Food and Agriculture Organization of the United Nations

9th Asian Soil Partnership plenary meeting

23-24 April 2024

Online

GSP Developments of regional interest

Sergejus Ustinov

GSP Secretariat

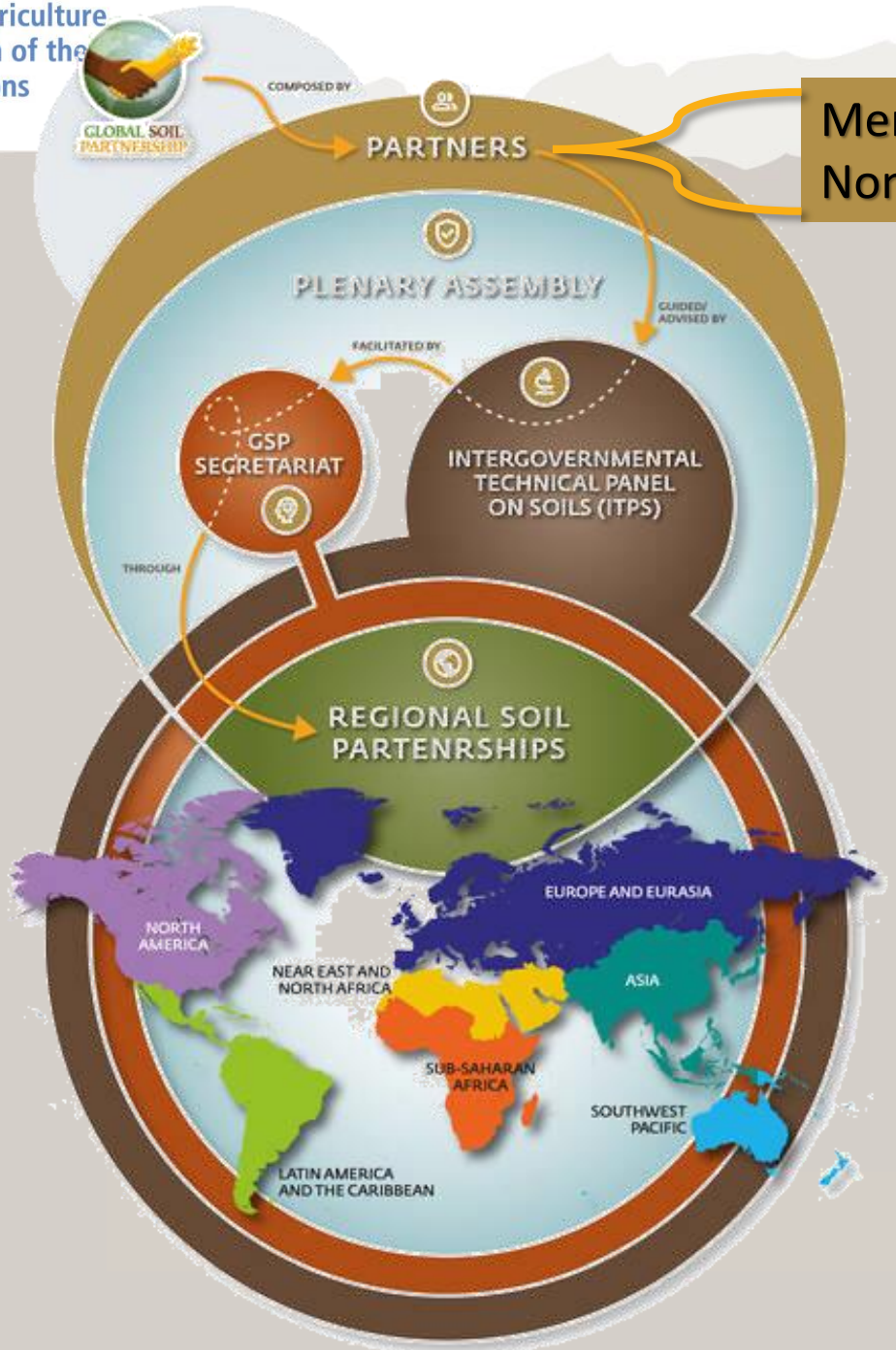
GLOBAL SOIL PARTNERSHIP

Global Soil Partnership

- Established by FAO Council in 2012
- A mechanism to develop a **strong partnership** and enhance **collaboration** between all stakeholders
- With the common objective of improving **soil governance** and promoting **sustainable soil management**.

http://www.fao.org/global-soil-partnership/en/

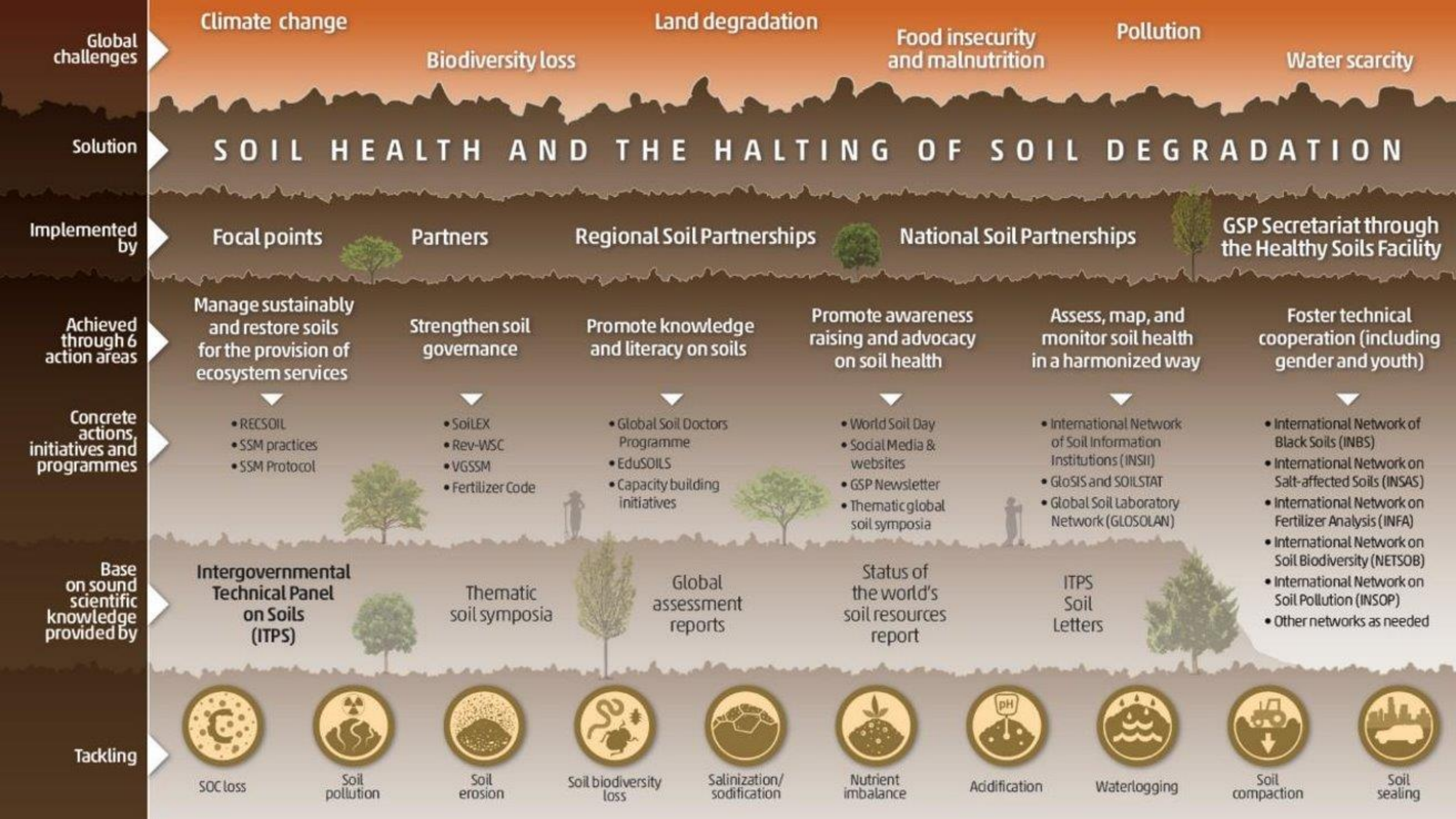
Food and Agriculture Organization of the United Nations



Member countries
Non-governmental partners

- 164 focal points appointed directly by FAO Members and over 500 partners worldwide
- 7 regional partnerships
- 4 sub-regional partnerships within Europe: Eurasia, Alpine, Pyrenean, Western Balkans
- 14 national soil partnerships (Brazil, Colombia, Costa Rica, Cuba, Italy, Mongolia, Malawi, Nicaragua, Philippines, Portugal, Slovakia, Slovenia, Thailand, and Ukraine

GLOBAL SOIL PARTNERSHIP


Global challenges
Climate change
Land degradation
Food insecurity and malnutrition
Pollution
Biodiversity loss
Water scarcity
Solution
SOIL HEALTH AND THE HALTING OF SOIL DEGRADATION
Implemented by
Focal points
Partners
Regional Soil Partnerships
National Soil Partnerships
GSP Secretariat through the Healthy Soils Facility
Achieved through 6 action areas
Manage sustainably and restore soils for the provision of ecosystem services
Strengthen soil governance
Promote knowledge and literacy on soils
Promote awareness raising and advocacy on soil health
Assess, map, and monitor soil health in a harmonized way
Foster technical cooperation (including gender and youth)
Concrete actions, initiatives and programmes
• RECSOIL
• SSM practices
• SSM Protocol
• SoilEX
• Rev-WSC
• VGSSM
• Fertilizer Code
• Global Soil Doctors Programme
• EduSOILS
• Capacity building initiatives
• World Soil Day
• Social Media & websites
• GSP Newsletter
• Thematic global soil symposia
• International Network of Soil Information Institutions (INSII)
• GloSIS and SOILSTAT
• Global Soil Laboratory Network (GLOSOLAN)
• International Network of Black Soils (INBS)
• International Network on Salt-affected Soils (INSAS)
• International Network on Fertilizer Analysis (INFA)
• International Network on Soil Biodiversity (NETSOB)
• International Network on Soil Pollution (INSOP)
• Other networks as needed
Base on sound scientific knowledge provided by
Intergovernmental Technical Panel on Soils (ITPS)
Thematic soil symposia
Global assessment reports
Status of the world's soil resources report
ITPS Soil Letters
Tackling
SOC loss
Soil pollution
Soil erosion
Soil biodiversity loss
Salinization/ sodification
Nutrient imbalance
pH
Acidification
Waterlogging
Soil compaction
Soil sealing

