



Food and Agriculture  
Organization of the  
United Nations

# 16<sup>th</sup> Working Session of the Intergovernmental Technical Panel on Soils (ITPS)

## SOIL INFORMATION & DATA (SID)

Y. Yigini *on behalf of*

**ITPS**

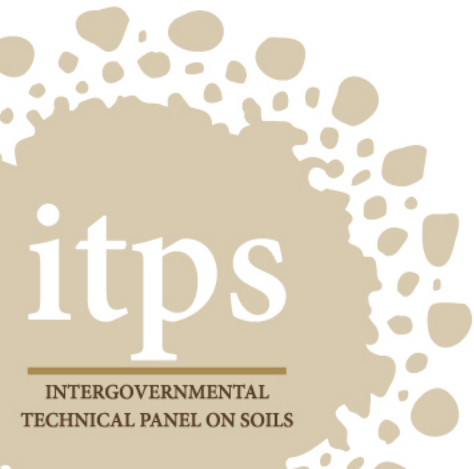
L. Chabala | C. Calzolari

**GSP Secretariat**

M. Angelini | I. Luotto | M. Mainka | C. Omuto | G. Peralta | Y. Peng

# Overview

- **Headlines from SID** (Q4/2021 – Q1/2022)
- **Global Data Products**
  - Global Soil Organic Carbon Map (**GSO Cmap**)
  - Global Soil Organic Carbon Sequestration Potential Map (**GSO Cseq**)
  - Global Salt Affected Soils Map (**GSASmap**)
  - Global Black Soil Distribution Map (**GBSmap**)
  - Global Soil Erosion Map (**GSERmap**)
  - Global Soil Nutrient and Nutrient Budget Maps (**GSNmap**)
- **SoilSTAT**
- **Capacity Development**
  - SID Capacity Development in Numbers
- **GloSIS**
  - Status
  - GloSIS in 2022
- **GlobeSpeC**



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## Headlines

### Global Data Products

*GSOCmap*

*GSOCseq*

*GSASmap*

*GBSmap*

*GSERmap*

*GSNmap*

SoilSTAT

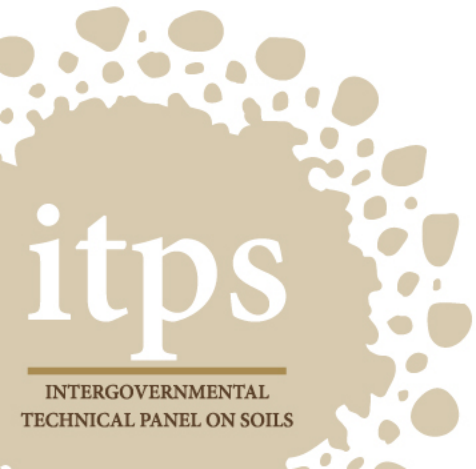
### Capacity Development

GloSIS

GlobeSpeC

## At a Glance:

- Several key documents, reports have been published
- **GSOCmap** was updated to v1.6
- **GSOCseq** was updated to v1.1
- **GBSmap v1.0 is ready!**
- 6 Hours of **Video Course** on Digital Soil Mapping & Modelling
- **GSNmap** and **GSERmap** were begun
- Regional **Soil Map for Asia** was prepared
- **Capacity Development Programme** has reached 1200+ experts
- **GlobeSpeC** (GLOSOLAN – Curtin University – GSP SID)
- 7 Technical **Workshops & Trainings**



