



Food and Agriculture  
Organization of the  
United Nations

21-23 November 2023

# Global Soil Partnership and its activity plan



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

Yuxin Tong  
Global Soil Partnership  
Land and Water Division

FAO

**GLOSOLAN**

GLOBAL SOIL LABORATORY NETWORK



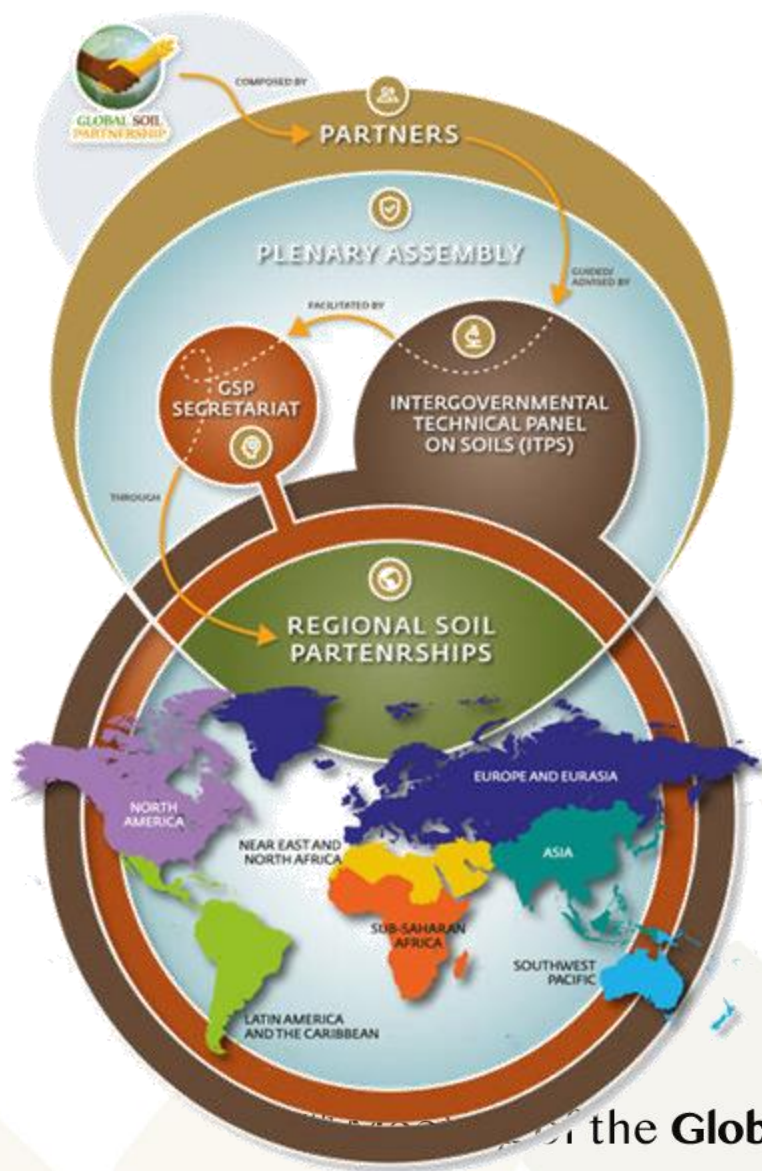
# Global Soil Partnership

- 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**.