GSP Action Framework 2022- 2030

✓ **Vision**

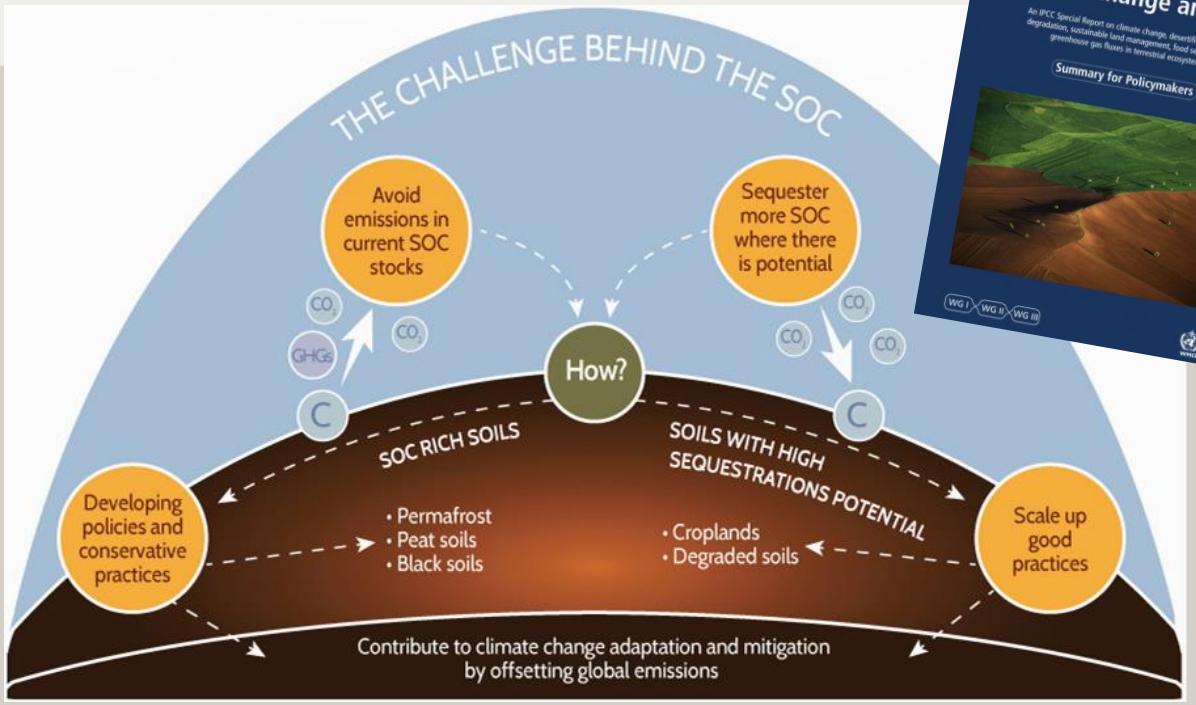
A world whose soils are **healthy and resilient**, ensuring the sustained provision of ecosystem functions and services for all, leaving no one behind.

To this end, the GSP must work to **improve and maintain the health of at least 50 percent of the world's soils by 2030**.

https://fao.org/fileadmin/user_upload/GSP/tenth_PA/GSP_Action_Framework_FINAL.pdf

Manage sustainably and restore soils for the provision of ecosystem services

- RECSOIL
- SSM practices
- SSM Protocol



When adopting Sustainable Soil Management Practices, we provide multiple benefits including: reducing GHG emissions, maintaining and enhancing carbon sinks and building resilience.

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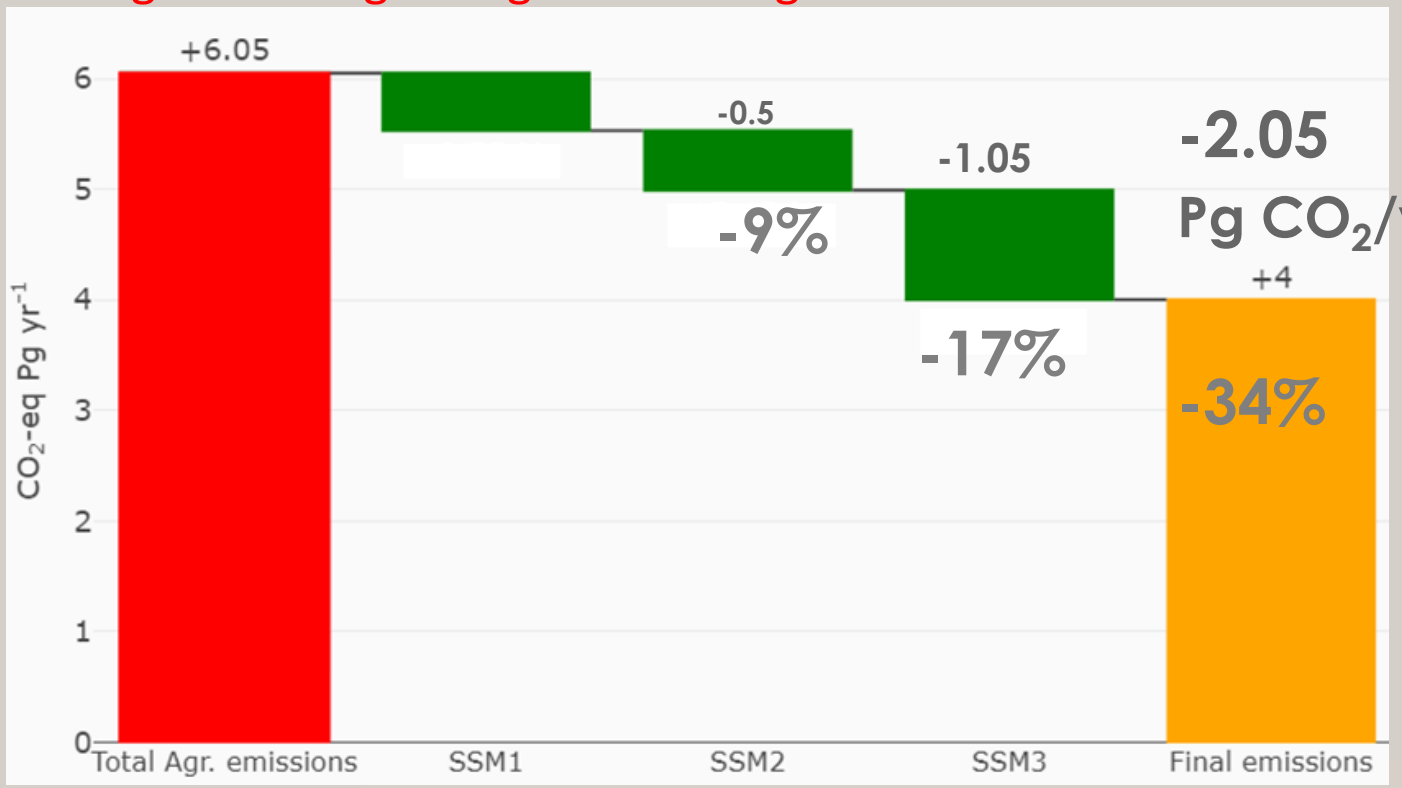
Agricultural soils play an important role in mitigating GHG emissions *

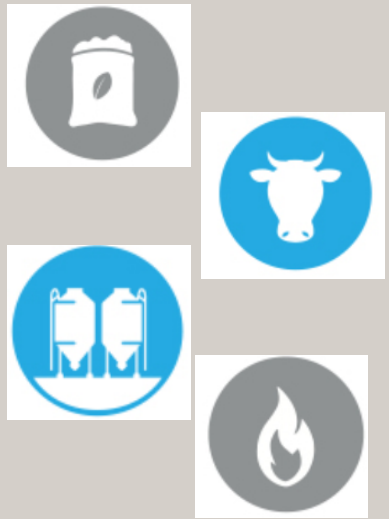
*Excluding blank countries

If managed sustainably, soil can sequester up to 0.56 petagrams of carbon - or 2.05 gigatonnes of CO2 equivalent -- per year, having the potential to offset yearly as much as 34 percent of agricultural global greenhouse gas emissions.

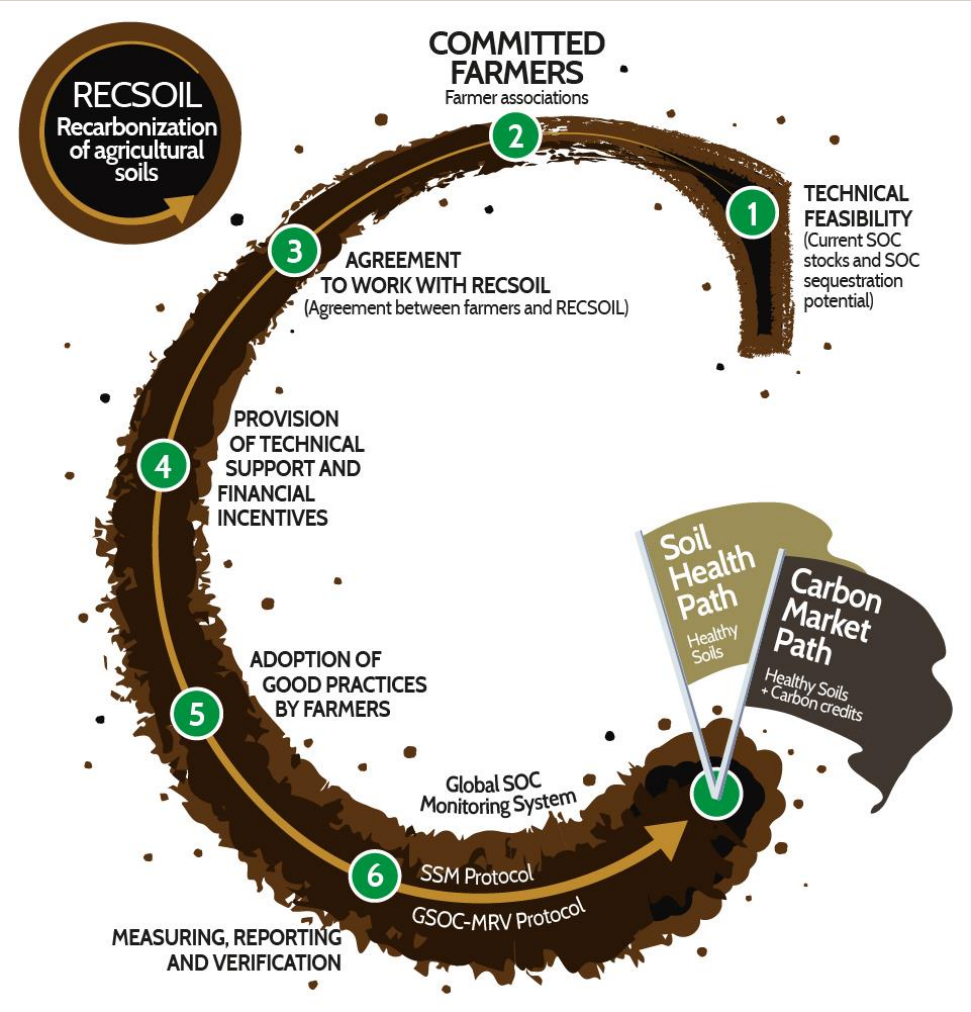


*Total Agricultural Emissions from FAOSTAT (2019)