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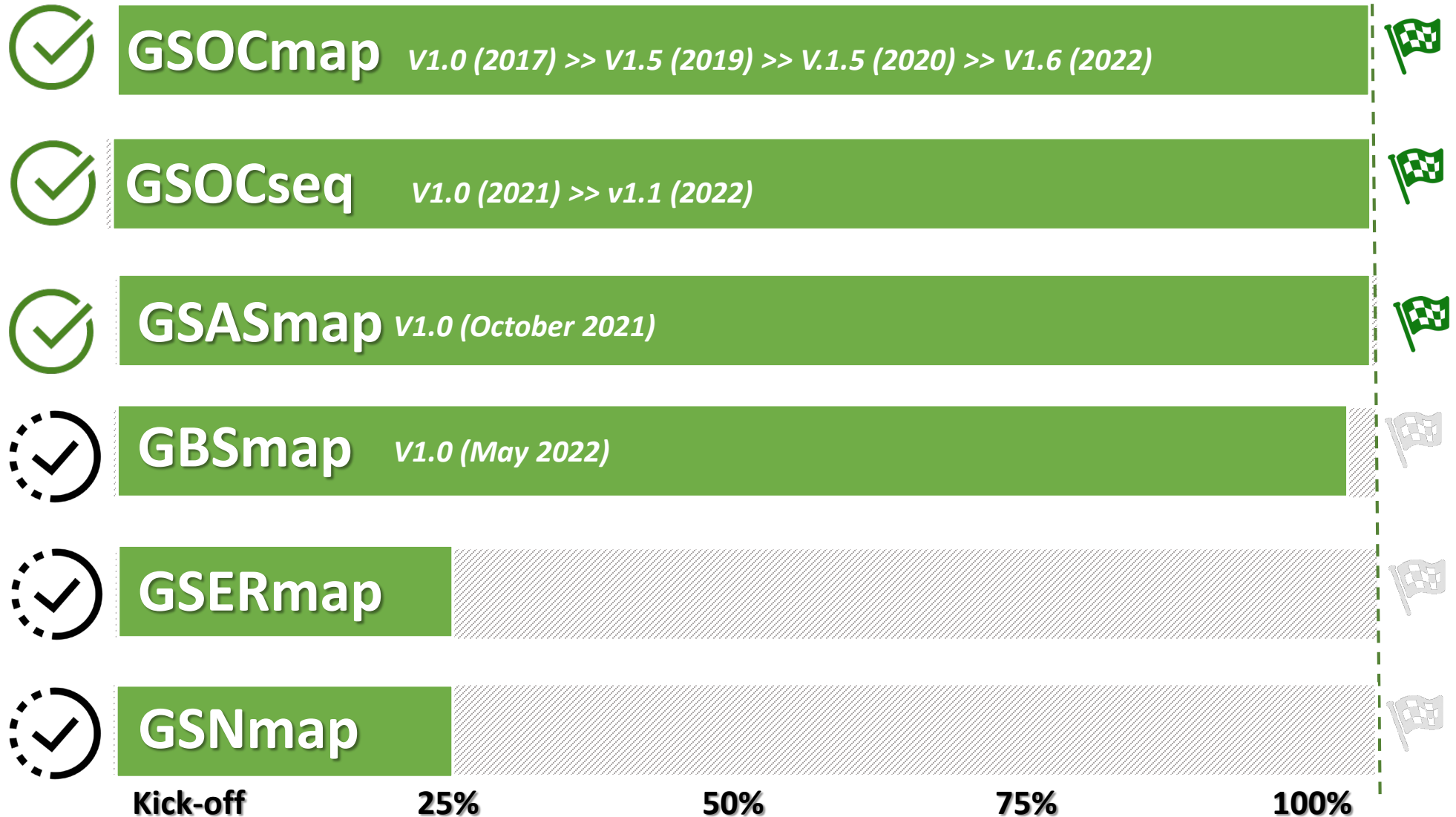
GSNmap

SoilSTAT

Capacity Development

GloSIS

GlobeSpec



Kick-off

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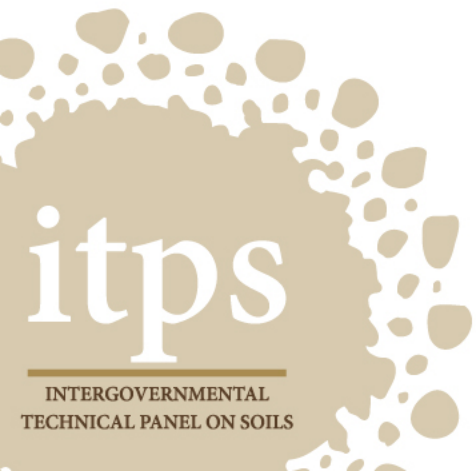
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100%

Concept Note >> Country Guidelines >> Capacity Development >> Production >> Launch >> Dissemination

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GSOCseq

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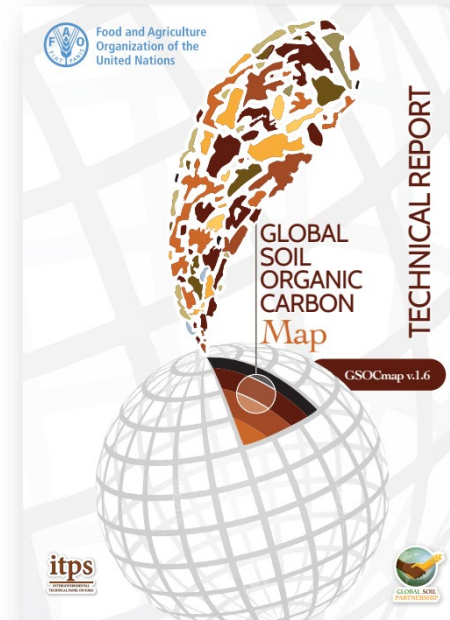
GSNmap

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## GSOcmap is alive!

