Food and Agriculture Organization of the United Nations

8 - 10 September 2021

VIRTUAL MEETING

International Network of Soil Information Institutions

Yusuf Yigini – GSP Secretariat

on behalf of

Mr Luca Montanarella

Vice Chair GSP PA & INSII Chair

GLOBAL SOIL PARTNERSHIP 9th Plenary Assembly

GLOBAL SOIL PARTNERSHIP

Food and Agriculture Organization of the United Nations

International Network of Soils Information Institutions

- Is the main implementation body of Pillar 4 (Soil Information & Data);
- **117** Member Countries + **EU** represented in INSII
- Chaired by **Mr Luca Montanarella**
- It's main deliverable is **GloSIS**;
- Meets on annual basis to discuss and review the progress it's deliverables;
- The Sixth Workshop of the INSII was held online from 7 to 9 October, 2020;
- The meeting reviewed the progress and status of the Pillar 4 Global Implementation Plan, GloSIS and its data products.

Food and Agriculture Organization of the United Nations

Action by the 9th PA:

- ***Encourage GSP*** members to nominate their national soil information institution(s) to be represented in INSII.

Food and Agriculture Organization of the United Nations

STATUS - Pillar 4 Implementation Plan

- The Pillar 4 Implementation Plan was expired in 2020;
- The 8th GSP PA extended the Pillar 4 implementation period until the 9th GSP Plenary Assembly and mandated INSII for the further steps;
- A draft new implementation plan prepared
- New P4IP development paused for the plenary discussion of the new **GSP Action Framework** *(GSPPA:IX/2021/2 – 2.1 & 2.2)*.

Pillar 4 - First implementation period (2017-2021)

Progress & Lessons Learnt (activities)

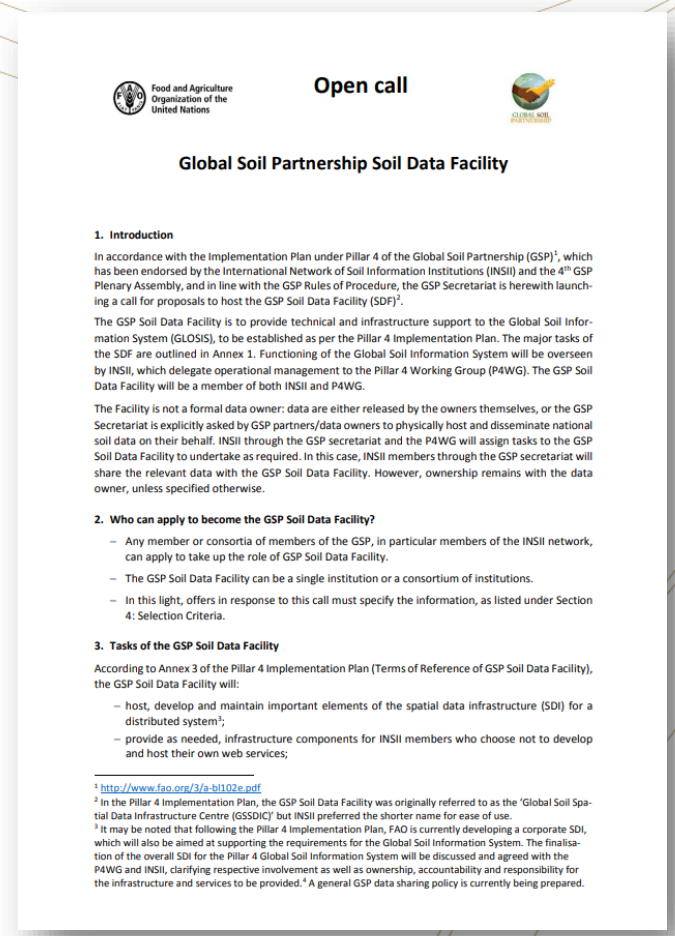
- The rigid structure of P4GIP has proven to limit the implementation of activities and the mobilization of resources;
- The focus shifted gradually from developing global grids of basic soil properties ***to country-driven thematic soil data products (GSOCmap, GSSmap, GSOCseq)*** as per requested by the members.
- GSP Secretariat needed to channel it's resources to ***capacity building and country driven global data products***;
- A transition towards a ***more flexible structure*** in line with international agenda and targets in the short to medium term would be necessary;
- GSP Capacity Building Programme has been a tremendous success which played the most important role for the development of country-driven global maps. And it's most welcome activity of Pillar 4.