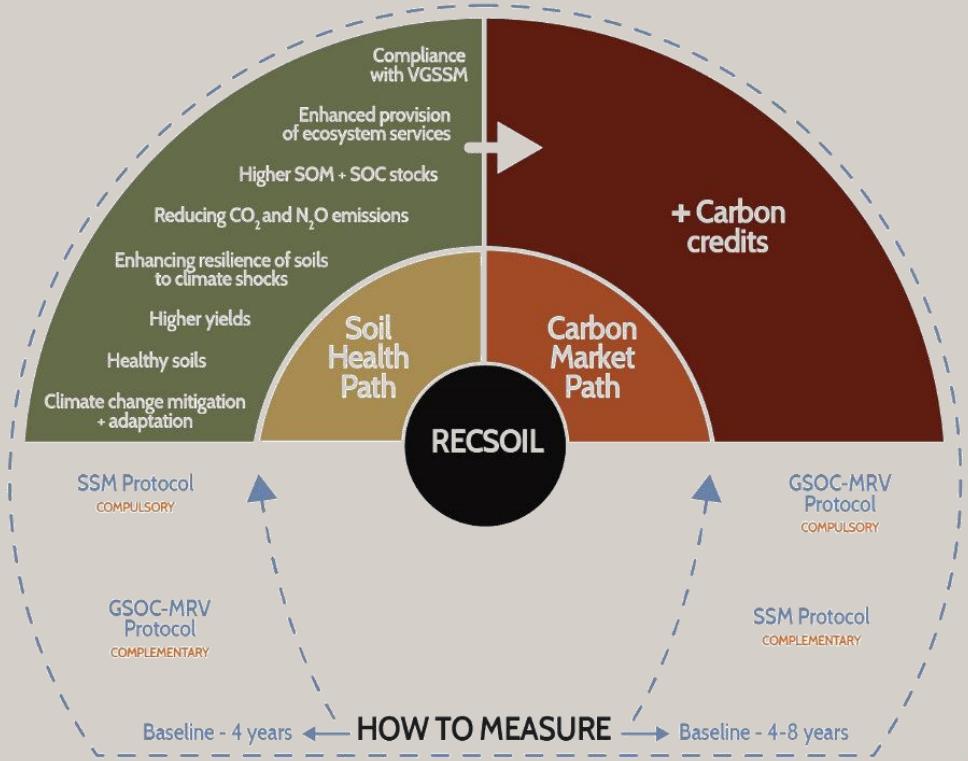
Also work on other Mitigation strategies:



Adoption of good practices by farmers for maintaining and enhancing SOC stocks and reducing GHG, and boosting soil health and co-benefits (ecosystem services).



RECSOIL contributes to mitigating climate change, but also to increasing the resilience and adaptation of agricultural systems

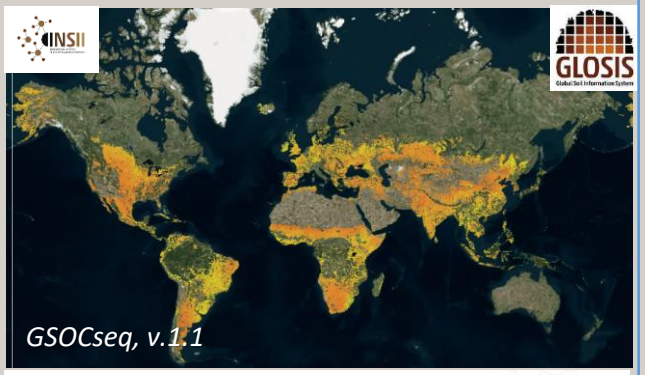


https://www.fao.org/global-soil-partnership/areas-of-work/recarbonization-of-global-soils/en/

GLOBAL SOIL PARTNERSHIP

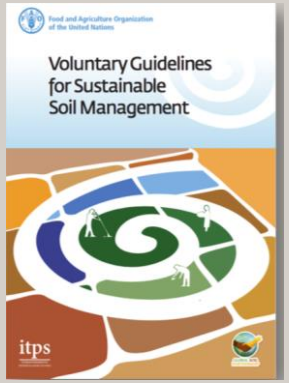
RECSOIL Toolbox

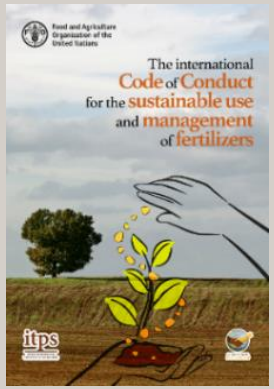
Feasibility Assessment

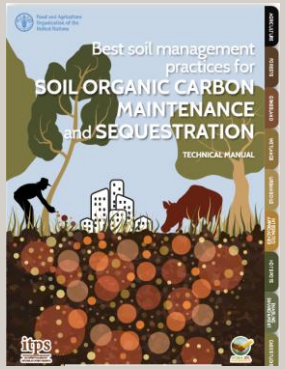


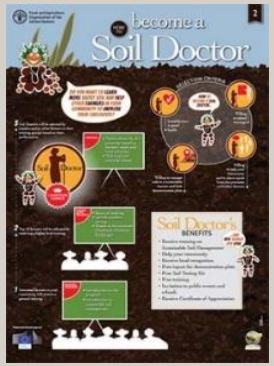
Capacity building: soil data and mapping