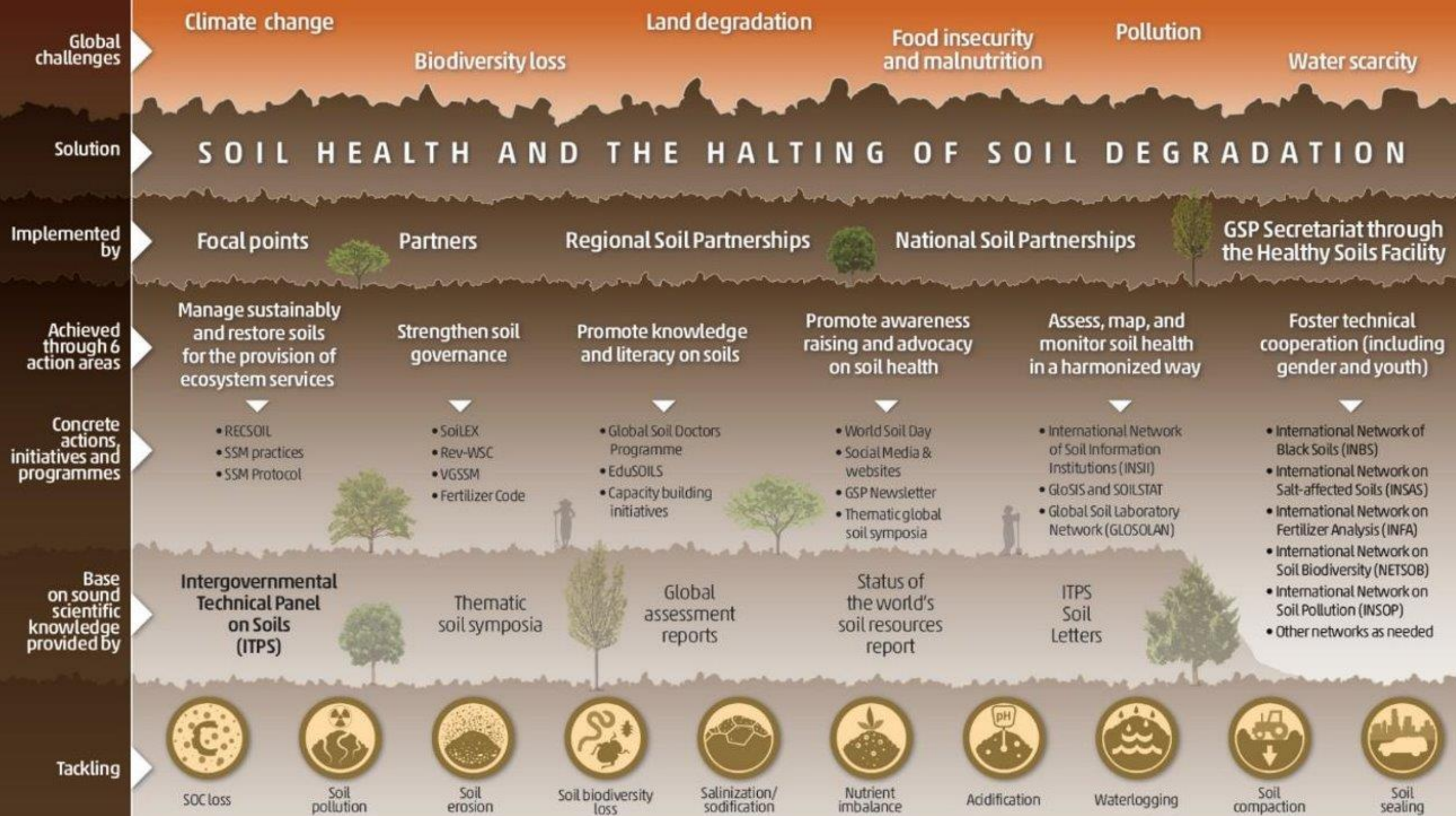
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<http://www.fao.org/global-soil-partnership/en/>





- 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)



1

# 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)



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# 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

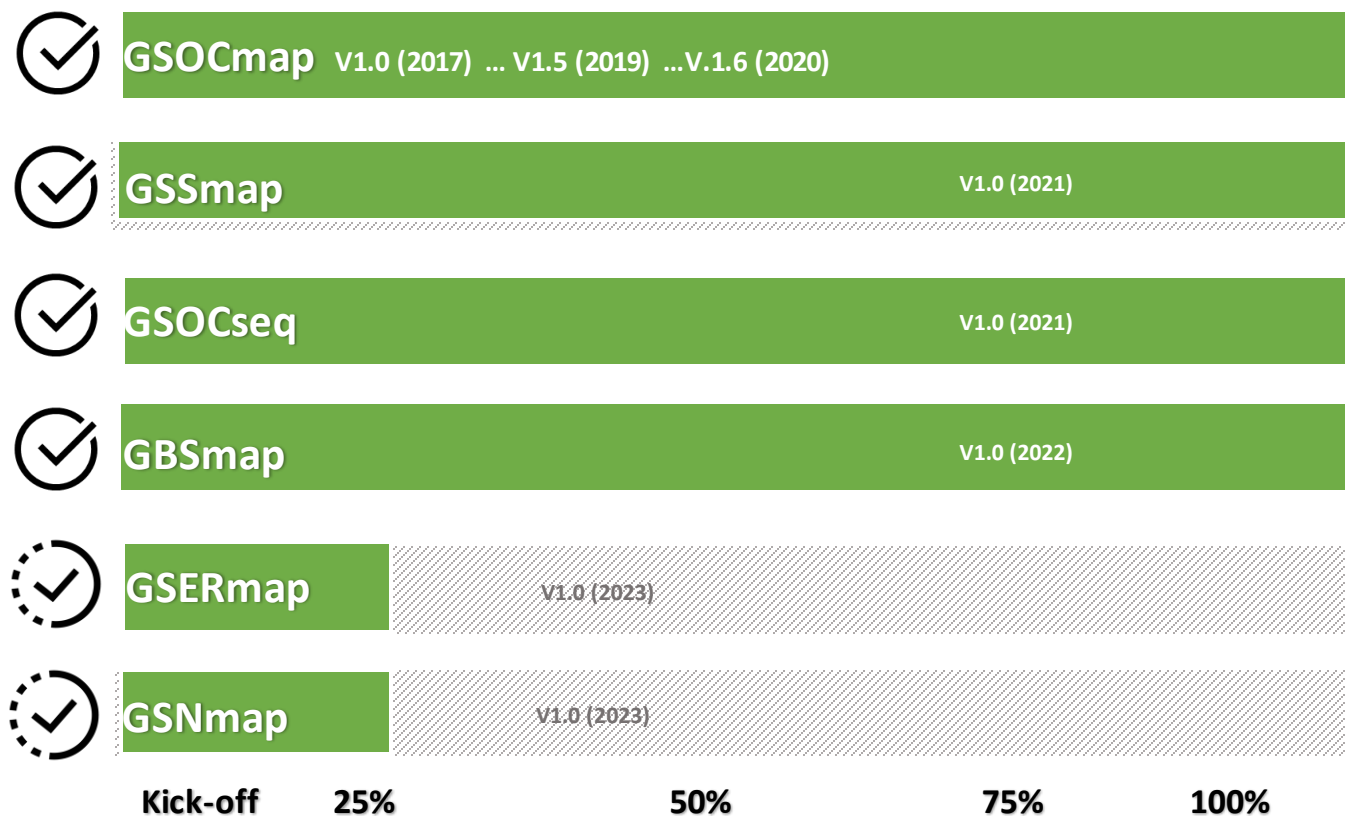
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# Global Soil Information System - GloSIS

- **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.