Pillar 4 - First implementation period (2017-2021)

Progress & Lessons Learnt (governance):

- **The Pillar 4 Working Group** was envisioned to be the executive body of the INSII by executing the technical tasks given by INSII.
- However, Pillar 4 Working Group's contribution **remained limited** due to lack of funding and therefore time and human resources and lack of specific technical expertise.
- Less progress made on GloSIS SDI development than envisaged.
  - This was due to an extensive groundwork and community effort (Pillar 4 and Pillar 5 WG) were needed in terms of developing and agreeing on standards and the functional design and because the main focus of the Pillar 4 was on the development of thematic products.

Governance - First implementation period (2017-2021)



Food and Agriculture Organization of the United Nations

Open call

Global Soil Partnership Soil Data Facility

1. Introduction

In accordance with the Implementation Plan under Pillar 4 of the Global Soil Partnership (GSP)[1], which has been endorsed by the International Network of Soil Information Institutions (INSII) and the 4th GSP Plenary Assembly, and in line with the GSP Rules of Procedure, the GSP Secretariat is herewith launching a call for proposals to host the GSP Soil Data Facility (SDF)[2].

The GSP Soil Data Facility is to provide technical and infrastructure support to the Global Soil Information System (GLOSIS), to be established as per the Pillar 4 Implementation Plan. The major tasks of the SDF are outlined in Annex 1. Functioning of the Global Soil Information System will be overseen by INSII, which delegate operational management to the Pillar 4 Working Group (P4WG). The GSP Soil Data Facility will be a member of both INSII and P4WG.

The Facility is not a formal data owner: data are either released by the owners themselves, or the GSP Secretariat is explicitly asked by GSP partners/data owners to physically host and disseminate national soil data on their behalf. INSII through the GSP secretariat and the P4WG will assign tasks to the GSP Soil Data Facility to undertake as required. In this case, INSII members through the GSP secretariat will share the relevant data with the GSP Soil Data Facility. However, ownership remains with the data owner, unless specified otherwise.

2. Who can apply to become the GSP Soil Data Facility?

- Any member or consortia of members of the GSP, in particular members of the INSII network, can apply to take up the role of GSP Soil Data Facility.
- The GSP Soil Data Facility can be a single institution or a consortium of institutions.
- In this light, offers in response to this call must specify the information, as listed under Section 4: Selection Criteria.

3. Tasks of the GSP Soil Data Facility

According to Annex 3 of the Pillar 4 Implementation Plan (Terms of Reference of GSP Soil Data Facility), the GSP Soil Data Facility will:

- host, develop and maintain important elements of the spatial data infrastructure (SDI) for a distributed system[3];
- provide as needed, infrastructure components for INSII members who choose not to develop and host their own web services;

[1] http://www.fao.org/3/a-bl102e.pdf
[2] In the Pillar 4 Implementation Plan, the GSP Soil Data Facility was originally referred to as the 'Global Soil Spatial Data Infrastructure Centre (GSSDIC)' but INSII preferred the shorter name for ease of use.
[3] It may be noted that following the Pillar 4 Implementation Plan, FAO is currently developing a corporate SDI, which will also be aimed at supporting the requirements for the Global Soil Information System. The finalisation of the overall SDI for the Pillar 4 Global Soil Information System will be discussed and agreed with the P4WG and INSII, clarifying respective involvement as well as ownership, accountability and responsibility for the infrastructure and services to be provided.[4] A general GSP data sharing policy is currently being prepared.

GSP Soil Data Facility (2017-2020)

- In the first Implementation Plan (2017-~~2020~~ 2021) a Soil Data Facility (SDF) was part of the proposed governance/technical structure;
- SDF selected through a Open Call;
- ISRIC was appointed as SDF by the 5th GSP PA (20-22 June 2017) for 3 years;
- It's mandate expired in 2020 after 3 years;
- The 8th PA extended the Pillar 4 Implementation period and the mandate of the GSP Soil Data Facility until 9th PA.