Planning & Implementing Interventions



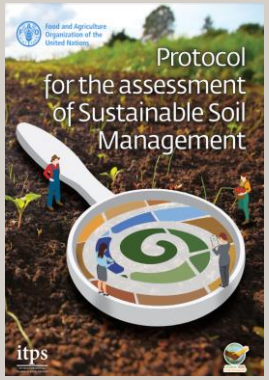


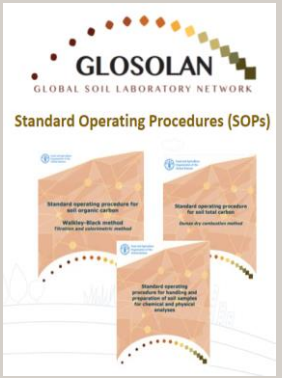


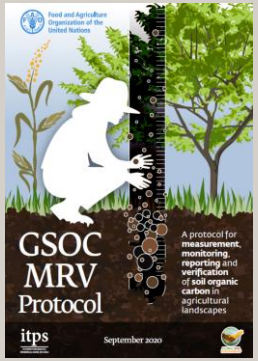


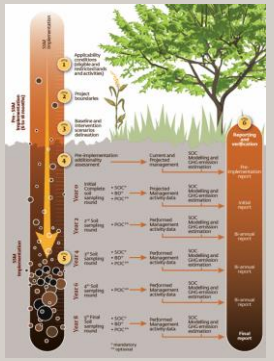
Supporting Materials

Monitoring, Reporting & Verifying





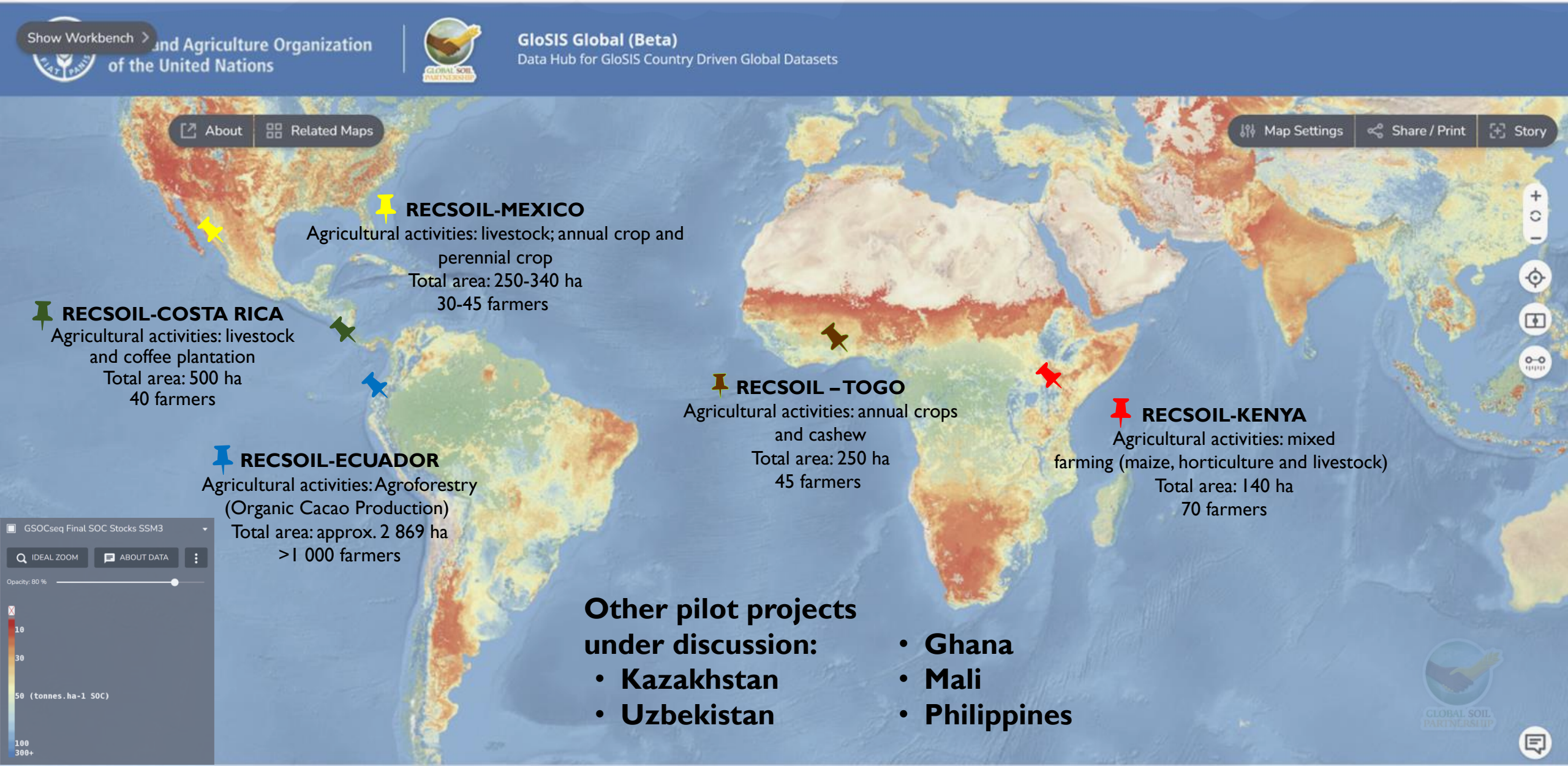




GLOBAL SOIL PARTNERSHIP

RECSOIL – Green Path

Piloting countries



RECSOIL-MEXICO
Agricultural activities: livestock; annual crop and perennial crop
Total area: 250-340 ha
30-45 farmers

RECSOIL-COSTA RICA
Agricultural activities: livestock and coffee plantation
Total area: 500 ha
40 farmers

RECSOIL-ECUADOR
Agricultural activities: Agroforestry (Organic Cacao Production)
Total area: approx. 2 869 ha
>1 000 farmers

RECSOIL – TOGO
Agricultural activities: annual crops and cashew
Total area: 250 ha
45 farmers

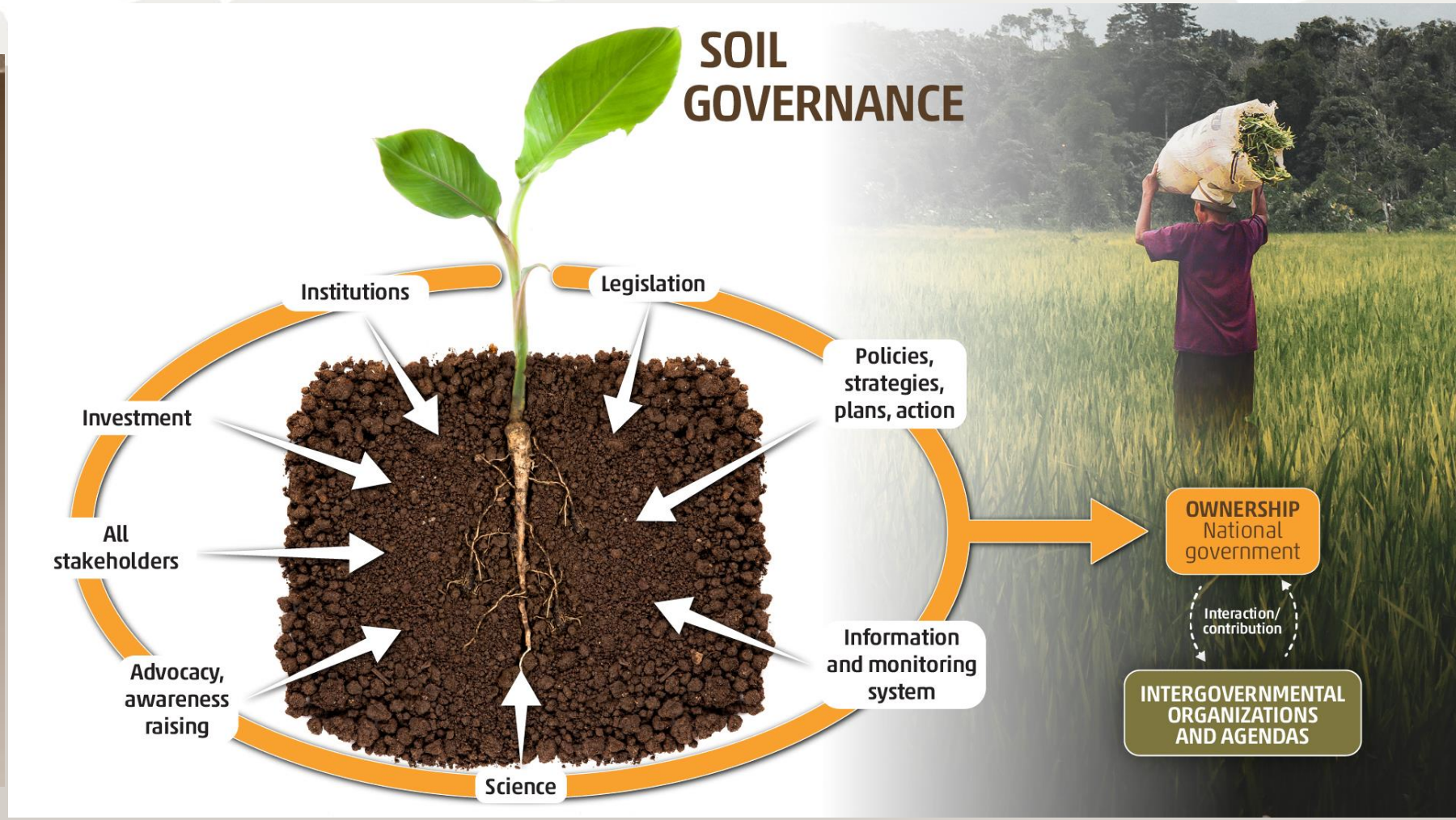
RECSOIL-KENYA
Agricultural activities: mixed farming (maize, horticulture and livestock)
Total area: 140 ha
70 farmers

Other pilot projects under discussion:

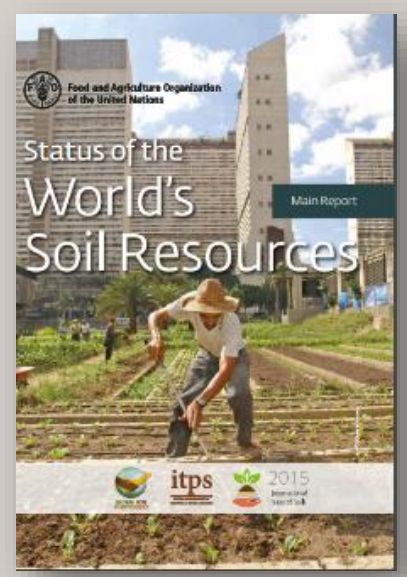
- **Kazakhstan**
- **Uzbekistan**
- **Ghana**
- **Mali**
- **Philippines**

Strengthen soil governance

- SoilLEX
- Rev-WSC
- VGSSM
- Fertilizer Code

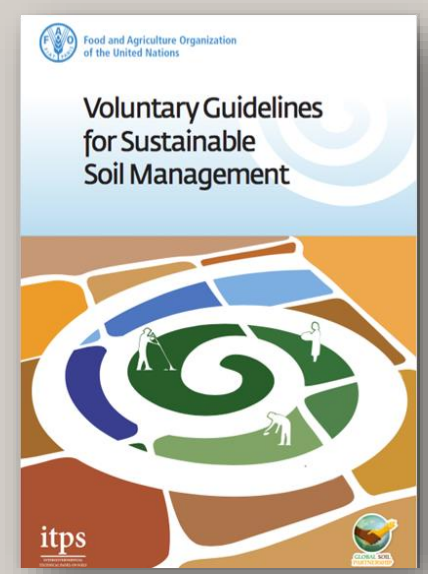


Implementation of normative tools (advancing soil governance)



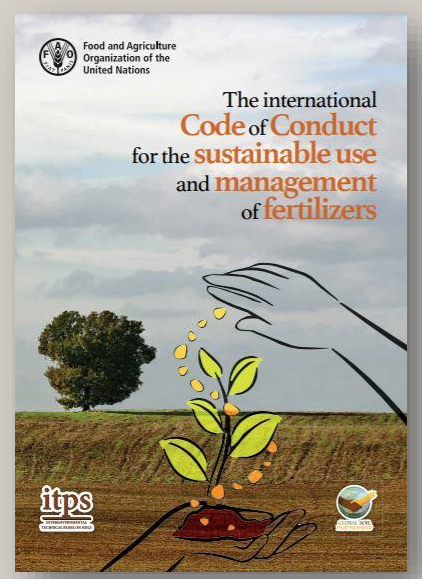
Main soil threats

2nd ed. by 2025



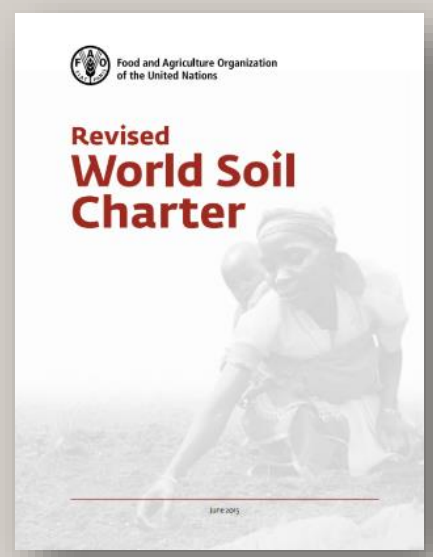
What to do?