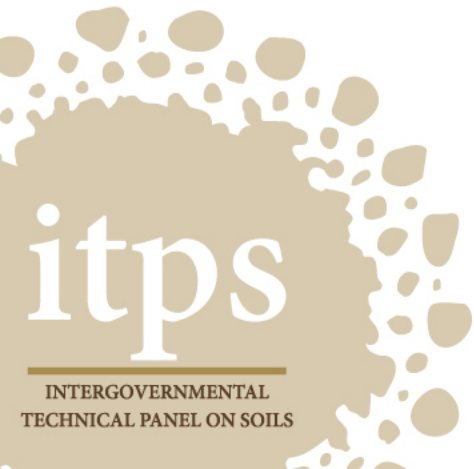
The GSOcmap has been updated to v1.6  
GSOcmap v1.6 Technical Report was published

## GSOcmap 2.0

- ✓ Concept Note is ready
- ✓ Coupled with GSOcseq 2.0
- ✓ 100 x 100m Resolution
- ✓ Topsoil + Subsoil
- ✓ Better Uncertainty Assessment
- ✓ Better Harmonised Global Product
- ✓ ~~Temporal Harmonisation~~



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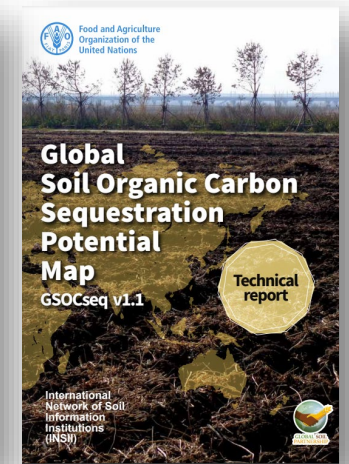
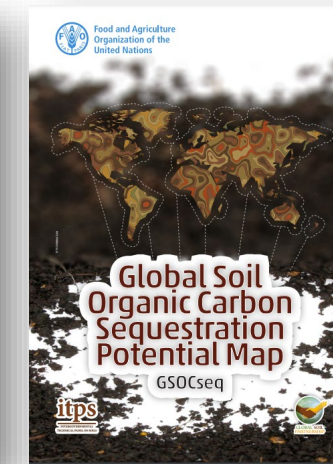
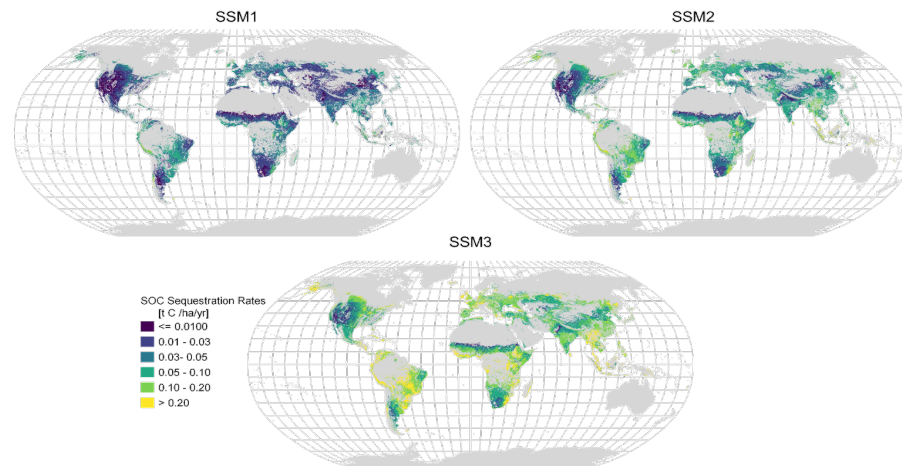
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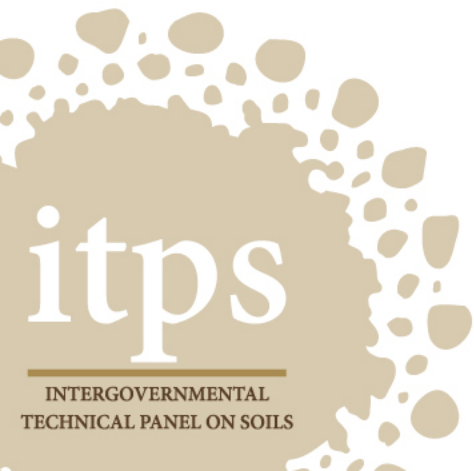
GlobeSpec

