

# The Global Soil Laboratory Network



**and its procedures for standardisation and  
harmonisation of analytical procedures.**

**16 January 2020, SoPhie meeting, Lublin**  
*by Hanane Aroui & Christian Hartmann*

## **FOREWORD (1/6)**

**FAO and GSP: how are they connected?**

## FOREWORD (2/6)

### FAO and GSP: how are they connected?



Food and Agriculture Organization  
of the United Nations

**FAO:** “a specialized agency of the UNITED NATIONS that leads international efforts to defeat hunger”.

It has a **LAND & WATER** division, in which **SOILS** are:

Land & Water



Soils



**Eduardo Mansur**

Director, Land and Water Division at FAO

# FOREWORD (3/6)

## FAO and GSP: how are they connected?

**GLOBAL SOIL PARTNERSHIP (GSP) initiative was launched by FAO in December 2012:**

(see: <http://www.fao.org/3/a-mf277e.pdf>)

CL 145/LIM/7 Rev.1

December 2012



منظمة الأغذية  
والزراعة للأمم  
المتحدة

联合国  
粮食及  
农业组织

Food and  
Agriculture  
Organization  
of the  
United Nations

Organisation des  
Nations Unies  
pour  
l'alimentation  
et l'agriculture

Продовольственная и  
сельскохозяйственная  
организация  
Объединенных  
Наций

Organización  
de las  
Naciones Unidas  
para la  
Alimentación y la  
Agricultura

E



**GLOBAL SOIL  
PARTNERSHIP**

COUNCIL

**Hundred and Forty-fifth Session**

**Rome, 3-7 December 2012**

**Terms of Reference of the Global Soil Partnership (GSP)**



**Ronald Vargas**  
**Secretary of the**  
**Global Soil Partnership,**  
**Land and Water Officer**

## FOREWORD (4/6)

# FAO and GSP: how are they connected?

The terms of references (ToR) indicate:

## MANDATE

### 3. Mandate

6. The mandate of the GSP is to improve governance of the limited soil resources of the planet in order to guarantee healthy and productive soils for a food secure world, as well as support other essential ecosystem services, in accordance with the sovereign right of each State over its natural resources. The GSP should become an interactive and responsive partnership.

7. The GSP will also develop awareness and contribute to the development of capacities, build on best available science, and facilitate/contribute to the exchange of knowledge and technologies among stakeholders for the sustainable management and use of soil resources.

**GOVERNANCE OF LIMITED SOIL RESSOURCES  
BUILD ON THE BEST AVAILABLE SCIENCE  
CONTRIBUTE TO THE EXCHANGE OF KNOWLEDGE**

## FOREWORD (5/6)

# FAO and GSP: how are they connected?

The terms of references (ToR) indicate:

## PILLARS OF ACTION

### 6. Pillars of Action

17. The GSP will be organized around five main pillars of action:

- a) Promote sustainable management of soil resources.
- b) Encourage investment, technical cooperation, policy, education awareness and extension in soils.
- c) Promote targeted soil research and development focusing on identified gaps and priorities.
- d) Enhance the quantity and quality of soil data and information.
- e) Support harmonization of methods, measurements and indicators for sustainable soil management, with a national validation that takes into account the differences of production systems and ecosystems.

## 5 PILLARS:

**PILLAR 5 is DEDICATED TO METHOD HARMONISATION**

## FOREWORD (6/6)

### FAO and GSP: how are they connected?

The terms of references (ToR) indicate:

**FINANCE**

#### **8. Financial Implications**

19. Financial implications of the GSP rely on the principle of “partnership”. Each GSP partner may contribute with different inputs to the successful implementation of the GSP.

20. FAO will lead the GSP implementation process and will provide funds from its Regular Programme, to support the Secretariat by providing a full-time Professional staff member and General Service support, subject to the approval by its Governing Bodies. Extra-budgetary funds will be mainstreamed to support implementation of GSP actions, including regional and national GSP activities.

**FAO PROVIDES ADMINISTRATIVE SUPPORT  
GSP HAS TO FIND EXTRA BUDGET FOR ITS ACTIVITIES**

## FOREWORD (1/6)

FAO and GSP AND GLOSOLAN:

how are they connected?