Food and Agriculture Organization of the United Nations

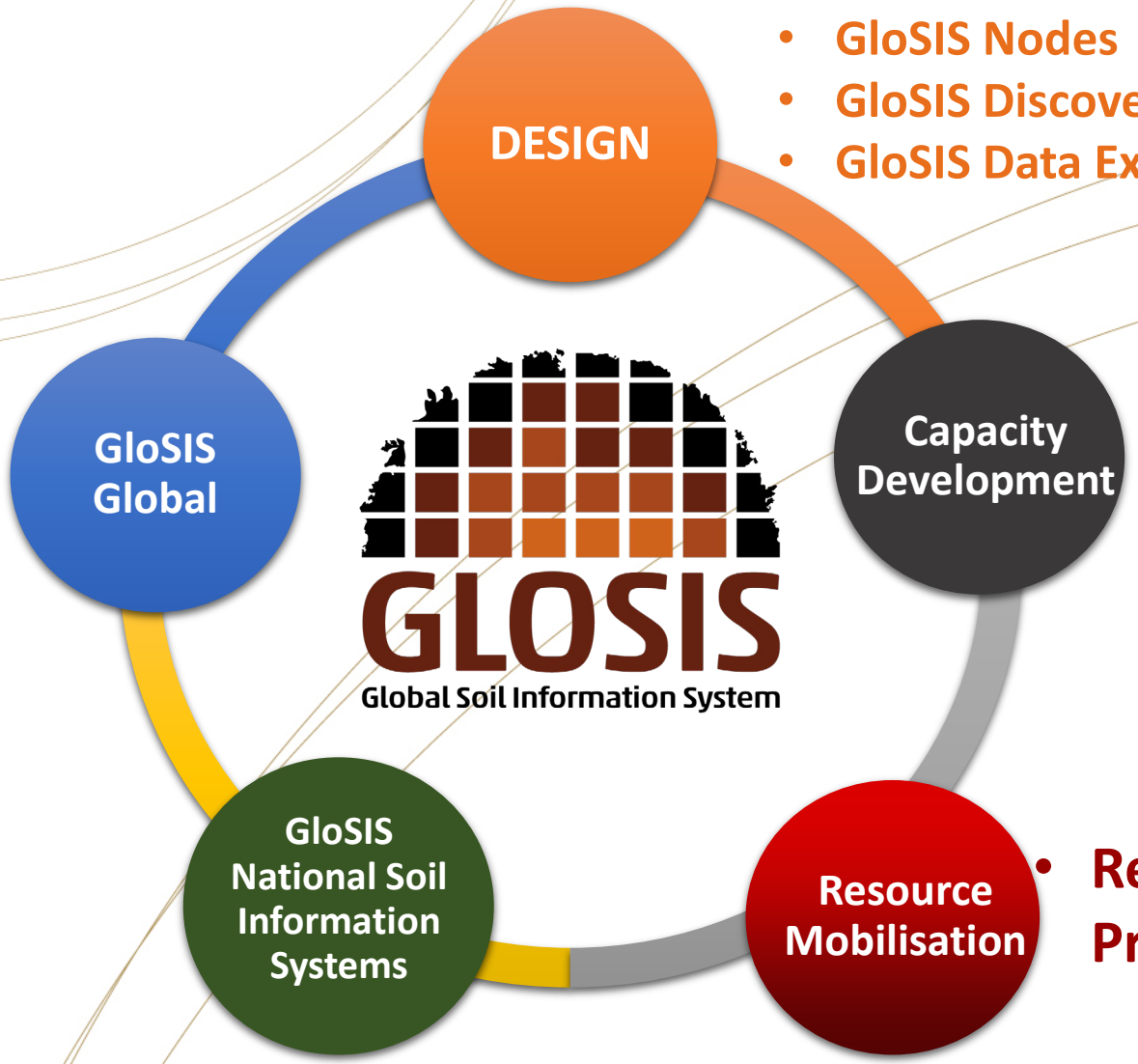
GloSIS – Governance

- Over the last years the technical capacity at FAO and therefore at GSP Secretariat has been significantly increased. The GSP Secretariat is now able to develop **fast in-house solutions** with relevant FAO divisions.
- Considering the existing in-house technical and technological capacity, the further development of the GloSIS components would be undertaken and maintained by FAO, and GloSIS coordination, management and maintenance would be carried out by the GSP Secretariat, relevant FAO divisions/programmes (Hand in Hand, Geospatial Unit, CSI) and **overseen by INSII**.

Action by the 9th PA:

Call on GSP Secretariat to host and maintain the elements of GloSIS SDI (Spatial Data Infrastructure) and GloSIS data products (country-driven global maps, GloSIS Discovery Hub) considering FAO's enhanced capacity on spatial infrastructure and services.

Food and Agriculture Organization of the United Nations



- GloSIS Nodes
- GloSIS Discovery Hub
- GloSIS Data Exchange

- Trainings
- Product Guidelines