# Global Soil Organic Carbon Sequestration Potential Map



- GSOSeq has been updated to v1.1, v1.2 is ongoing
- 2 regional trainings reached 95 national experts from 26 countries.
- +3 Key documents were published
- A dedicated GSOSeq working group (WG) has been established. Its first meeting was held on February 2022;
- The draft of the GSOSeq Manuscript is currently undergoing a first round of review by the GSOSeq WG.
- GSOSeq 2.0 Concept Note in preparation

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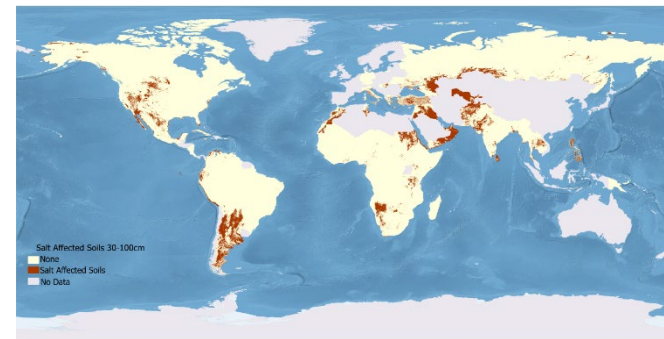
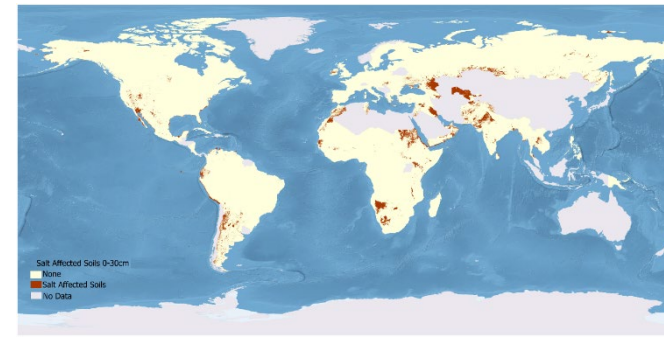
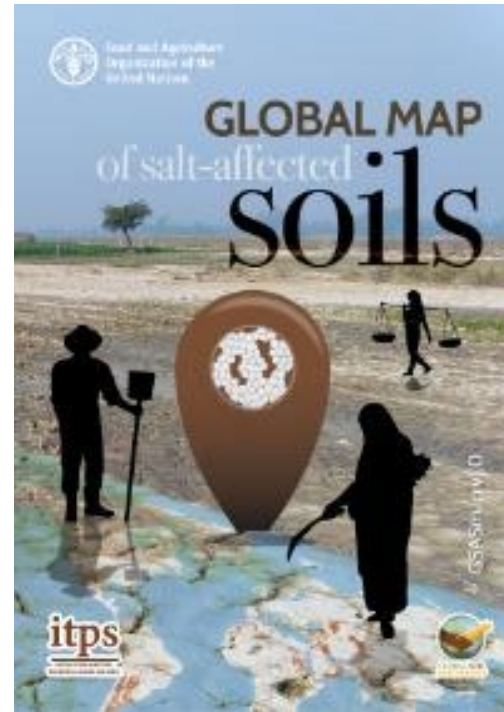
SoilSTAT

Capacity Development

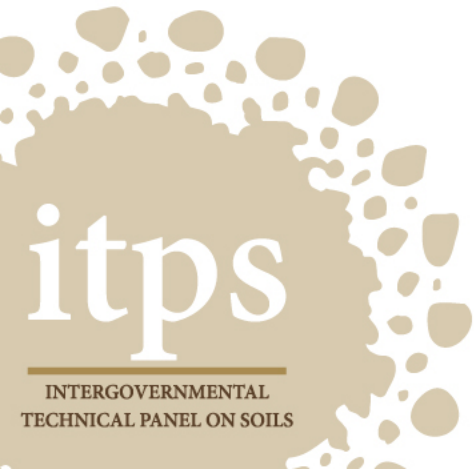
GloSIS

GlobeSpec

## Global Salt Affected Soils Map



- GSASmap v1.0 was launched in October 2021
- Is being updated to v1.1 – new submissions (Central Asia, NENA)
- GSASmap Technical Report will be ready soon