?





FAO



GSP



**Partners**  
(institutions,  
companies, etc)

**SOIL LABORATORIES DATA**

Pillar 5: Harmonization of methods,  
measurements and indicator for the  
sustainable management and protection of  
soil resources



FAO



GSP



**Partners**  
(institutions,  
companies, etc)

Board: **Chair/Vice-chair** + **GSP coordinator**



*(volunteers)*



*(contract)*



FAO



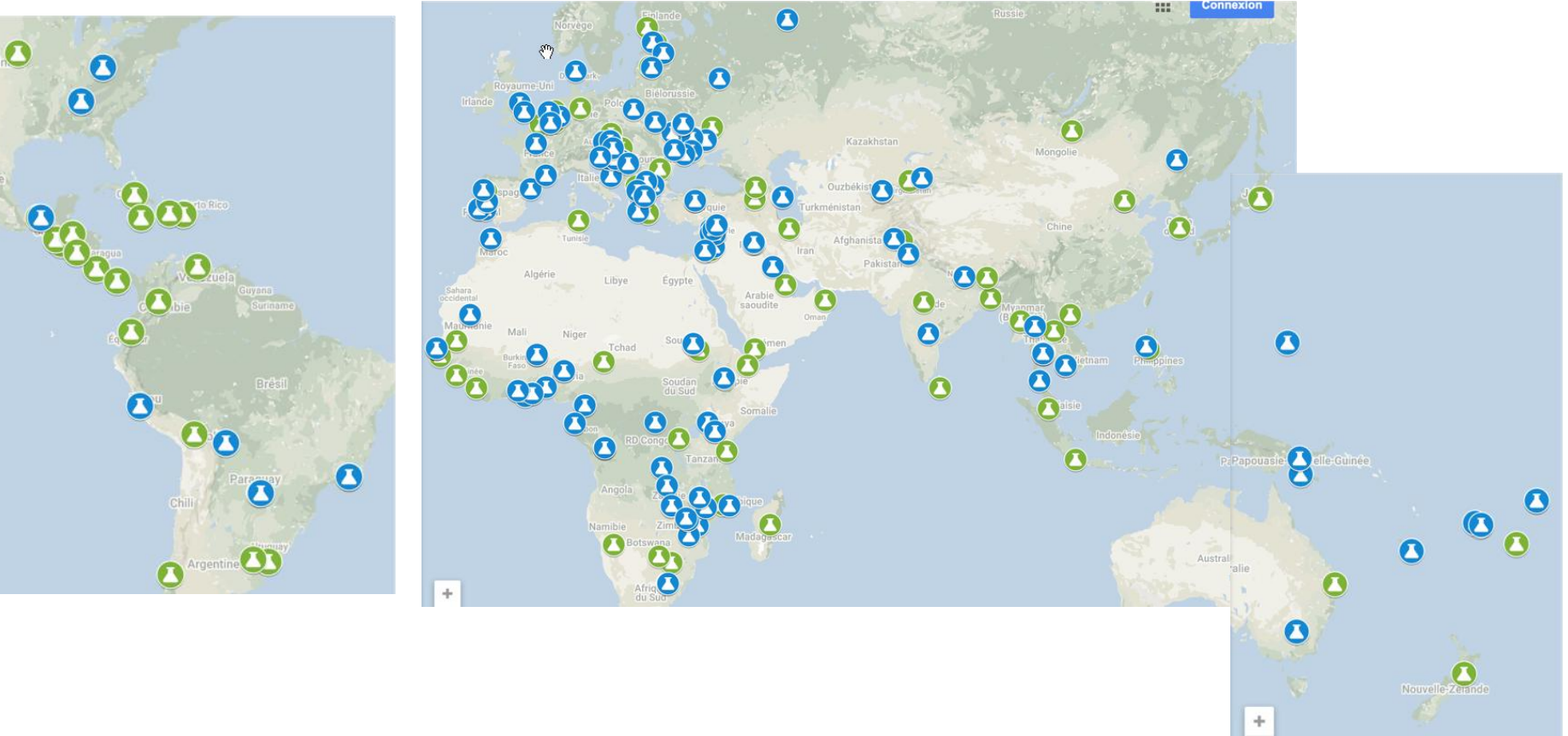
GSP



**Partners**  
(institutions,  
companies, etc)

Board: **Chair/Vice-chair** + **GSP coordinator**

**Nearly 300 laboratories registered (Jan. 2020)**





FAO



GSP



**Partners**  
(institutions,  
companies, etc)

Board: **Chair/Vice-chair** + **GSP coordinator**

