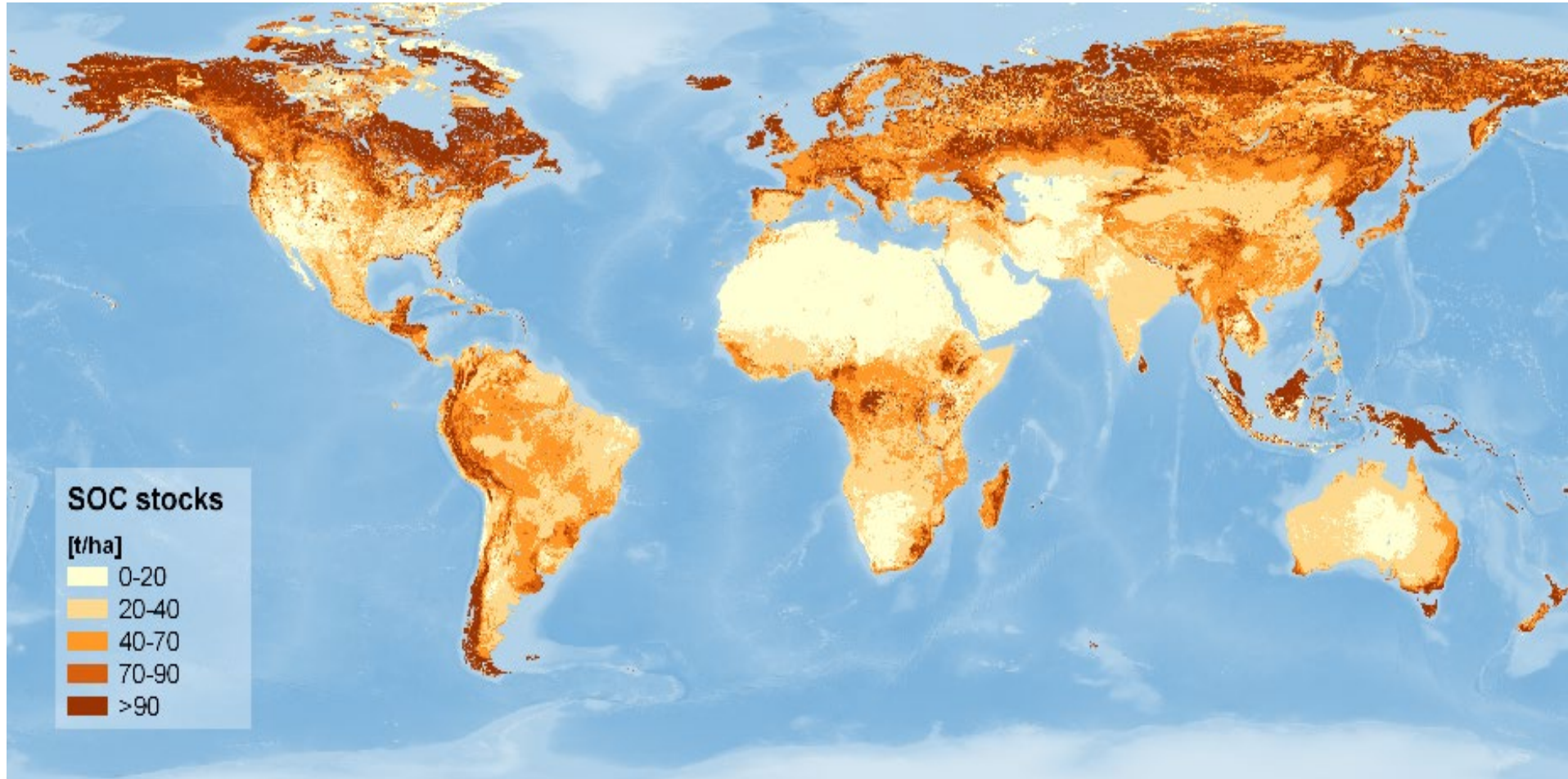
6<sup>th</sup> Meeting of the **Global Soil Laboratory Network (GLOSOLAN)** | 22-24 November 2022