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# GBSmap v1.0 is ready

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Global Data

GSOCmap

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GSERmap

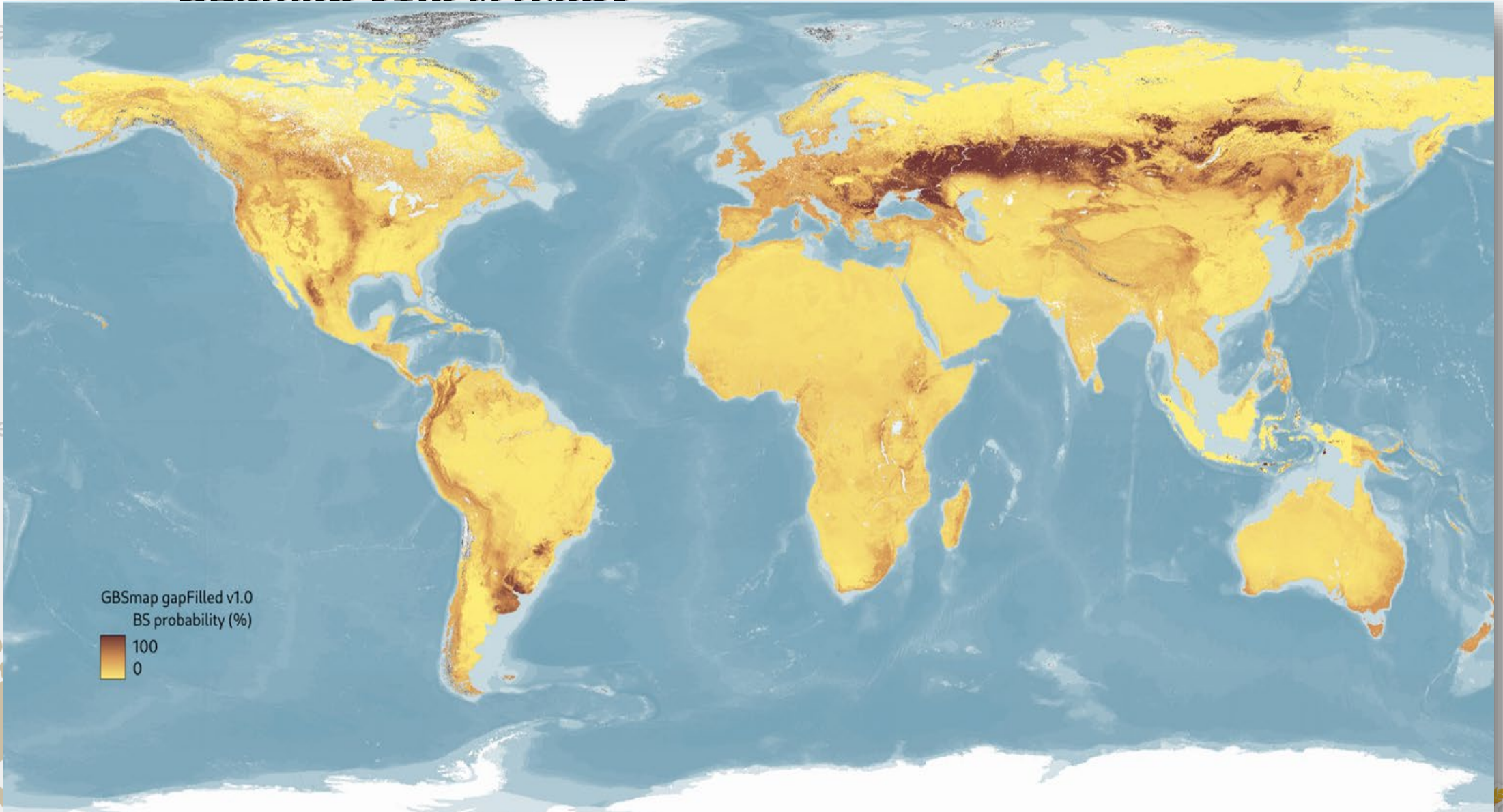
GSNmap

SoilSTAT

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GloSIS

GlobeSpeC



GBSmap gapFilled v1.0  
BS probability (%)  
100  
0

itps

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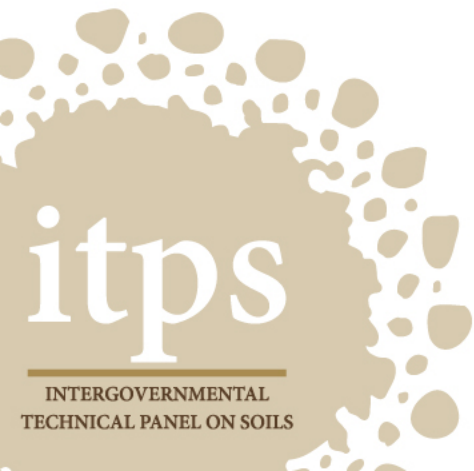
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# GBSmap in Numbers