- Technical Manuals
- Tools/Software

- Regional & National TCP Projects

- GSOCmap
- GSSmap
- GSOCseq
- GBSmap
- GSERmap
- …

- Regional, National, Institutional Soil Information Systems

INSII
INTERNATIONAL NETWORK OF SOIL INFORMATION INSTITUTIONS

Food and Agriculture Organization of the United Nations

DESIGN

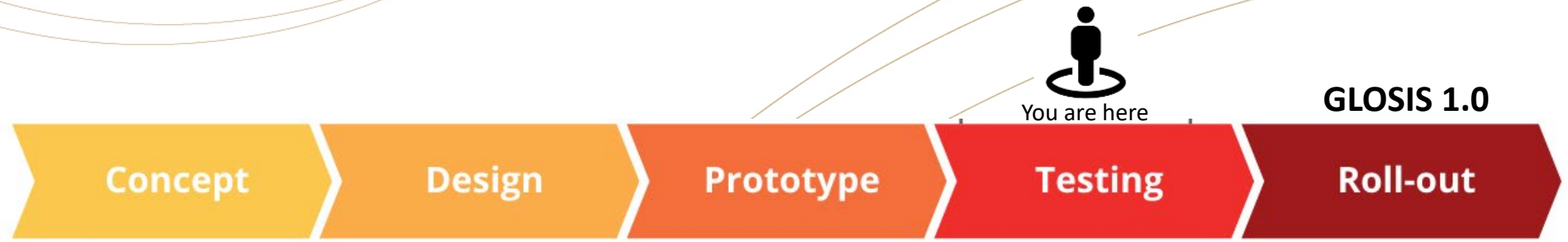
- **GloSIS Nodes (National, Regional Systems)**
- **GloSIS Discovery Hub**
- **GloSIS Data Exchange**

GloSIS 1.0 – in Beta Phase (National Systems and Discovery Hub)

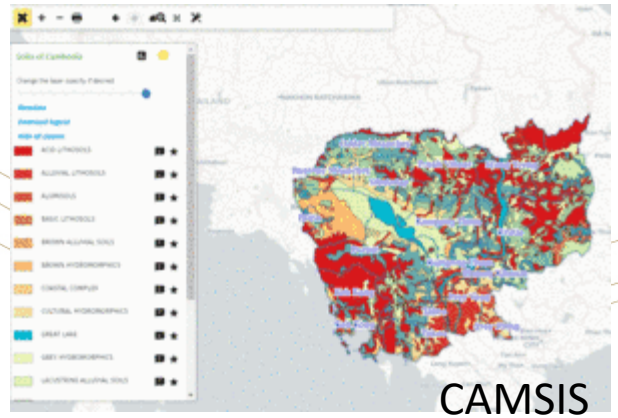
- GSP Soil Data Facility (ISRIC) has been supporting GSP for the design/development of GloSIS Discovery Hub and tools for National Soil Information Systems
  - We named the technologies for national soil information systems;
  - We introduced GloSIS Instructions Guide and the software package to be used for National Soil Information Systems *(Open Source – GeoNode)*
  - We introduced requirements for beta testing;
  - Beta version GloSIS Discovery Hub has been developed *(Open Source – GeoNetwork)*
  - GSP Consultancy to develop GloSIS Data Exchange Language