# GloSIS Country Driven Global Datasets



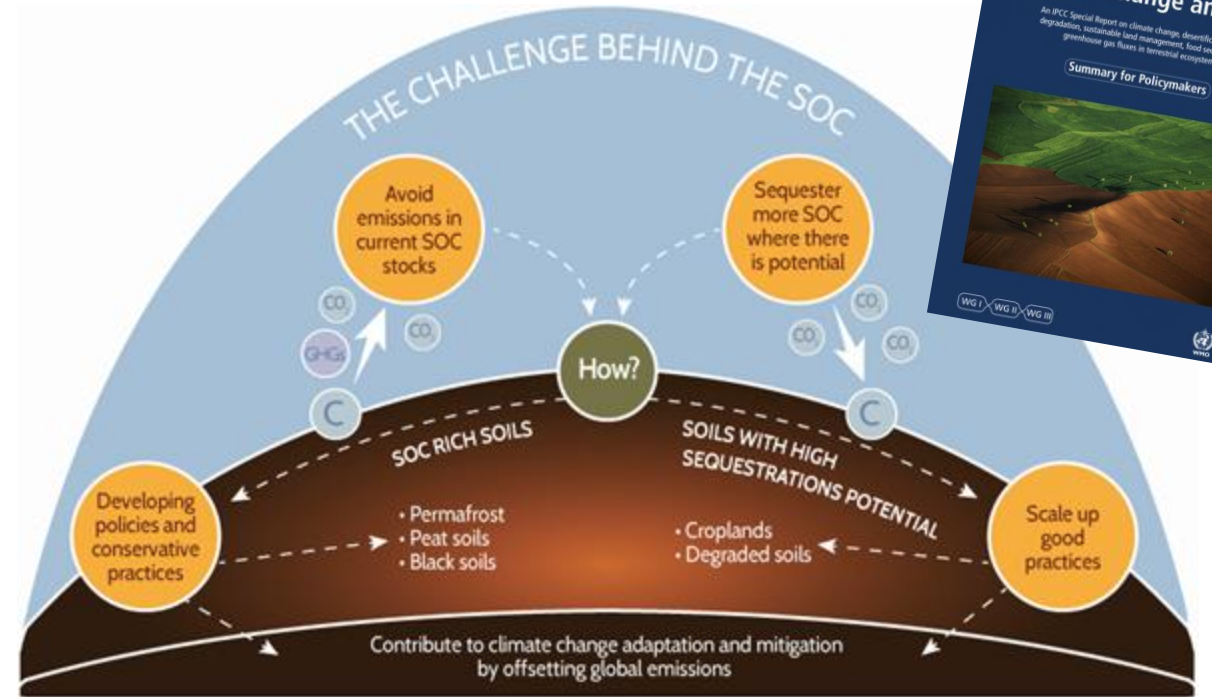
*All GloSIS Data Products are;*  
 country-driven, continuous,  
 participatory, progressive  
 and iterative, multi-stakeholder  
 oriented, and based on and guided by  
 the best available science, rigorous  
 collection and analysis of appropriate  
 data, and consideration of  
 experiences and good practices  
 within, and outside, countries.