BS area (km <sup>2</sup> )	Country area (km <sup>2</sup> )	BS Croplands (km <sup>2</sup> )	Total Croplands (km <sup>2</sup> )	BS Croplands (%)	Country
3,284,671	17,001,949	935,690	1,010,393	92.61%	Russian Federation
348,172	600,311	278,154	367,688	75.65%	Ukraine
1,076,027	2,838,906	240,286	269,762	89.07%	Kazakhstan
549,842	9,345,728	215,186	1,483,242	14.51%	China
420,057	2,780,511	200,095	460,436	43.46%	Argentina
295,402	9,975,264	145,224	383,409	37.88%	Canada
329,250	9,500,989	135,434	1,277,277	10.60%	United States of America
117,391	238,383	73,783	91,113	80.98%	Romania
78,690	311,928	60,062	122,732	48.94%	Poland
69,427	111,078	38,984	42,258	92.25%	Bulgaria
50,511	549,174	36,792	162,683	22.62%	France
44,901	93,009	33,191	49,338	67.27%	Hungary
37,026	357,770	30,198	114,139	26.46%	Germany
59,268	88,456	25,580	28,320	90.32%	Serbia
29,765	33,854	20,881	21,309	97.99%	Moldova
89,869	8,483,820	20,086	694,925	2.89%	Brazil
23,331	78,874	19,218	29,017	66.23%	Czechia
74,771	178,144	16,217	21,828	74.29%	Uruguay
25,633	207,620	14,653	61,845	23.69%	Belarus
9,420	244,433	7,840	44,992	17.43%	United Kingdom

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GLOBAL SOIL PARTNERSHIP

## Headlines

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SoilSTAT

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## Global Soil Erosion Map

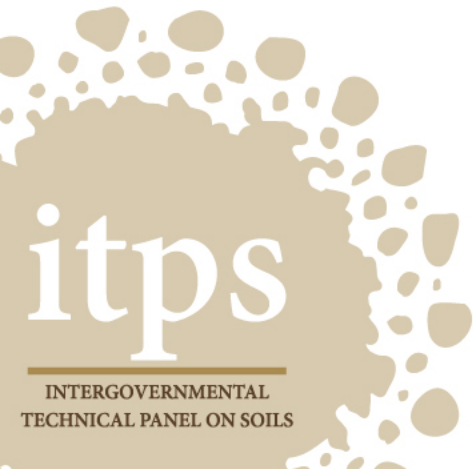
- GSERmap ITPS meeting – **February 2022**
- GSERmap Technical Specifications and Country Guidelines - **Ongoing**
- GSERmap WG Meeting – **Early April**
- Expert Nomination - **April**

## 3-Types of Soil Erosion 3-Models

- Water, Tillage and Wind
- RUSLE, WaTEM , WEQ

## 2-Phase Approach will be adopted

- PHASE I – National Soil Erosion Factor Databases/Data Repositories **(2022)**
- PHASE II – National Soil Erosion Modelling **(2022-2023)**



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# Global Soil Nutrient and Nutrient Budget Maps

GSNmap Working Group (*being established*)

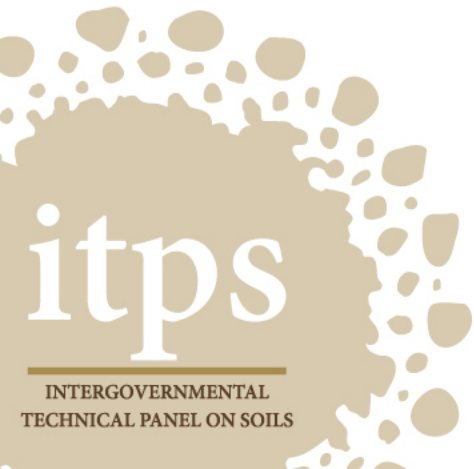
experts from the INSII, ITPS, and individual experts. The WG will support:

- the identification of a suitable methodology to map soil nutrient
- technical development
- the publication of key documents

GSNmap concept note (*ongoing*)

## 2-Phase Approach will be adopted

- **PHASE I** – Individual nutrient maps (macro, micro nutrients, limiting factors) (**2022**)
- **PHASE II** – NPK Budgets (**2022-2023**)