Guiding principles and agreed concepts



Avoid nutrient imbalances

1. Underuse
2. Misuse
3. Overuse



Soil governance

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Soil Legislation

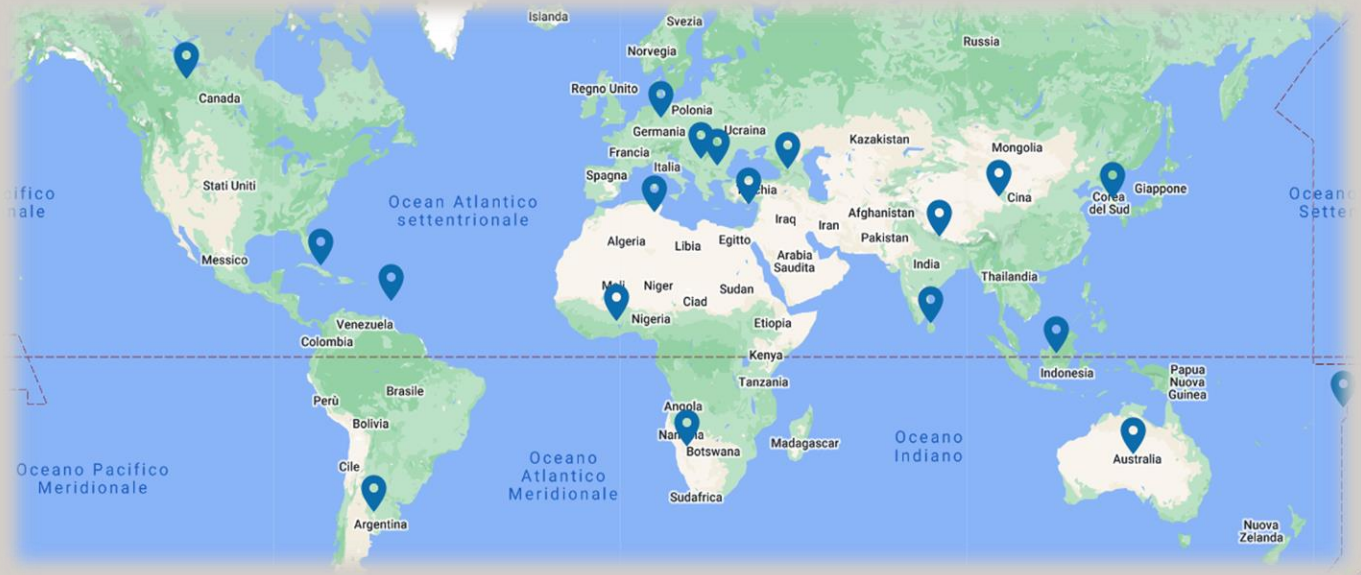
- To date, about **30 countries** have a specific soil law (state, local and regional laws referring to the protection and sustainable management of soils).
  - **Only 17** countries have a **systematic national regulation** (harmonized national legislation tackling exclusively and comprehensively the soil and its protection).
  - not even **10 percent of the 194 members countries of the FAO**

SoiLex

SoiLEX - Soil related legal instruments and soil governance

SoiLEX is a global database that aims to facilitate access to information on existing legal instruments on soil protection and prevention of soil degradation. The platform was created in coordination with **FAOLEX**, which is to date one of the largest databases of legal frameworks and instruments related to natural resource management, food and agriculture.

https://www.fao.org/soils-portal/soilex/en/



GLOBAL SOIL PARTNERSHIP

Promote knowledge and literacy on soils

- Global Soil Doctors Programme
- EduSOILS
- Capacity building initiatives

The Global Soil Doctors Programme

- ✓ A **farmer-to-farmer training** initiative to be implemented by local promoters, with the GSP support, on a volunteer basis
- ✓ Champion farmers – the Soil Doctors - receive training on SSM practices and general soil knowledge and transmit this knowledge to other farmers in the community
- ✓ The Soil Doctors are provided with an educational kit:

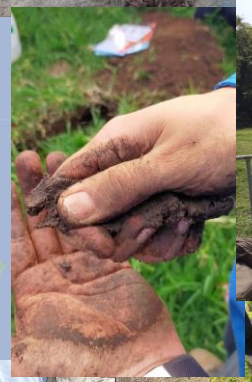
+ 1 000 farmers trained on SSM

Soil Doctors map
Soils FAO-GSP

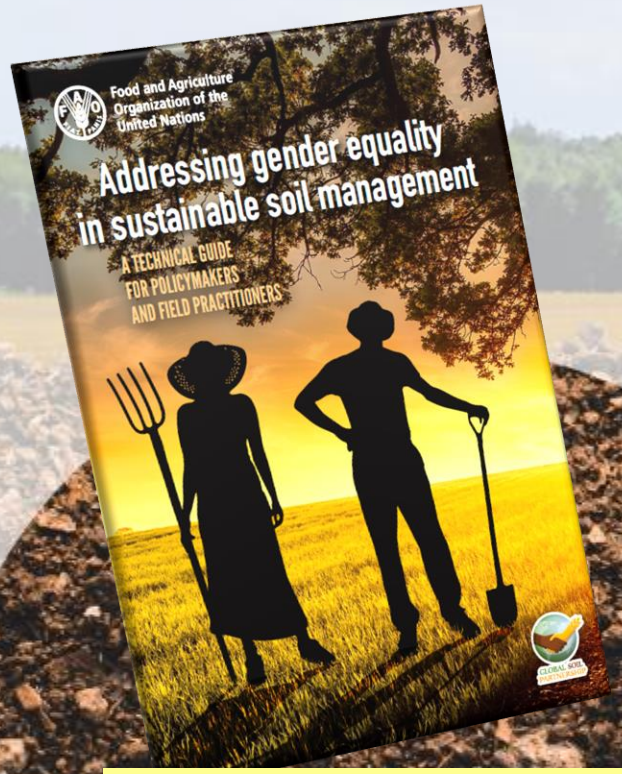
Distribution of SD promoters and implementation activities
6.494 visualizzazioni
Pubblicato 10 giorni fa
CONDIVIDI

SD-map-2.xlsx

- Implementation site
- Collaborator
- National Promoter
- Local Promoter



Soil Doctors Programme in the Lao People's Democratic Republic (Lao PDR) 2023



Launched in 2023 in observase of World Day to Combat Desertification and Drought 2023

Her land. Her rights.

Gender balance and inclusion of youth in soils should be a common action.

Promote awareness raising and advocacy on soil health

- World Soil Day
- Social Media & websites
- GSP Newsletter
- Thematic global soil symposia

+ articles in the main world newspapers

FAO, la mappatura dei nutrienti del suolo in America Centrale e nell'Africa sub-sahariana, per un uso più efficiente dei fertilizzanti

Investing in smallholder farmers

By DANIEL ESSIET — On Jul 27, 2022

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FAO warns 90 per cent of Earth's topsoil at risk by 2050

Soils, where food begins

entro il 2050 potrebbe essere a rischio il 90% del suolo fertile della Terra (VIDEO)

Fao e Global Soil Partnership promuoveranno la mappatura dei nutrienti del suolo in America centrale e nell'Africa subsahariana

[28 Luglio 2022]

Il 95% del cibo globale viene prodotto nel suolo. I suoli hanno la capacità di immagazzinare, trasformare e riciclare i nutrienti dei quali gli esseri umani hanno bisogno per sopravvivere. Dei 18 nutrienti essenziali per le piante, 15 sono forniti dal suolo, se è sano. Secondo la Fao, è probabile che entro il 2050 sarà a rischio ben il 90% del prezioso terriccio terrestre. Ogni 5 secondi nel mondo viene eroso suolo fertile per l'equivalente di un campo da calcio. Il problema è che ci vogliono circa mille anni per creare solo pochi centimetri di terriccio.

Il **Global Symposium on Soils for Nutrition**, organizzato da Fao e Global Soil Partnership e che termina domani, sta discutendo proprio della fertilità dei suoli globali e dei modi per migliorare la disponibilità di nutrienti del suolo per le colture senza danneggiare l'ambiente. Il meeting è stato

FAO to boost soil nutrient mapping

FAO
@FAO · Follow

#DYK that 95% of our food comes from #soils?

❤️Learn more about the relationship between healthy soils and healthy food 👉 bit.ly/3POzXsQ

#Soils4Nutrition

1:00 PM · Jul 27, 2022

81 Reply Share

Explore what's happening on Twitter

nation relevant to soil analysis.

al Khaleej Today

UAE | SAUDI ARABIA | INTERNATIONAL | BIZ | SPORTS | TECH

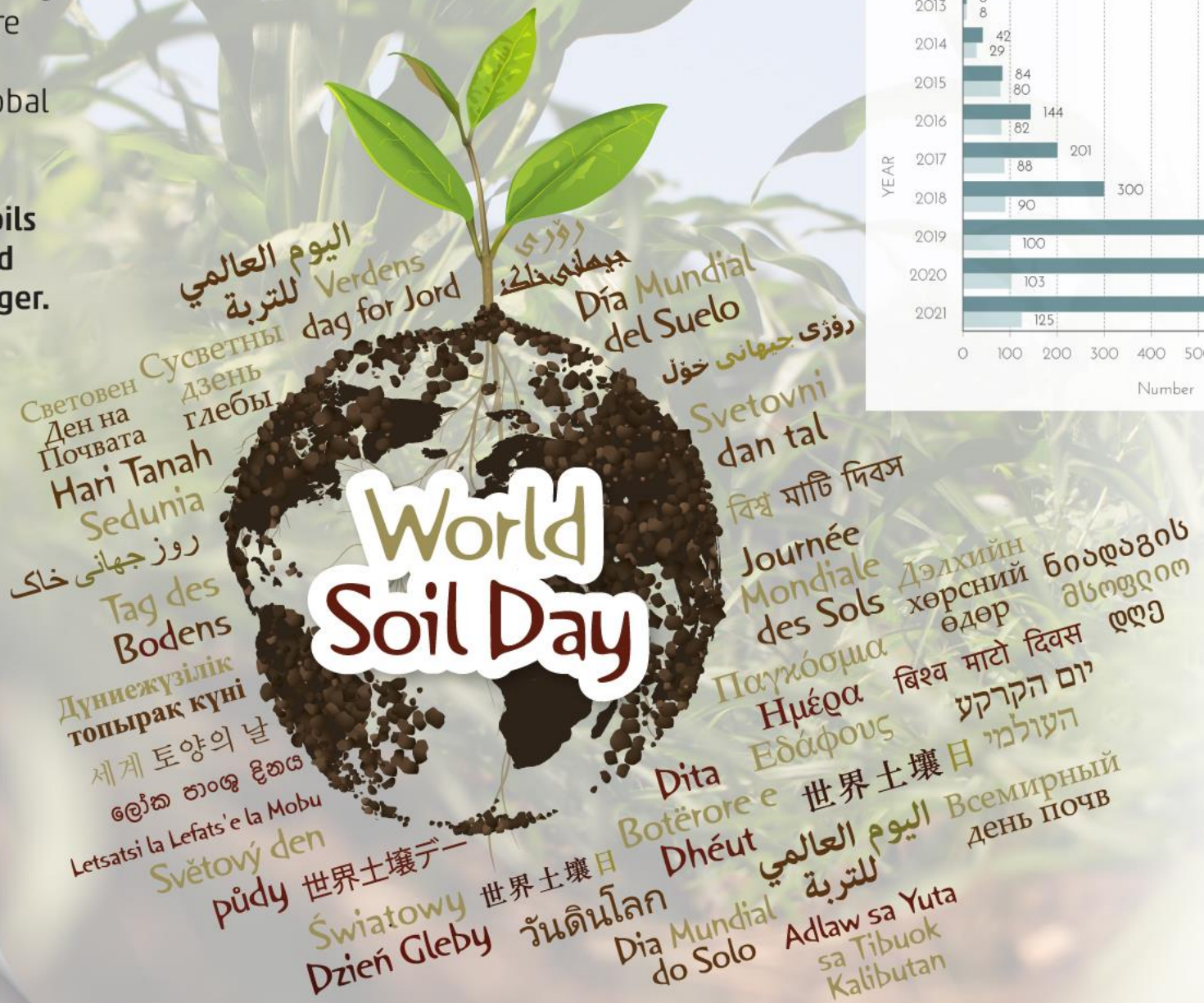
90% of Earth's topsoil at risk by 2050, FAO warns