# 2 Manage sustainably and restore soils for the provision of ecosystem services

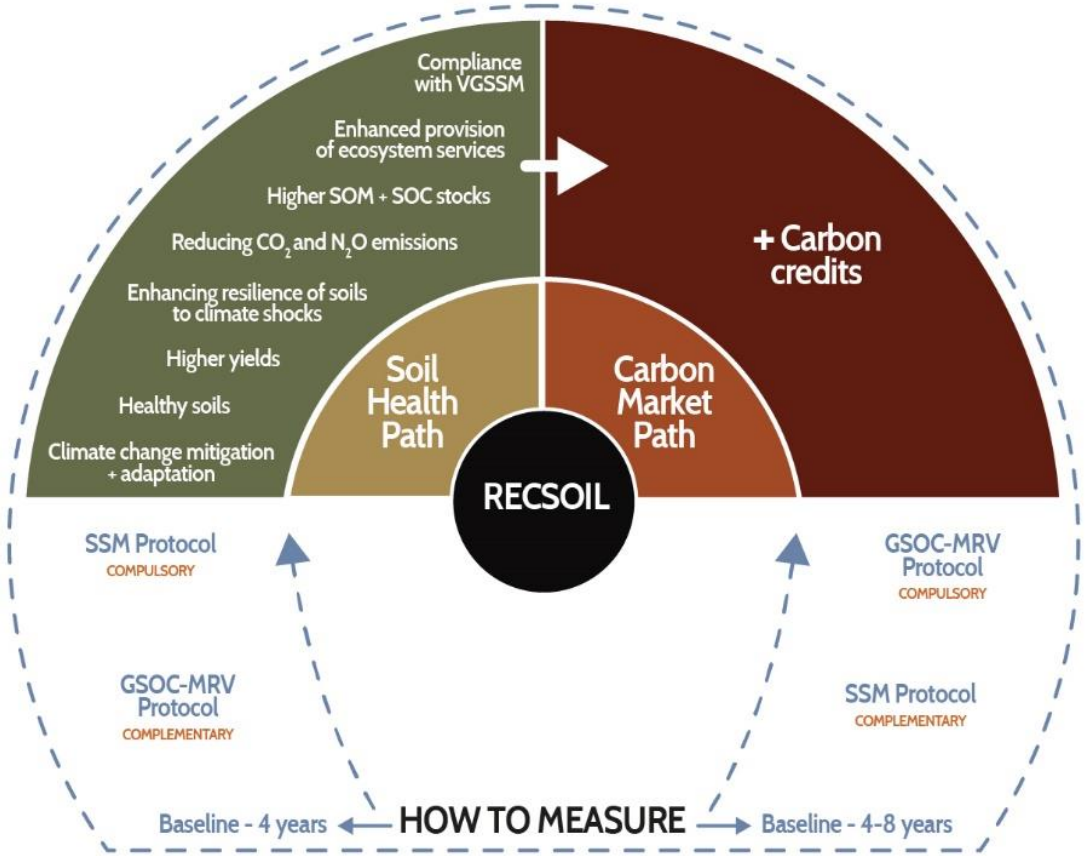
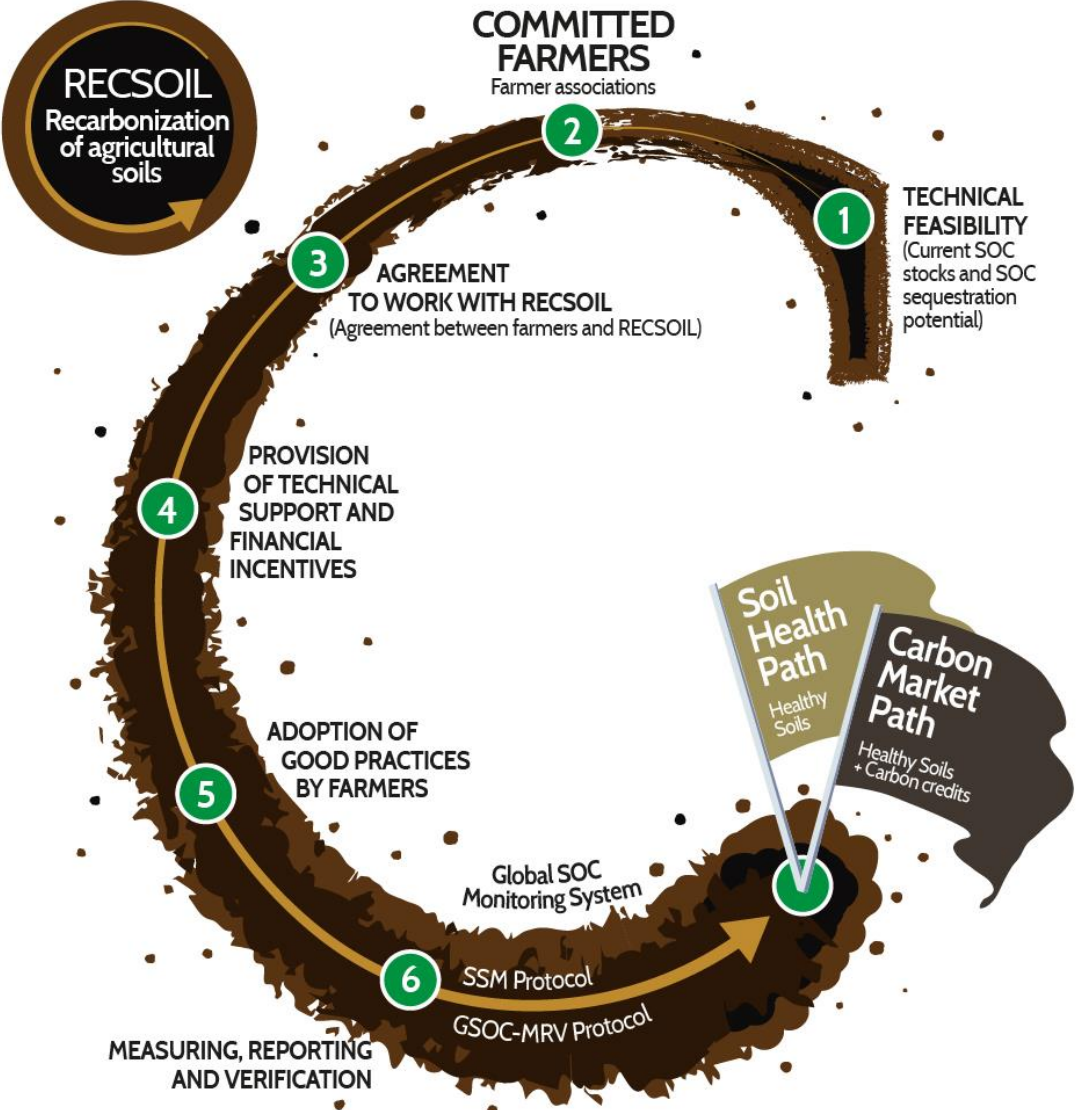
▼

- 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.