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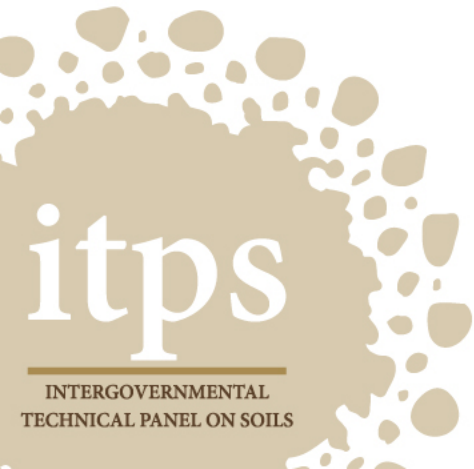
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*"The SoilSTAT will be the main platform for monitoring and reporting of the indicators and monitoring the progress made in the implementation the new GSP Action framework. For that, the existing SoilSTAT concept will be adapted by INSII, amended and designed to include the indicators"*

Draft GSP Action Framework



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# Q4 2021 & Q1 2022



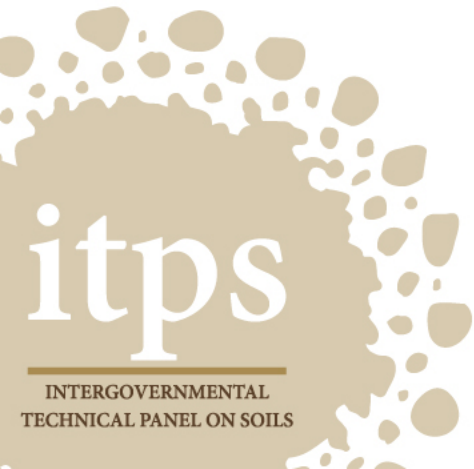
## 7 Recent Workshops & Trainings

Carbon Modelling, Soil Data Management, Digital Soil mapping

100+ People 25+ Countries

AI QUAD CAMERA

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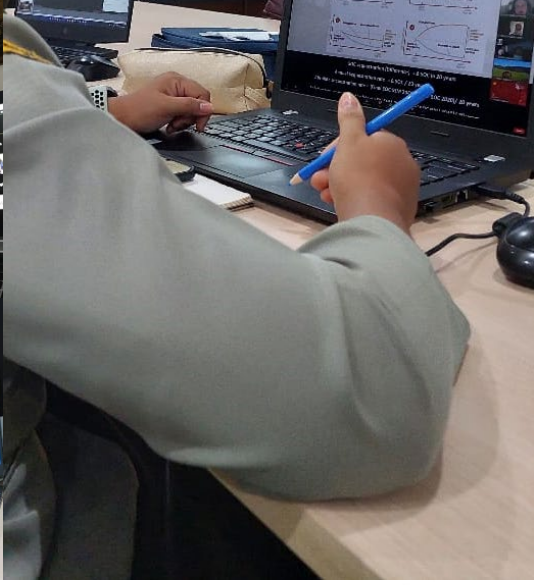
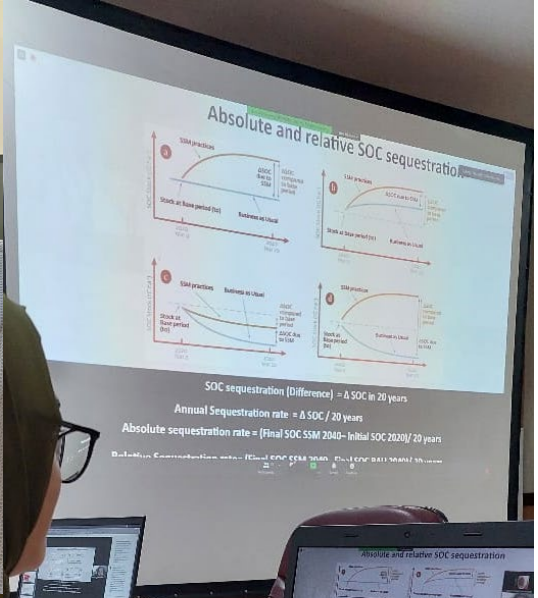
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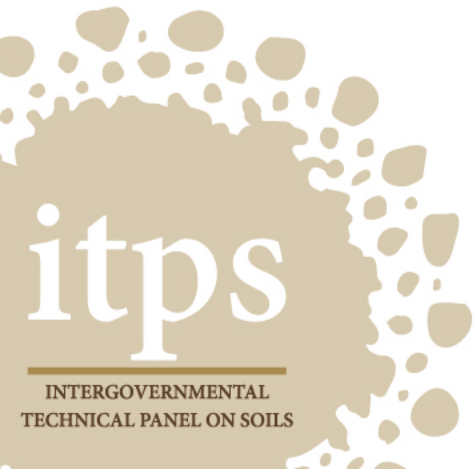
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A large, semi-transparent grid of video conference thumbnails serves as the background for the central text. Each thumbnail shows a different participant in a virtual meeting, with their names and country/organization visible in small text at the bottom of each frame. The grid is composed of many small, overlapping windows, creating a sense of a large-scale, multi-participant event.