Food and Agriculture Organization of the United Nations

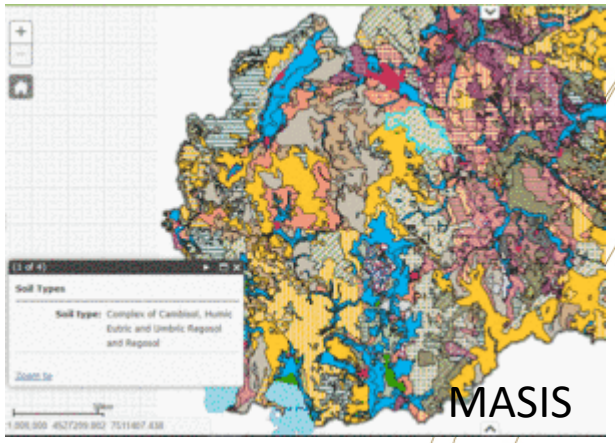
GloSIS - Beta Phase (National Systems and Discovery Hub)



GloSIS Beta Testing Countries: *Bolivia, Canada, Cape Verde, Fiji, Gambia, Indonesia, Israel, Italy, Mongolia, Morocco, Niger, Papua New Guinea, Philippines, Senegal, Sudan, Tunisia, Turkey, Ukraine, Zimbabwe, ASP CESRA*


CAMSIS

ArmSIS



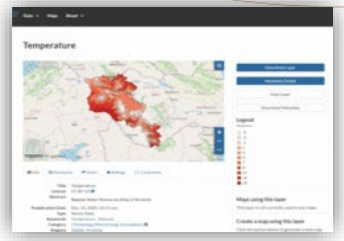
MASIS

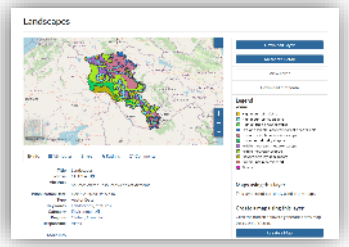
2015- 2021 National Soil Information Systems (NSIS) established/being established by FAO &GSP

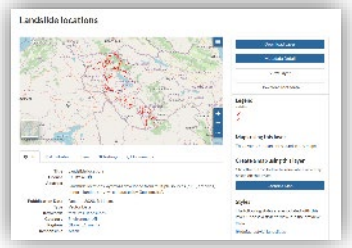
Completed	In the pipeline
• Sudan (SuSIS) • Macedonia (MaSIS) • Lesotho (LeSIS) • Afghanistan (SISAf) • Cambodia (CamSIS) • Latin America (SISLAC) • Armenia (ArmSIS)	• Liberia • Bangladesh • Bhutan • LAO PDR • Kyrgyzstan • Mongolia • Myanmar • Nepal • Philippines • Sri Lanka • Vietnam • Thailand • Indonesia • Serbia • Asian Soil Information System (ASIS)