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



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# 3

## Promote knowledge and literacy on soils

- Global Soil Doctors Programme
- EduSOILS
- Capacity building initiatives

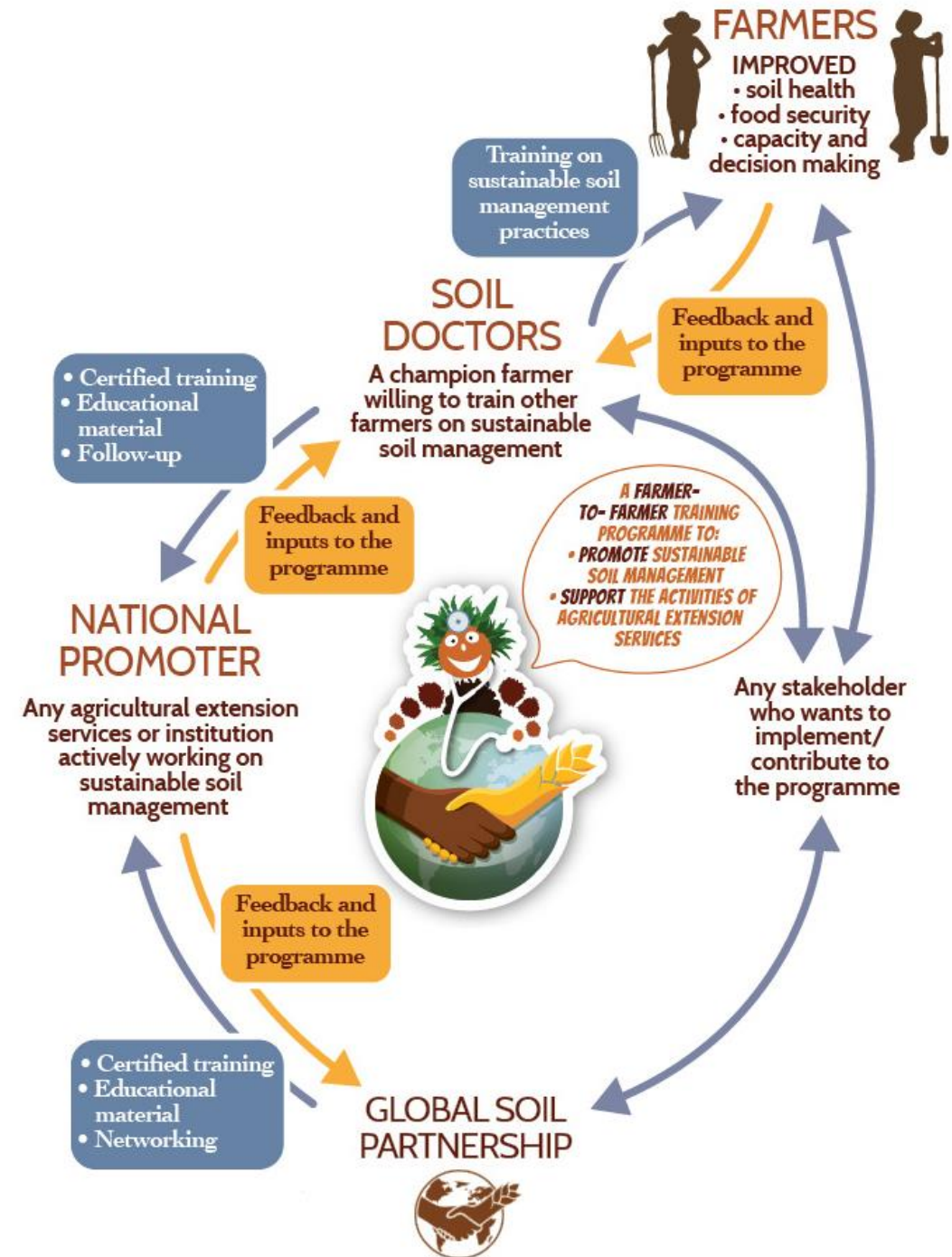


# The Global Soil Doctors

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 a toolbox:





**+ 5 000 experts trained on digital soil mapping and soil lab procedures**  
**+ 1 000 farmers trained on SSM**



4

## Foster technical cooperation (including gender and youth)



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

**GLOSOLAN**  
Global Soil Laboratory  
Network



**INBS**  
International Network  
of Black Soils



**INSAS**

International Network  
of Salt-Affected Soils



**INSII**

International Network  
of Soil Information  
Institutions



**NETSOB**

International Network  
on Soil Biodiversity



**INSOP**

International Network  
On Soil Pollution

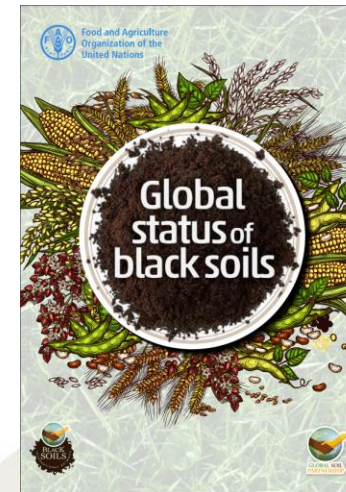
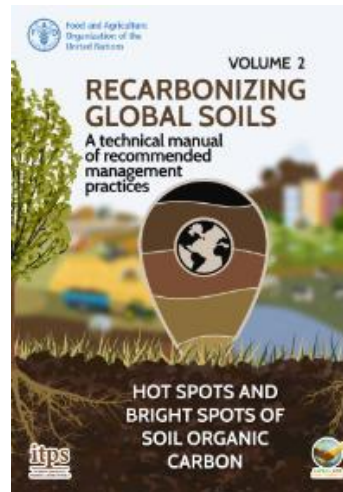
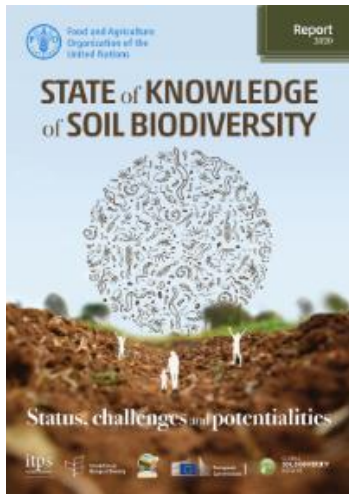


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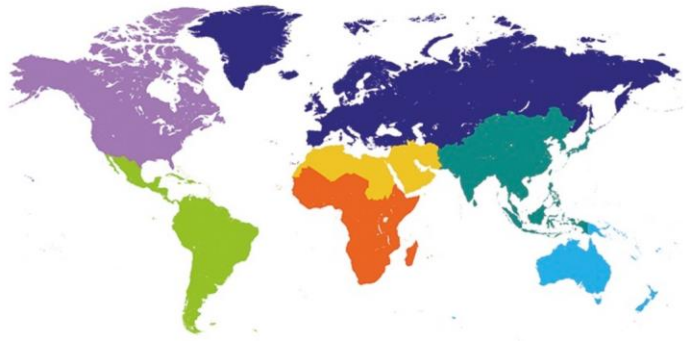
# Technical Networks

- 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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# Regional Soil Partnerships: Actions

- Cooperation with the FAO regional offices
- Information about the regions, participation to the GSP activities
- Identification of the different actors at national and regional level
- Mobilization of resources to implement regionally relevant activities
- Organization of events on prioritized topics of regional interest
- Technical support (SDG reporting) and procurement facilitation

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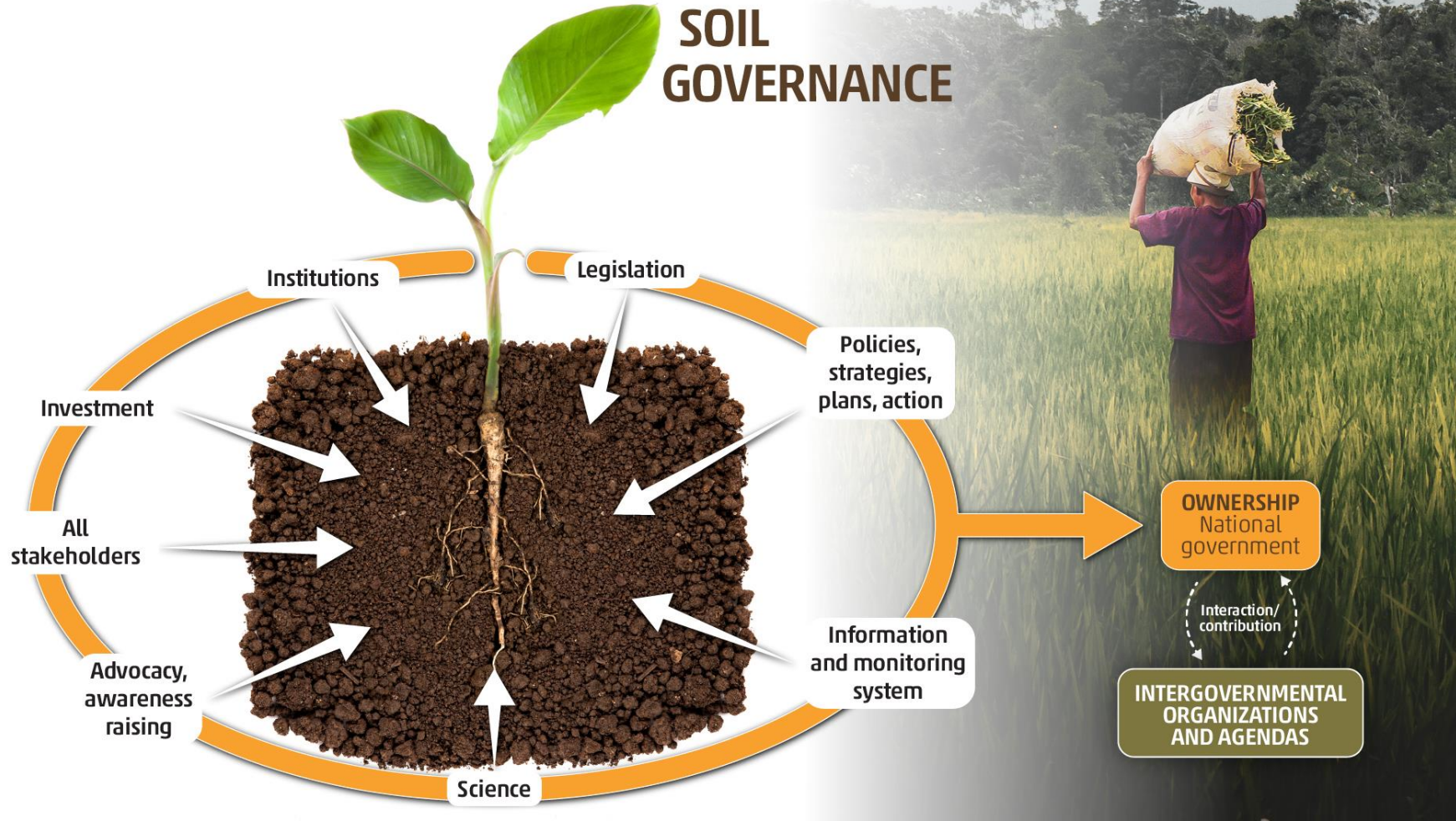