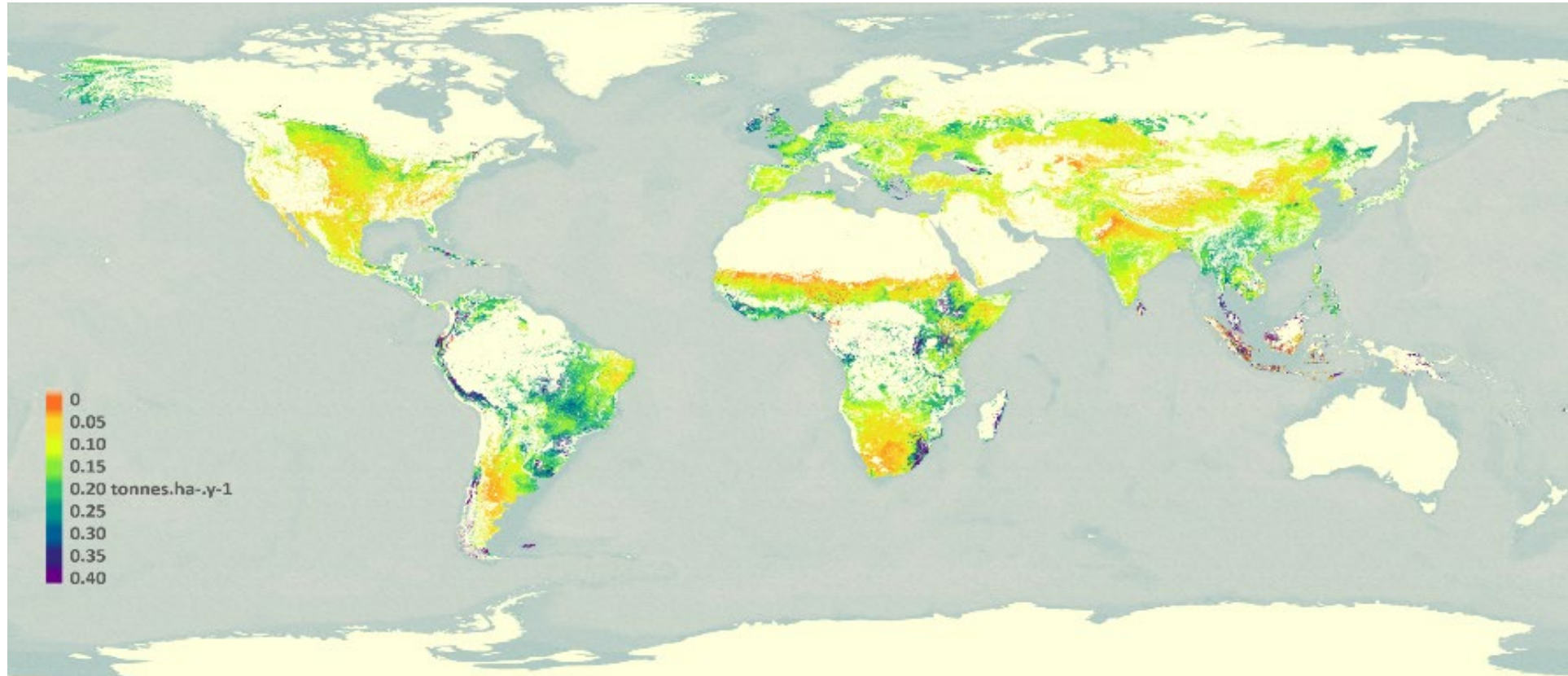




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# Global Soil Nutrient and Nutrient Budget Maps | GSNmap

## PHASE I

Mapping the current state of...

...*macronutrients* (N, P, K),

...*micronutrients*, and

...*associated soil properties* (CEC, pH, SOC, texture, BD )

- Resolution: 250 x 250 m
- Depth layers: 0 -30 cm, optional: 30 -60 & 60-100 cm

## PHASE II

Mapping soil nutrient budgets

- of macronutrients (N, P, K)
- PHASE I maps are linked with data on biological fixation, fertiliser and manure input, crop removal, ...

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# Target nutrients and soil properties

Soil property	Unit
Total Nitrogen	%
Available Phosphorus	ppm
Available Potassium	ppm
Cation exchange capacity	cmol <sub>c</sub> /kg
Soil pH	-
Clay, sand, and silt	g/100g
Soil organic carbon	%
Bulk density	g/cm <sup>3</sup>
<b>Optional:</b> Ca, S, Mg, Fe, B, Cl, Mn, Zn, Cu, Mo, Ni, Si	ppm