**4 thematic areas of work:**



FAO



GSP

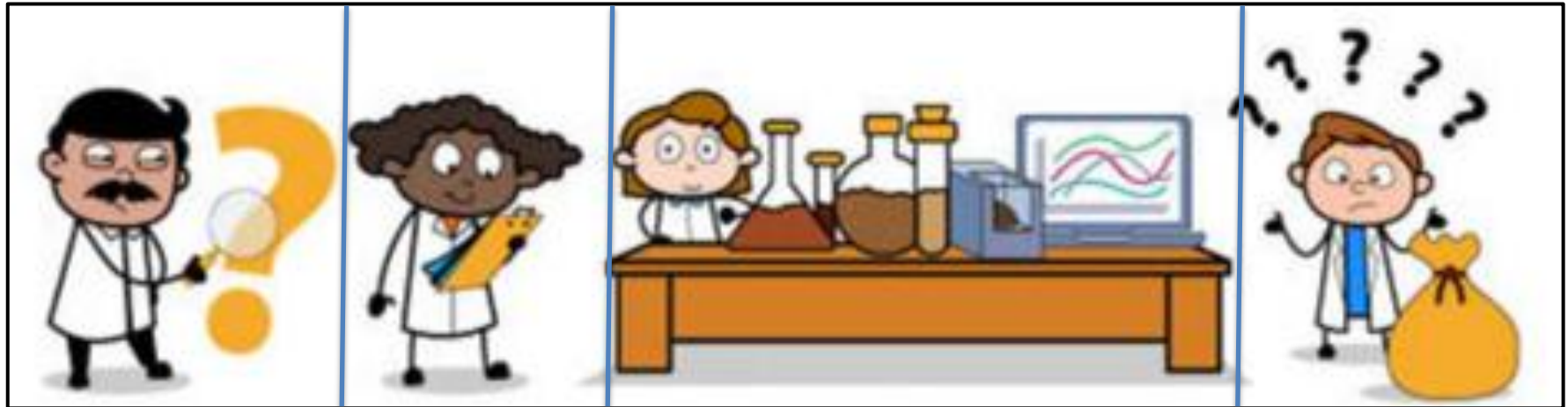


**Partners**  
(institutions,  
companies, etc)

Board: **Chair/Vice-chair** + **GSP coordinator**

## 4 thematic areas of work:

(<http://www.fao.org/global-soil-partnership/pillars-action/5-harmonization/glosolan/en/>)



Quality Assurance  
Quality Control

**Standard  
Operating  
Procedures**

**SOPs**

Equipment

Fertilizers quality  
assessment



FAO



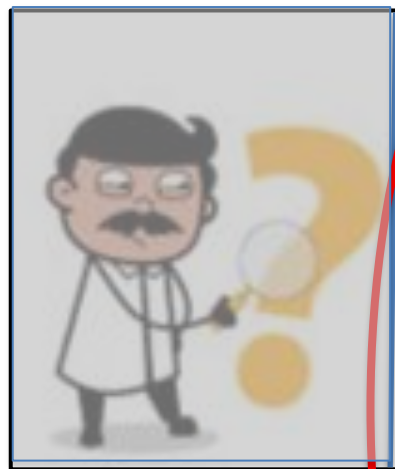
GSP



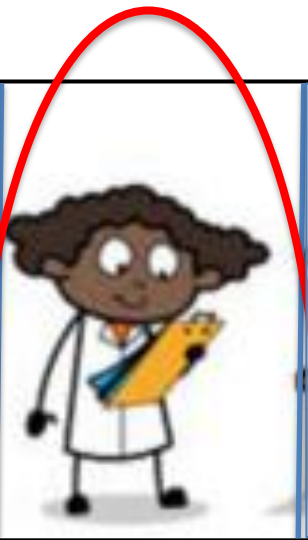
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(institutions,  
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**4 thematic areas of work:**