# 5

## Strengthen soil governance

▼

- SoiLEX
- Rev-WSC
- VGSSM
- Fertilizer Code



# Soil Legislation

- To date there are **not even 30 countries** that 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.

7<sup>th</sup> Meeting of the Glob



6

## 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

ALARABIYA news

THE NATION

MIRAGE

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 terreno. 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 terreno.

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

For information on reporting the results: "Soils for nutrition: state of the art" that reports the all the data and the work in progress in the field



nation relevant to soil analysis.

alKhaleej Today

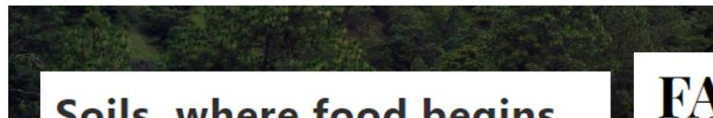
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90% of Earth's topsoil at risk by 2050, FAO warns

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



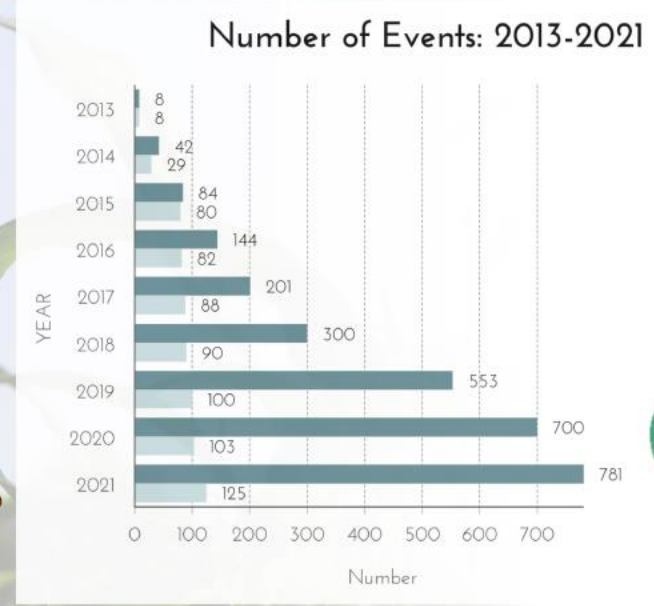
# FAO to boost soil nutrient mapping

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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.



- 781 events in 125 countries
- 1.15 billion users hit and 630 articles
- Materials translated in 27+ languages
- #WorldSoilDay reach: 330+ M on socials
- 3 M page sessions on GSP website
- Videos: 1 M cumulative views
- BBC Podcasts, local TV show
- Pro bono ads in markets and rallies



1. Assess, map, and monitor soil health in a harmonized way
2. Foster technical cooperation
3. Manage sustainably and restore soils for the provision of ecosystem service
4. Promote knowledge and literacy on soils
5. Strengthen soil governance
6. Promote awareness raising and advocacy on soil health.



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PARTNERSHIP**

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# SoilFER



The US, Department of State  
USD 30M



May 2023 – May 2027



Global + 5 Countries



# SoilFER-VACS



Japan, MOFA  
USD 6M



April 2024 – April 2025\*



Global + 2 Countries

Guatemala

Honduras

Tunisia

Ghana

Kenya

Zambia

Mozambique

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# SoilFER



The US, Department of State  
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Global + 5 Countries

## The Project is Amended

- +USD 10M
- Kenya and Ghana
- 4 new activities
- Global Crop Suitability Platform
- Strengthening Institutional Framework
- Crop Models
- Land Use Planning at Farm Level
- First contact with FAOKEN and FAOGHN

Guatemala December 2023

Honduras October 2023

Ghana TBC

Kenya TBC

Zambia August 2023

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# SoilFER-VACS



Japan, MOFA  
USD 6M



April 2024 – April 2025\*



Global + 2 Countries

## Soils and Crops

- Enhancing Integrated Soil-Crop Management for Sustainable Food Systems in Africa
- Almost operational (April)
- Very similar work plan with SoilFER (95%)
- VACS Focused

Tunisia

TBC

Mozambique

TBC

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# The Vision for Adapted Crops and Soils (VACS)