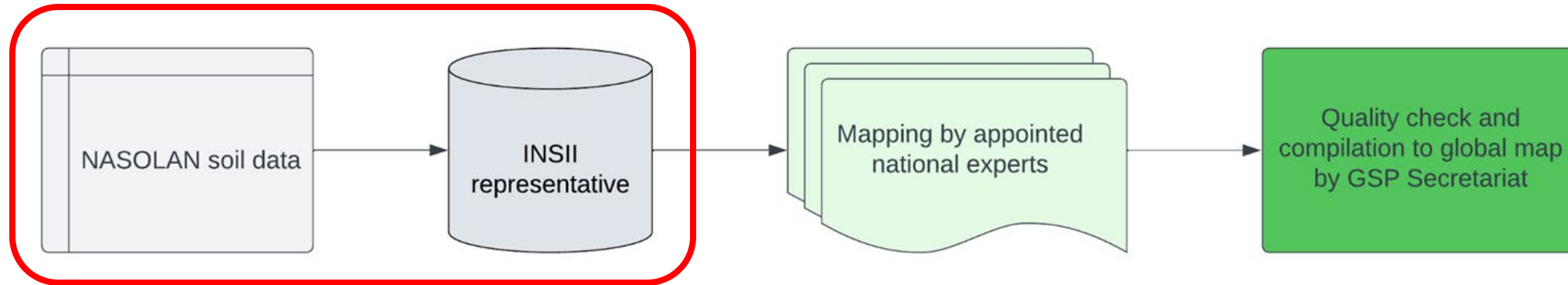


# Potential for collaboration between INSII and GLOSOLAN

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# 1. Data sharing



- Maximise soil data availability on national level to increase quality of national maps, i.e. nutrient data for the GSNmap
- [GSP soil data policy](#) as instrument to manage data sharing and data protection
  - Raw data is not shared with the GSP (only the final map)
  - Laboratories decide on degree of data protection

# Potential of data sharing

- Soil data on specific properties (particularly nutrients) is often limited and outdated
- often assessed in laboratories (mostly without precise coordinates)

## Benefits of data sharing for laboratories:

- make good **use of unexplored soil data** resources
- foster **inter-institutional collaboration** on national level
- GSP Secretariat can provide
  - technical **support in data management**
  - **capacity building** opportunities
  - improve the **technological capacity** of laboratories through projects

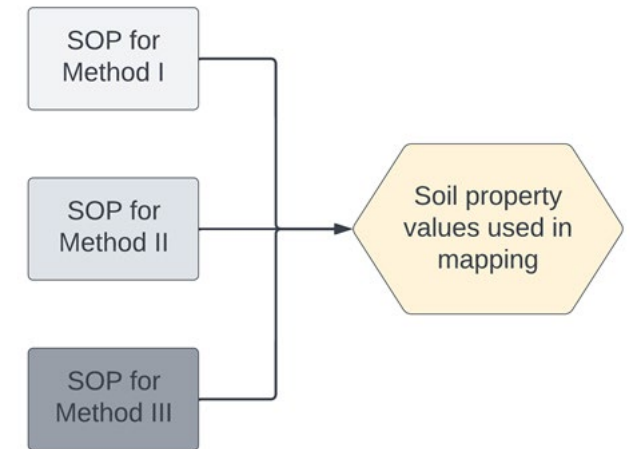
*(ongoing)*

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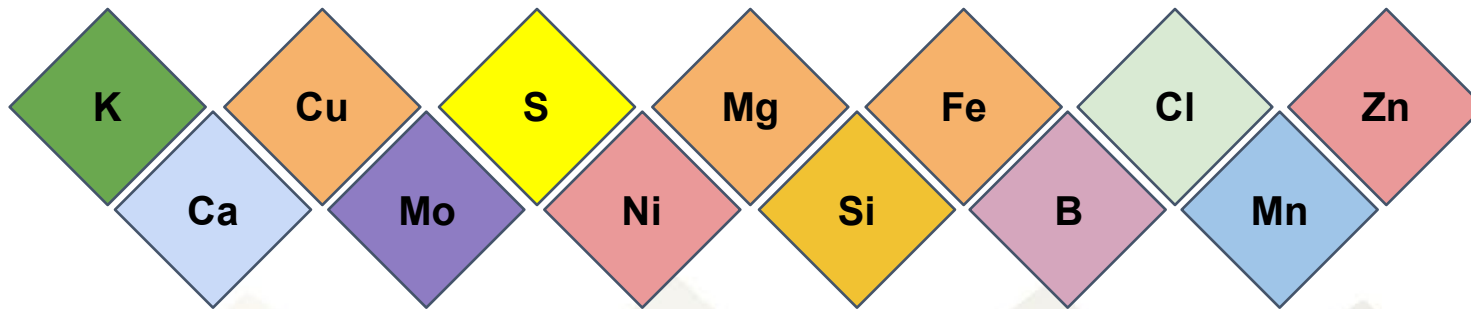


## 2. Definition of SOP conversion factors

- Soil data composed by different measurement methods
  - Harmonisation of methods has the potential to increase map quality
- ➔ Conversion factors between SOPs are needed

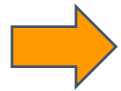


New SOPs needed for:



# 3. Development of pedo-transfer functions

- Pedo-transfer functions (PTF) are a key element of digital soil mapping (DSM) as they enable mappers to fill gaps in data
- Geographically more representative PTF are needed to be incorporated in the mapping process



Support in generating an **overview of existing PTFs for different environmental settings** from GLOSOLAN

# Collaboration: INSII - GLOSOLAN

1. Promote **exchange of data** on national level between INSII institution and NASOLAN to produce GSP data products
2. Develop SOPs and **conversion factors**
3. Advise GSP in **use of PTF for mapping** and develop new PTF



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Thank you for your  
attention!