Quality Assurance  
Quality Control



**Standard  
Operating  
Procedures**

SOPs



Equipment



Fertilizers quality  
assessment

**A collaborative team project...**





For each of the SOPs:

**One GLOBAL leader/coordinator**

**Several REGIONAL NETWORK leaders/coordinators + NATIONAL contributors**





For each of the SOPs:

**One GLOBAL leader/coordinator**

**Several REGIONAL NETWORK leaders/coordinators + NATIONAL contributors**



**All contributors and leaders ARE VOLUNTEERS**





## All networks were very recently created:

**Nov 2017**

**Feb 2018**

**May 2019**

**Oct 2019**

**Oct 2019**





## How are draft of SOPs prepared and endorsed?

Regional SOP leaders collect information on procedures existing in the different countries



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Global + Regional SOP leaders work together (e.mails) to prepare a draft of a 'harmonized' SOP



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When possible, harmonized SOPs draft are presented & discussed at RESOLANs' meetings (from April to Oct)



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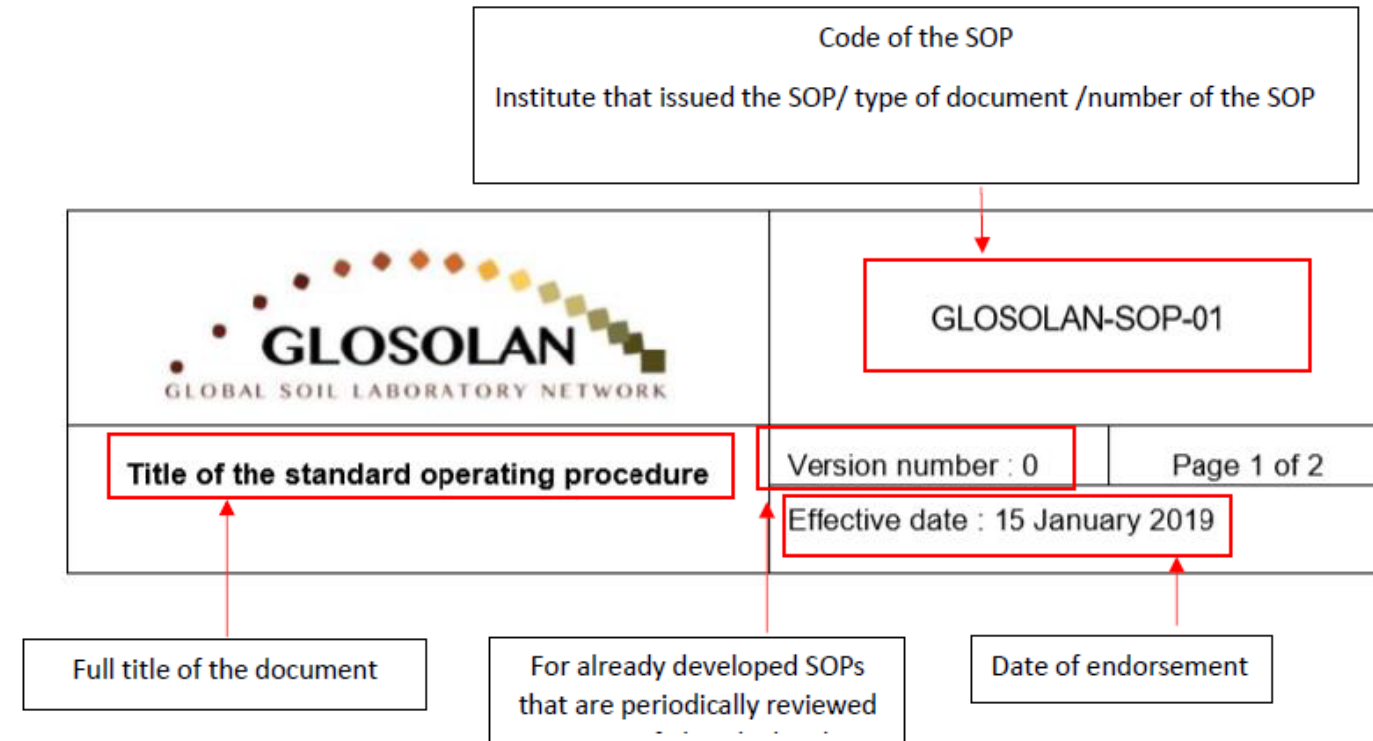
**The final draft SOP is presented, discussed and endorsed at the annual GLOSOLAN meetings (Nov., FAO Rome, Italy)**



**What does GLOSOLAN SOPs look like?**



# What does GLOSOLAN SOPs look like?



For already developed SOPs that are periodically reviewed and changed when necessary.