Dr Carry Fowler - SPECIAL ENVOY FOR GLOBAL FOOD SECURITY

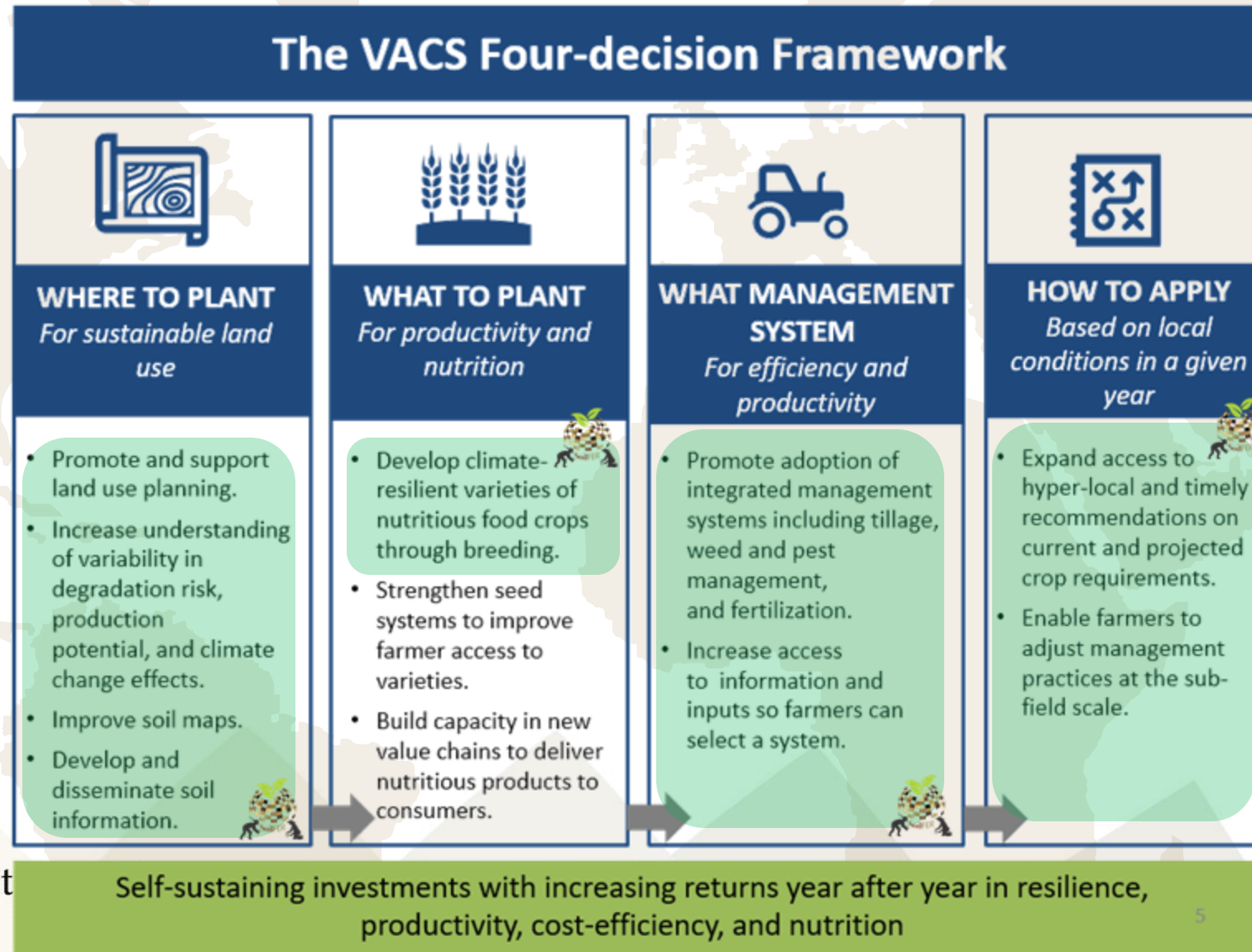
- launched in February 2023 in partnership with **the African Union and the FAO**.
- To advance VACS objectives, The US DoS since directed **\$100M towards crop and soil activities**
- SoilFER funds partially coming from VACS
- Key VACS Partners: FAO, IFAD, CG System

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# The Vision for Adapted Crops and Soils (VACS)



1

## DATA

- Soil Sampling Campaign
- Harmonization and Collection of Legacy Data
- Soil Analysis (Soil labs)
- National Soil Analytical Databases
- National Spectral Libraries
- National Soil Information Systems (NSIS)
- Laboratory Information Management Systems (LIMS)

2

## INFORMATION + KNOWLEDGE

- National Nutrient and Nutrient Budget Maps
- National Soil Property Maps
- Crop Suitability Maps
- Fully Integrated National Soil Information System (NSIS)
- Soil Monitoring System for select
- Decision Support Tools (DST) and System (DSS) – fertilizer, crop, management

3

## ACTION

- Fertilizer Decision Support for farmers and governments
- Decision Support for Crop Suitability including *Opportunity Crops*\*
- Capacity Development and Outreach Programme
- Socioeconomic, financial and cost-benefit analysis for Fertilizers and SSM

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# National Components



\* The Vision for Adapted Crops and Soils (VACS)



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*Thank you for your attention*