**140+ Countries**

**1100+ Experts**

**50+ Sessions**

**8 Regions**

- GSOCmap**
  - 110+ Countries
  - 250+ National Experts
- GSSmap**
  - 120+ Countries
  - 320+ National Experts
- GSOCseq**
  - 130 Countries
  - 390+ National Experts
- GSP Digital Soil Mapping Trainings**
  - 90+ Countries
  - 250+ National Experts

- **Training Sessions:** Global, Regional, National, One-on-One
- **Technical Documents:** Country Guidelines, Technical Manuals
- **Software/Data:** Tools, Scripts, input data
- **Financial Support:** Remained limited due to

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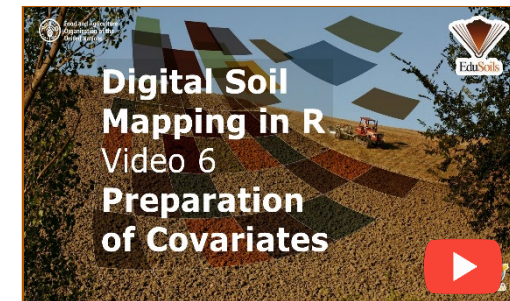
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# Video Tutorials (DSM)



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# Video Tutorials (new)

## The Global Soil Partnership (GSP)

Was established in December 2012 with the main aim of:

- 1 creating a mechanism to foster strong partnerships and collaboration to place soils on the global agenda;
- 2 promoting Sustainable Soil Management (SSM);
- 3 improving the governance of soils.



Find out more about the GSP and its many activities and projects here:  
<http://www.fao.org/global-soil-partnership/en/>

EduSoils | e-learning soil education

2:16 / 7:46



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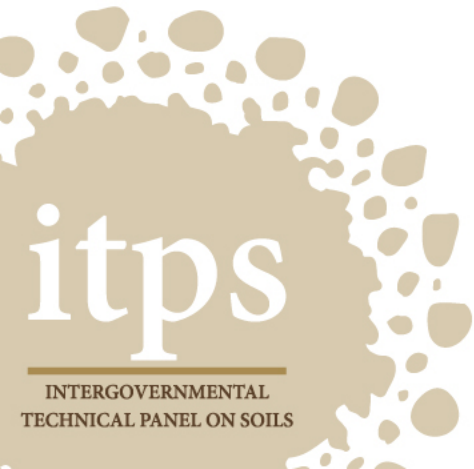
Capacity Development

**GloSIS**

GlobeSpeC



GloSIS & GloSIS DH  
will resume in the 2<sup>nd</sup> half of 2022  
NSIS Development - *ongoing*



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**GlobeSpeC**

# GlobeSpeC

Global Spectral Soil Organic Carbon Estimation Services

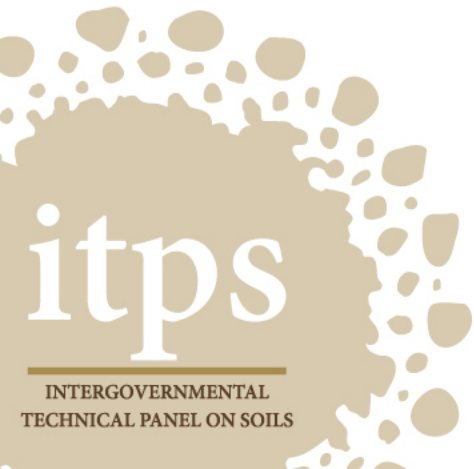
- aims to provide a rapid, reliable and free soil organic C estimation service to the world based on a spectroscopy estimation service platform with advanced machine-learning algorithms.
- Joint Initiative of GLOSOLAN & GSP SID and a spectroscopy group at the Curtin University (AUS)

***Initial Launch:*** August 2022 (WSC'22 - Glasgow)

***Testing Phase*** - June - October 2022

***Launch*** – GLOSOLAN, GLOSOLAN Spectroscopy and INSII (Q4 2022)

***WSD Event*** - 5 December 2022



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THANK YOU 😊

QA



**Marcos**  
GSNmap, GBSmap



**Isabel**  
GSOCseq, Capacity Dev



**Moritz**  
GSOmap



**Guillermo**  
GSOCseq, SOC



**Christian**  
GSASmap, GSERmap



**Yi**  
GlobeSpeC, Spectroscopy



**Lydia**



**Costanza**

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