Progresses, needs and way forward

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6th Meeting of the Global Soil Laboratory Network (GLOSOLAN)
Updates on the review of the FAO Soils Bulletin 74 – “Guidelines for Quality Management in Soil and Plant Laboratories”

http://www.fao.org/3/W7295E/W7295E00.htm

- This activity was included in a project: a consultant (GLOSOLAN expert) will be hired to work on the update of this publication.

- The consultant will update the document keeping into consideration the suggestions made by GLOSOLAN over the years.

- Interested members of the GLOSOLAN’s Technical Committees will be involved in the review of the updated version of the document.
Transfer functions

Preparation of guidelines for the development of transfer functions within soil laboratories. PENDING

- Who can work on this? Any volunteer?
Implementation steps of the RECSOIL GREEN PATH

PHASE I: Identification of priority countries to implement RECSOIL
- Based on the GSOCseq map and country readiness

PHASE II: Definition of project area and priorities to implement RECSOIL
- Selection of project area and land uses
- Definition of objectives: evaluation of SOC sequestration, addressing of other soil threats
- Identification of national stakeholders and distribution of responsibilities
- Gathering of spatial, management and socioeconomic data of the project area - Metadata
- Stratification of the project area
- Definition of the sampling design and density

PHASE III: Technical training and capacity building
- Farmers (Global Soil Doctor Programme)
- Soil laboratories (through GLOSOIL)
- National technical support (through GSS Secretariat)

PHASE IV: Baseline assessment and identification of soil management interventions
- Baseline assessment through three datasets
- Identification of soil management interventions

PHASE V: Implementation of SSM, monitoring, measuring, and reporting
- Implementation of sustainable soil management practices
- Annual monitoring
- Mid-term reporting

PHASE VI: Soil organic carbon sequestration and soil health final verification
- Final assessment of soil health status (4 years after the implementation of SSM practices)
- Final estimation of SOC changes
- Final project report
1. SSM Protocol - Green Path -

4 Key indicators

<table>
<thead>
<tr>
<th>Soil productivity</th>
<th>Agricultural productivity or biomass in dry matter (t ha⁻¹ year⁻¹)</th>
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<tbody>
<tr>
<td>Soil organic carbon</td>
<td>Organic carbon (%)</td>
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</table>

- **Soil physical properties**
  - Bulk density (kg dm⁻³)
  - In some cases, bulk density can be complemented by available water capacity, or other relevant soil physical properties.
  - (See additional indicators)

- **Soil biological activity**
  - Soil respiration rate (gCO₂ m⁻² d⁻¹)
  - Ideally combined with at least one other biological indicator.
  - (See soil biological activity p. 4 and 5)
Green Path - SSM Protocol – Additional Indicators – depend on the main threats to soil health

- Soil Nutrients (P, N, K, etc.)
- Soil salinity (EC - Electrical conductivity)
- Acidity – Alkalinity (pH)
- Available water capacity (FC-PWP)
- Water infiltration
- Soil penetration resistance
- Erosion (USLE, erosión pins, Gerlacht boxes, etc.)
- Biological activity (Enzimatic activity, microbial biomass, etc.)
- Diversidad (e.g. pitfall traps, etc.)
- Soil pollution (concentration, trace elements, pesticides, etc.)

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GLOSOLAN role

- SOPs for indicators
- Capacity building for participating labs
- Analyse samples at year 0 (baseline), year 4 – Green path
- Analyse samples at year 0 (baseline), year 2, 4, 6 and 8 – Carbon path
- Strengthen relationships with farmer organization
- Support data interpretation (ranges at national level)
Transfer functions between GLOSOLAN SOPs to support the implementation of RECSOIL

• What transfer functions is it possible to develop?
• Who can do it?
• How much would it cost?
**Transfer functions between GLOSOIL SOPs to support the implementation of RECSOIL**

- **CARBON**: move the discussion to the experts that worked on the harmonization of these methods. Possibility to test the TFs through the PT?

<table>
<thead>
<tr>
<th></th>
<th>Walkley and Black</th>
<th>Tyurin</th>
<th>Dumas</th>
<th>Loss of ignition</th>
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<tbody>
<tr>
<td>Walkley and Black</td>
<td>-</td>
<td>it should be possible to get it using the TF between Tyurin and WB. Mathematical inverse</td>
<td>LDD (Thailand) already has a TF on this...but not on SOPs. LDD to take lead on this??</td>
<td>Under preparation by Russia already</td>
</tr>
<tr>
<td>Tyurin</td>
<td>Available</td>
<td>-</td>
<td></td>
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Thanks for your attention