## VERSION HISTORY

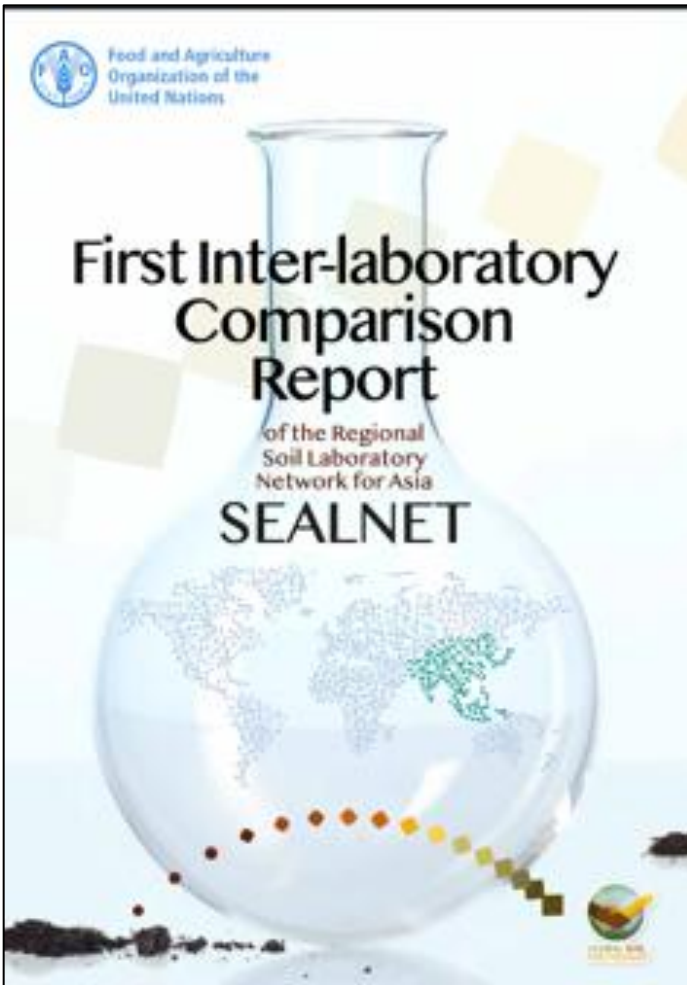
N°	Date	Description of the modification	Type of modification
01			
02			
03			





# How are GLOSOLAN documents published?

All contributors are cited or acknowledged:



by

*Nopmanee Suvannang*, Chairperson of GLOSOLAN  
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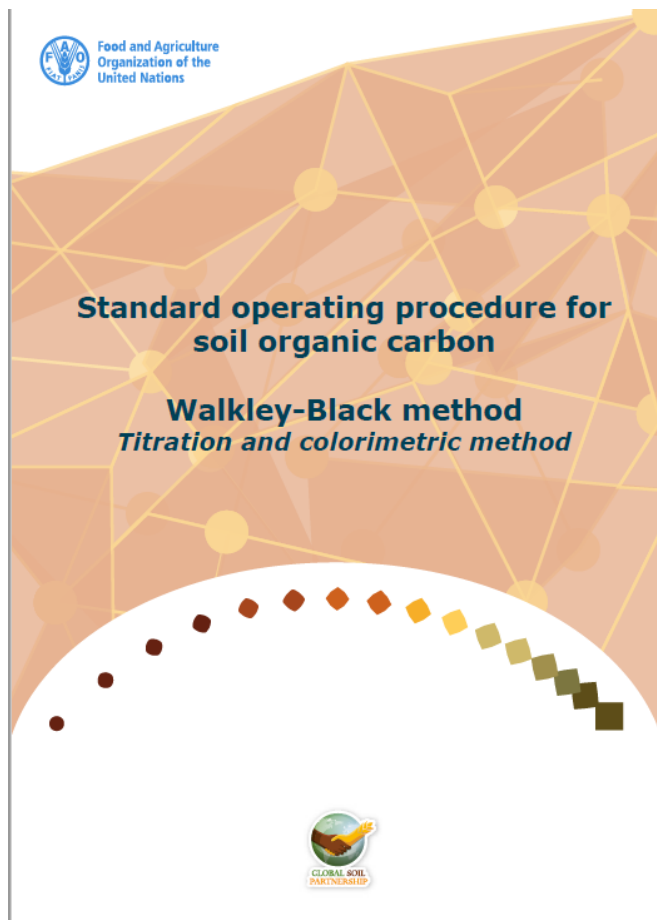
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# How are GLOSOLAN documents published?