GLOBAL SOIL PARTNERSHIP

Advocacy and awareness raising on the importance of soils are fundamental tools for consolidating soils in the global agenda.

The International Year of Soils and declaration of UN World Soil Day were a game changer.

https://www.fao.org/world-soil-day/en/



2015
International Year of Soils

Assess, map, and monitor soil health in a harmonized way

- International Network of Soil Information Institutions (INSII)
- GloSIS and SOILSTAT
- Global Soil Laboratory Network (GLOSOLAN)

SOIL DATA STARTS FROM SOIL LABORATORIES

GLOSOLAN
GLOBAL SOIL LABORATORY NETWORK

Soil mapping uses this data, and we are keen on uncertainty when mapping but we should really care about data quality at the laboratory.

We established GLOSOLAN to respond to the need of having harmonized SOPs, quality control procedures (PT), interoperability and connecting soil labs with Soil survey/mapping agencies.

Global Soil Laboratory Network (GLOSOLAN)

Established in 2017 to **build and strengthen the capacity of laboratories in soil analysis** and to respond to the need for harmonizing soil analytical data.

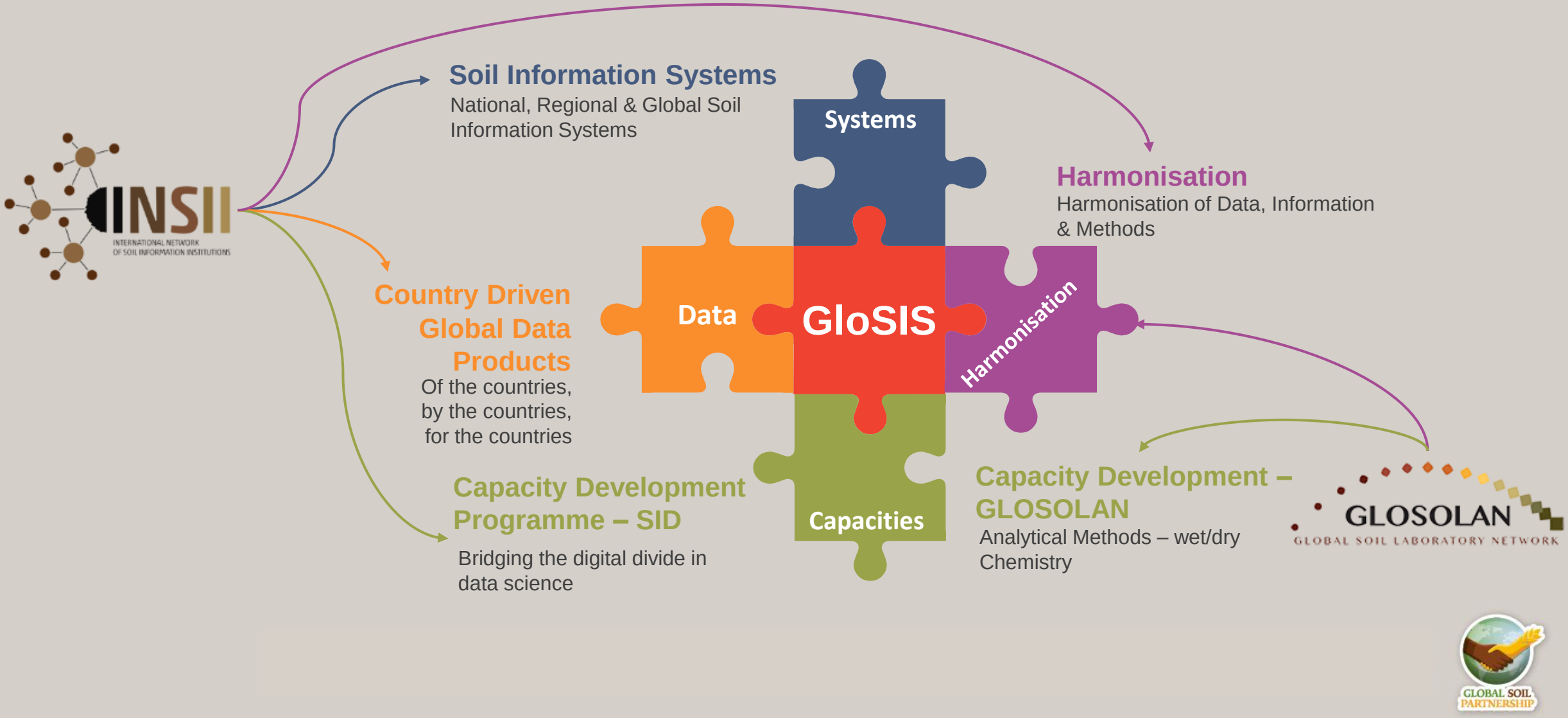
- Almost 1 000 laboratories registered
- 6 Regional Soil Laboratory Networks established
- Establishment of National Soil Laboratory Networks ongoing

Main areas of work:

1. Standard Operating Procedures (5 SOPs in 2019, 10 SOPs in 2020, +13 SOPs to be harmonized in 2021)
2. Quality Assurance/Quality Control (2 regional proficiency tests in 2018, 2 global proficiency test in 2019 and 2021)
3. Capacity building: Training & Equipment (equipment to 18 labs)
4. Promotion of new technologies: soil spectroscopy

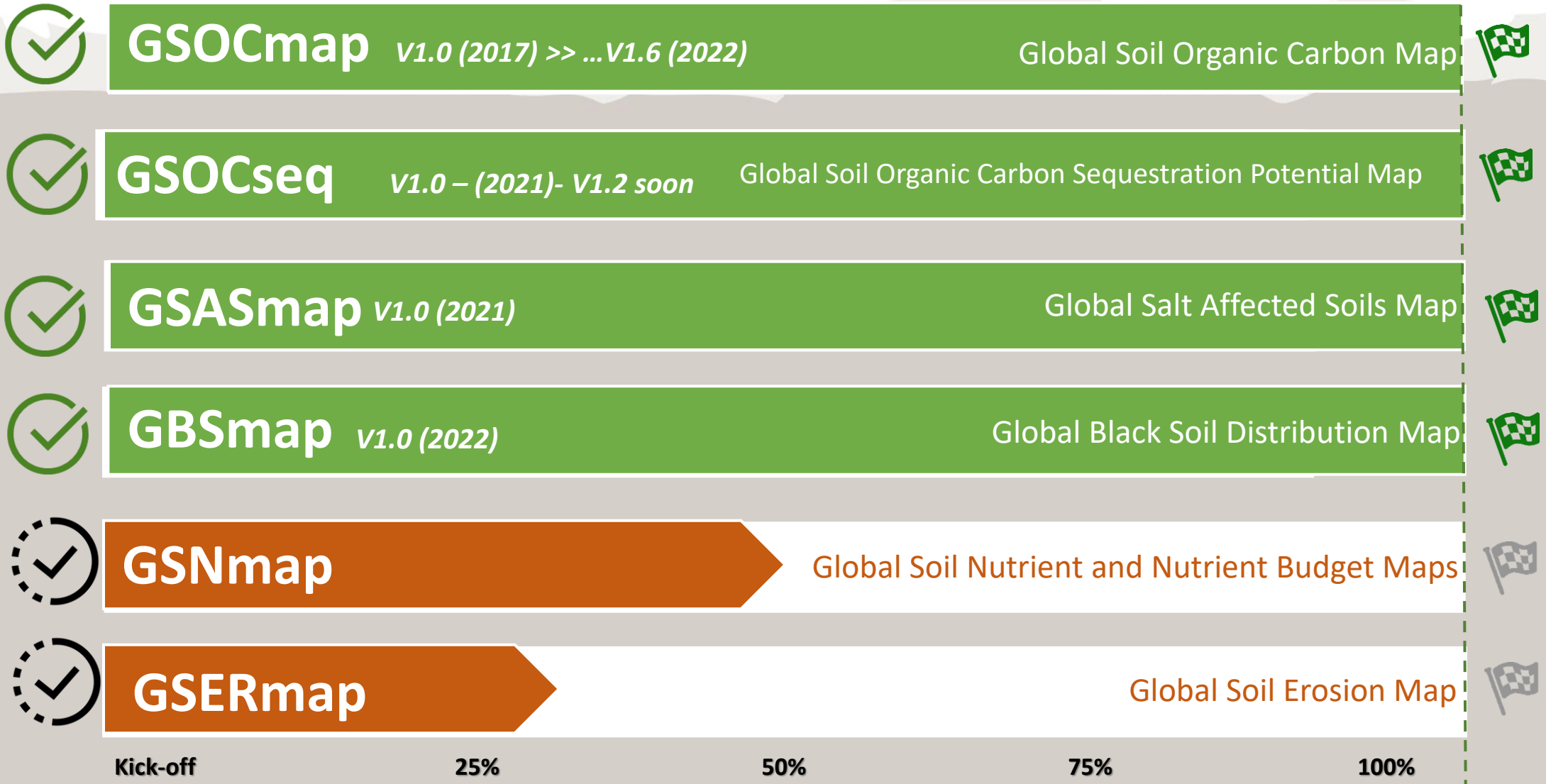
GLOBAL SOIL PARTNERSHIP

Contribution to data-driven policy-making



Global Soil Information System - GloSIS

- **DECENTRALISED -** Infrastructure bringing together soil information collected by (national) institutions in a decentralized way. GloSIS is to be a federation of soil information systems **(System of Systems)**.
- **NATIONAL OWNERSHIP -** Source institutions **retain** their data and **control access**.
- **FAIR data** - Data sharing to be governed by own **data policies**. Make soil information **findable, accessible, interoperable, reusable within country** to inform local and national (policy) decisions
- **LIGHTWEIGHT & AFFORDABLE** - Implementation is **lightweight**, cheap to deploy, “simple”.
- **OPEN SOURCE -** Based on **open-source** software. No License fees, no recurring payments
- **COUNTRY DRIVEN** - Should **empower** countries (and other data providers) to develop their national soil information system as a center for national soil information.


GSOCmap V1.0 (2017) >> …V1.6 (2022)
Global Soil Organic Carbon Map
GSOCseq V1.0 – (2021)- V1.2 soon
Global Soil Organic Carbon Sequestration Potential Map
GSASmap V1.0 (2021)
Global Salt Affected Soils Map
GBSmap V1.0 (2022)
Global Black Soil Distribution Map
GSNmap
Global Soil Nutrient and Nutrient Budget Maps
GSERmap
Global Soil Erosion Map
Kick-off
25%
50%
75%
100%

https://data.apps.fao.org/glosis/

GLOBAL SOIL PARTNERSHIP

+ 5 000 experts trained on digital soil mapping and soil lab procedures

Lab equipment delivered to 18 countries

GSP Supports Countries to develop their SIS

Completed

- Sudan (SuSIS)
- Macedonia (MaSIS)
- Lesotho (LeSIS)
- Afghanistan (SISAf)
- Cambodia (CamSIS)
- Latin America (SISLAC)

In the pipeline

- Liberia
- Bangladesh
- Bhutan
- LAO PDR
- Kyrgyzstan
- Mongolia
- Myanmar
- Nepal
- Philippines
- Sri Lanka
- Vietnam
- Thailand
- Indonesia
- Serbia
- Asian Soil Information System (ASIS)

Foster technical cooperation (including gender and youth)

- International Network of Black Soils (INBS)
- International Network on Salt-affected Soils (INSAS)
- International Network on Fertilizer Analysis (INFA)
- International Network on Soil Biodiversity (NETSOB)
- International Network on Soil Pollution (INSOP)
- Other networks as needed

INBS
International Network of Black Soils

INFA
International Network on Fertilizer Analysis

INSAS
International Network of Salt-Affected Soils

NETSOB
International Network on Soil Biodiversity

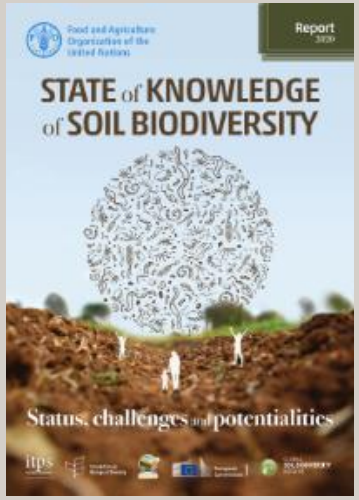
INSOP
International Network On Soil Pollution

https://www.fao.org/global-soil-partnership/technical-networks/en/

GLOBAL SOIL PARTNERSHIP

Technical Networks

- Promote the exchange of experiences, technologies and knowledge
- Develop knowledge products, technical guides, methodologies, etc.
- Address knowledge gaps and provide solutions targeted to global, regional and national problems.



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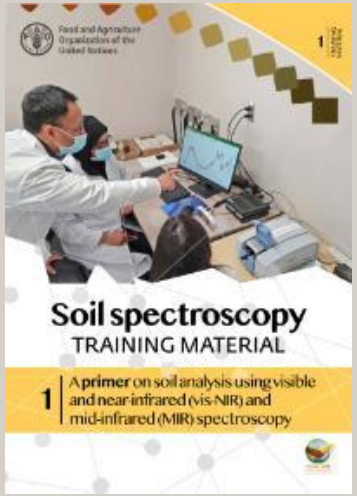

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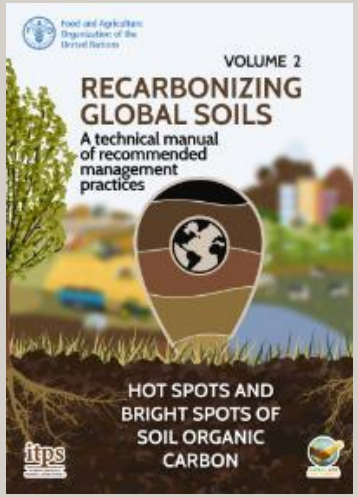

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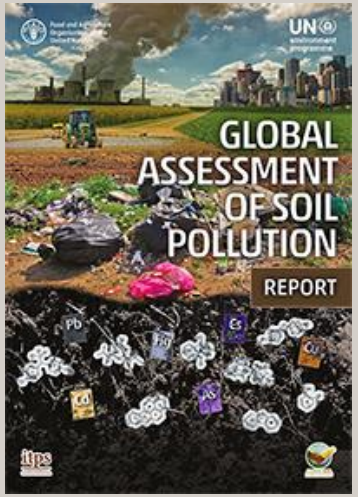

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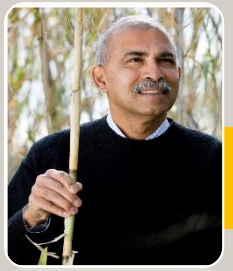
GLOBAL SOIL PARTNERSHIP

International Network on Soil Pollution
INSOP

- Launched in 2022, the INSOP focuses on minimizing soil pollution and achieving the global goal of Zero Pollution
- The mission is to support and **facilitate joint efforts** to reduce the risks of soil pollution and to **share experience and knowledge** to effectively remediate already polluted areas around the world.

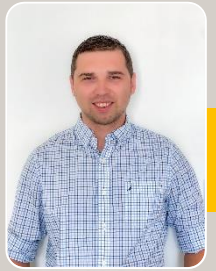
INTERNATIONAL NETWORK ON SOIL POLLUTION
CHANNELLING COLLECTIVE ACTION TOWARDS ZERO POLLUTION