**All contributors are cited or acknowledged:**

Modify by	Revision	Approval date	Validated date
GLOSOLAN SOP Tech. W.G. Leader: G. Nilo, Philippines	3rd GLOSOLAN meeting	3rd GLOSOLAN meeting	27 October 2019



## 12. Appendix I. Acknowledgements

GLOSOLAN thanks the Asian Soil Laboratory Network (SEALNET), the Latin American Soil Laboratory Network (LATSOLAN) and Ms. Nopmanee Suvannang, GLOSOLAN Chair for preparing the first draft of this SOP. GLOSOLAN also thanks the Regional Soil Laboratory Networks (SEALNET, LATSOLAN, AFRILAB and EUROSOLAN) that reviewed this SOP at their annual meetings and the participants in the 3<sup>rd</sup> GLOSOLAN meeting (28-30 October 2019).

## 13. Appendix II. List of Authors

**Main authors (in alphabetical order):**

- Mr. Bergil G. Bernaldo, Bureau of Soils And Water Management Laboratory Services Division, **Philippines**
- Ms. Floria Bertsch, CIA-UCR, **Costa Rica**

## 14. Appendix III. Contributing laboratories

GLOSOLAN thanks the following laboratories for completing the GLOSOLAN form on the method and providing information on their Standard Operating Procedure for the Walkley & Black Method (titration and colorimetric methods), which were used as baseline for doing the global harmonization:

From the Asian region:

- ICRISAT, **India**
- ICAR-Indian Institute of Soil Science. **India**



how can Glosolan and SOPHIE collaborate?







how can Glosolan and SOPHIE collaborate?




Thanks for your attention





## Which SOPs are concerned?

During the 3<sup>rd</sup> GLOSOLAN meeting it was suggested to go faster and finish a first draft of Soil Particles Distribution in OCTOBER 2020 to be sure to keep the original deadline:

be edited according to the table	SOPs leaders	
<p>Preparation of the SOPs reporting form and drafting of the SOPs to harmonize in 2020:</p> <ul style="list-style-type: none"><li>- pH in water 1:2.5</li><li>- pH in CaCl<sub>2</sub> and KCl</li><li>- Organic carbon by Tyurin*</li><li>- EC saturated paste</li><li>- EC 1:5 (global leader Gina)</li><li>- Bray I and II</li><li>- Mehlich I</li><li>- Mehlich III</li><li>- Olsen (global leader Gina)</li><li>- Total Nitrogen by Kjeldhal and Dumas</li><li>- Mineral Nitrogen (KCl 1 or 2 M)</li><li>- Soil particle-size distribution (pipette and hydrometer)</li></ul> <p>Drafts to be presented at the 4<sup>th</sup> GLOSOLAN meeting</p>	<p>SOPs global and regional leaders with the support of the GSP Secretariat</p>	<p>Reporting form ready by December 2019</p> <p>Draft SOPs ready by March 2020 (to follow: discussion at the RESOLANs and validation through PT)</p> <p>*May 2020</p>  <p>Draft SOPs reviewed and endorsed on October 2020</p>
<p>Start the work on health and safety</p>	<p>TBC</p>	<p>October 2020</p>