INSOP governance



Ravi Naidu

INSOP Chair



Sergejus Ustinov

INSOP coordinator

Deyi Hou

INSOP Vice-Chair

Assessment WG

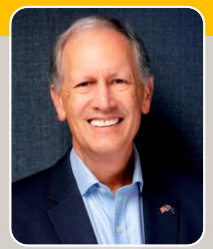
Helen Karasali

Monitoring WG

Claudia E Lima de Silva

Remediation WG

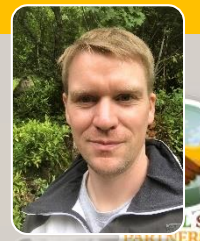
Scott D. Warner



Fang Wang

Food Safety WG

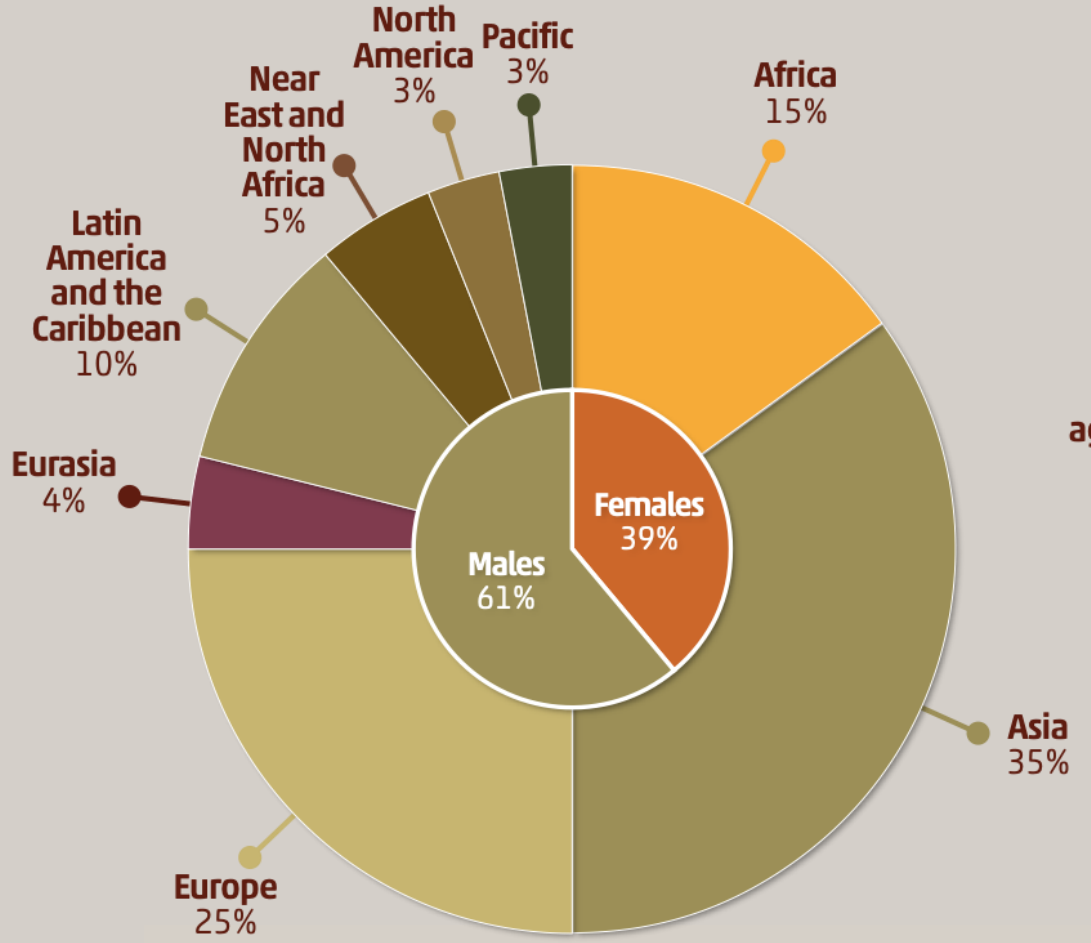
David O'Connor

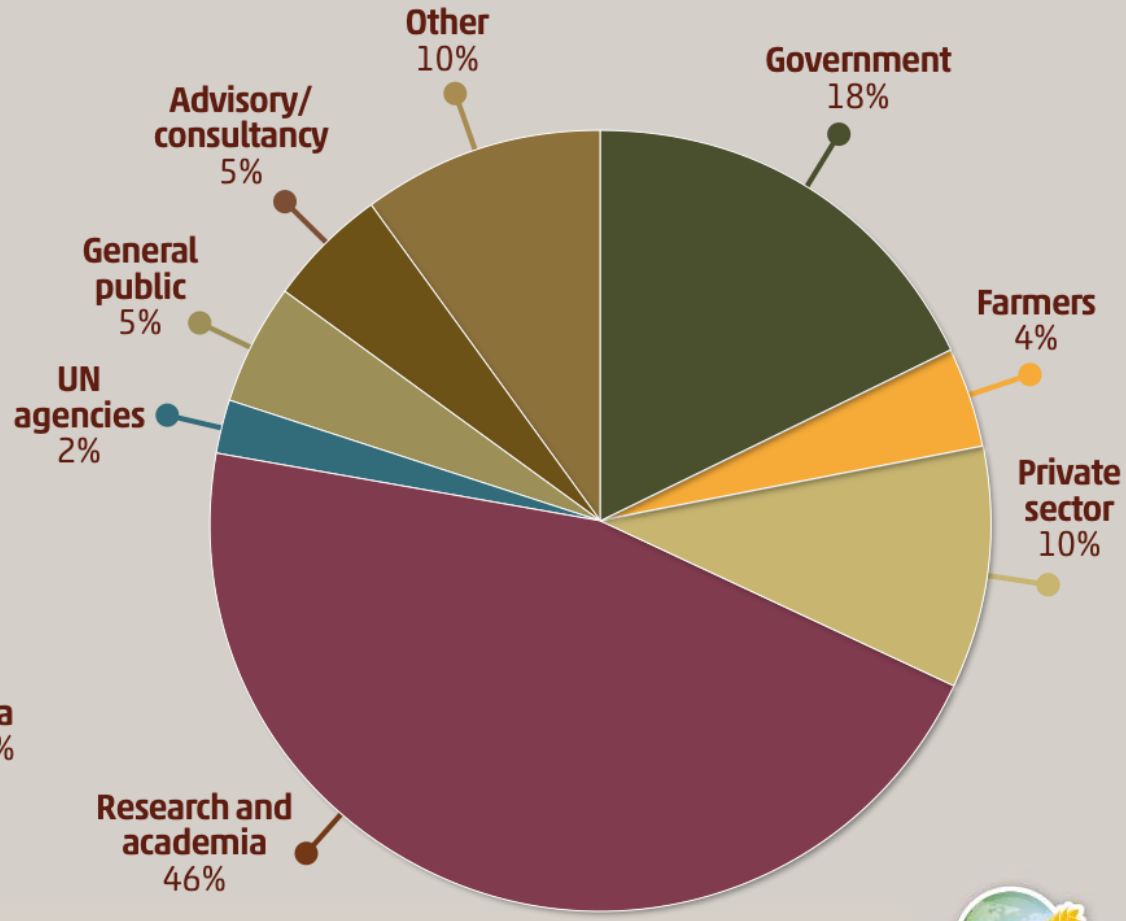


INSOP2024 activities

Working Group	Activity	Current stage
Assessment	Development of the soil pollution threshold values database	Data collection
	SOP for measuring residue of pesticides in the soil	Data collection
Monitoring	Updating SoiLEX with soil pollution assessment, monitoring and remediation legal tools	Data collection
Remediation	Remediation checklist	Proof-reading
Food Safety	Soil Pollution educational material for Soil Doctors Programme	Poster development
	FAO Technical Manual on soil pollution assessment, mapping, monitoring and risk communication	Development

INSOP: 1200 from 130 countries



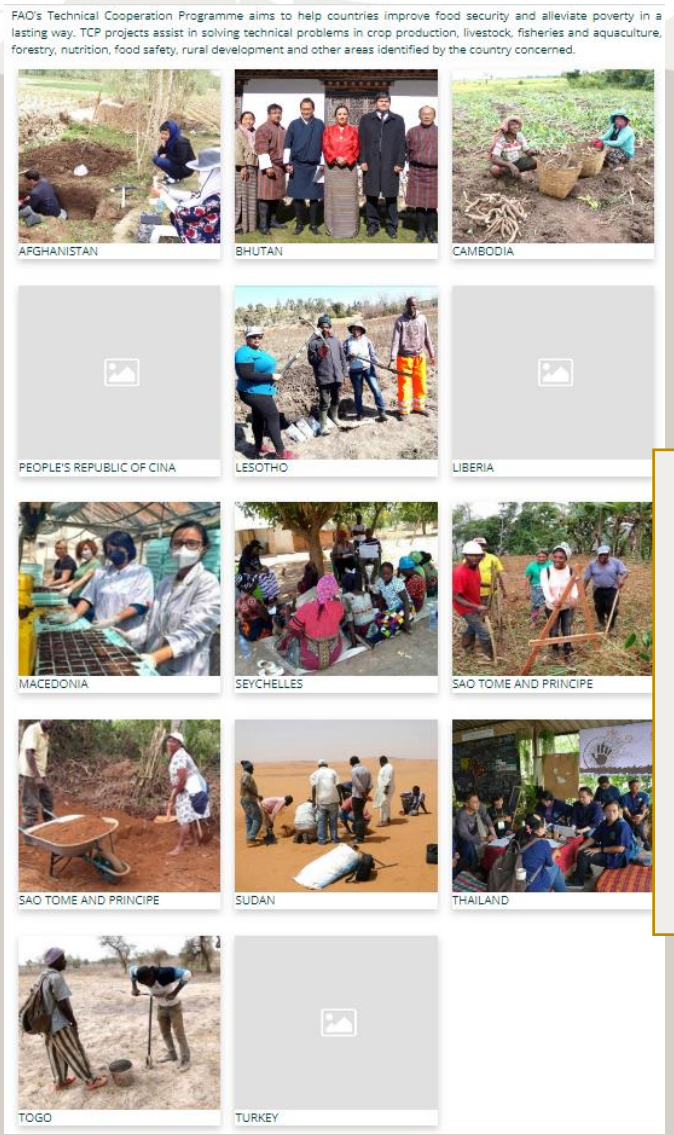


Regional Soil Partnerships: Actions

- Cooperation with the FAO regional offices
- Organization of events on prioritized topics of regional interest
- Technical support (SDG reporting) and procurement facilitation
- Development and publication of targeted documents
- Technical cooperation projects
- Regional trainings in regional language

GLOBAL SOIL PARTNERSHIP

GSP actions on the ground



In addition, the GSP collaborates with other projects, i.e., LDN GEF-funded projects, World Bank-funded projects on agrosystems, GCF-funded projects on climate change adaptation, and integrates FAO programmes/tools, i.e., FAO's Forest and Farm Facility, EX-ACT, and GLEAM

GLOBAL SOIL PARTNERSHIP

Current GSP projects

- Soil4nutrition Project (*funded by Germany*)– **Bangladesh, Burkina Faso and Malawi**
- Soil fertility management Project (*funded by China*) – **Rwanda and Uganda**
- Soil Atlas of Asia and National Soil Information Systems (*funded by AFACI*) - **Bangladesh, Bhutan, Cambodia, Lao PDR, Indonesia, Kyrgyzstan, Mongolia, Myanmar, Nepal, Philippines, Sri Lanka, Thailand, Vietnam**
- RECSOIL and Soil Doctors (*funded by Russian Federation*) – **Costa Rica, Ghana, Kazakhstan, Mexico, Uzbekistan**
- Strengthening soil laboratories and farmers capacities through the Soil Doctor Project and addressing soil pollution (*funded by Phosagro*) – **Trinidad and Tobago and Ecuador**
- Enhancing soil health and the provision of ecosystem services by soils (*MUL, funded by Australia, Netherlands, Switzerland*) – **Ecuador, Togo**
- Soil mapping for resilient agri-food systems in Central America and sub-Saharan Africa (SoilFER) (*funded by the United States*) – **Guatemala, Honduras, Zambia**

GLOBAL SOIL PARTNERSHIP


PM

Upcoming GSP projects

- Soil4nutrition Project – Phase II (*funded by Germany*) – **countries not yet decided, targeting smallholders who are currently suffering the consequences of the current Post COVID19, food and fertilizer crisis and climate change impacts**
- Strengthening soil laboratories and farmers capacities through the Soil Doctor Project and addressing soil pollution (*funded by Phosagro*) – **Trinidad and Tobago and Brazil**
- National Soil Information Systems – Phase II (*funded by AFACI*) - **Bangladesh, Bhutan, Cambodia, Lao PDR, Indonesia, Kyrgyzstan, Mongolia, Nepal, Philippines, Sri Lanka, Thailand, Vietnam, Uzbekistan**

Most projects last 2 years, but actions on the ground require a more prolonged investment

Upcoming 12th GSP Plenary Assembly
June 3-5, Hybrid

- The **GSP PA** is the most important gathering of the partnership where crucial decisions concerning the global soil agenda are taken. It is the main platform for FAO Members and GSP partners to meet and exchange knowledge and expertise in the field of sustainable soil management.
- Documents to be discussed at the PA can be found here:

https://www.fao.org/global-soil-partnership/about/plenary-assembly/twelfth-session-2024/en/

Thank you for your attention