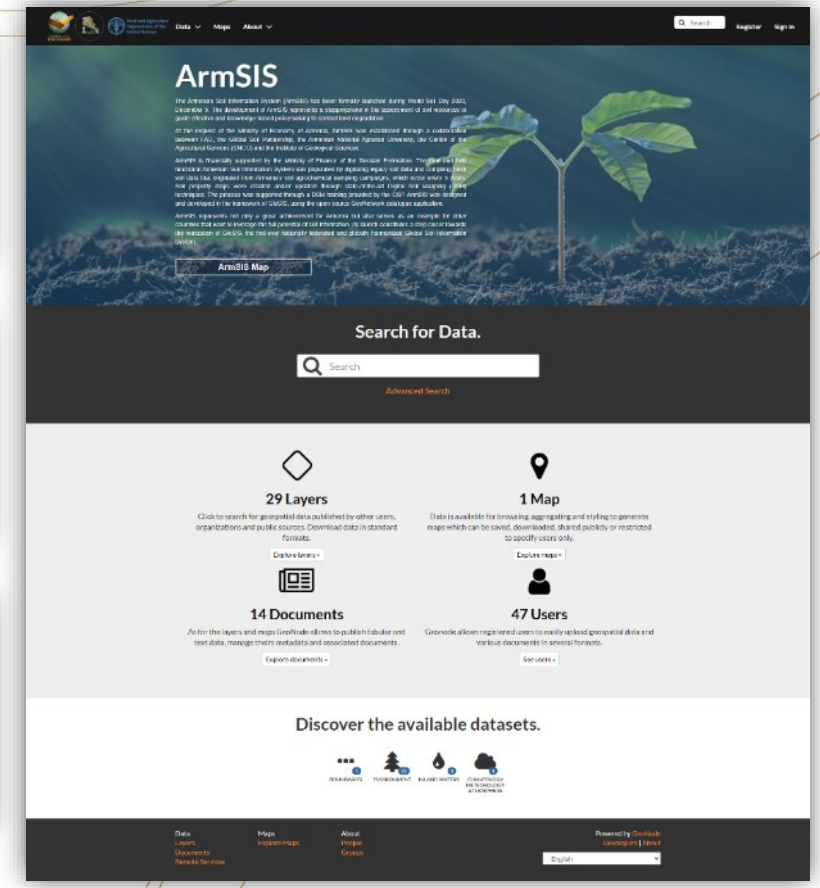
Food and Agriculture Organization of the United Nations

Armenian Soil Information System (ArmSIS)









ArmSIS was established through a collaboration between FAO, the Global Soil Partnership, the Armenian National Agrarian University, the Centre of the Agricultural Services (SNCO) and the Institute of Geological Sciences.

Approx. Budget: 180K USD

ArmSIS is financially supported by the Ministry of Finance of the Russian Federation

Food and Agriculture Organization of the United Nations

GloSIS – System Development

Action by the 9th PA:

- ***Encourage*** GSP secretariat and INSII to further development of GloSIS and National Soil Information Systems
- ***Encourage*** members to connect their existing SIS to GloSIS Discovery Hub and Allocate/mobilise financial resources for NSIS development

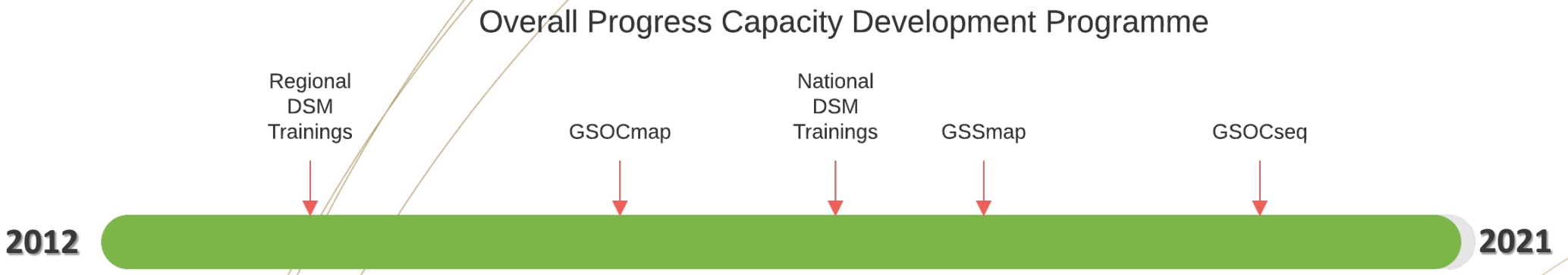
Contact: yusuf.yigini@fao.org

Food and Agriculture Organization of the United Nations

GSP Capacity Development Programme

Capacity Development

- **Trainings** ***(International, Regional, National, One-on-One)***
- **Product Guidelines**
- **Technical Manuals**
- **Tools/Software**
- **Data Supply**



Food and Agriculture Organization of the United Nations

GSP Capacity Development Programme

OUTREACH

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

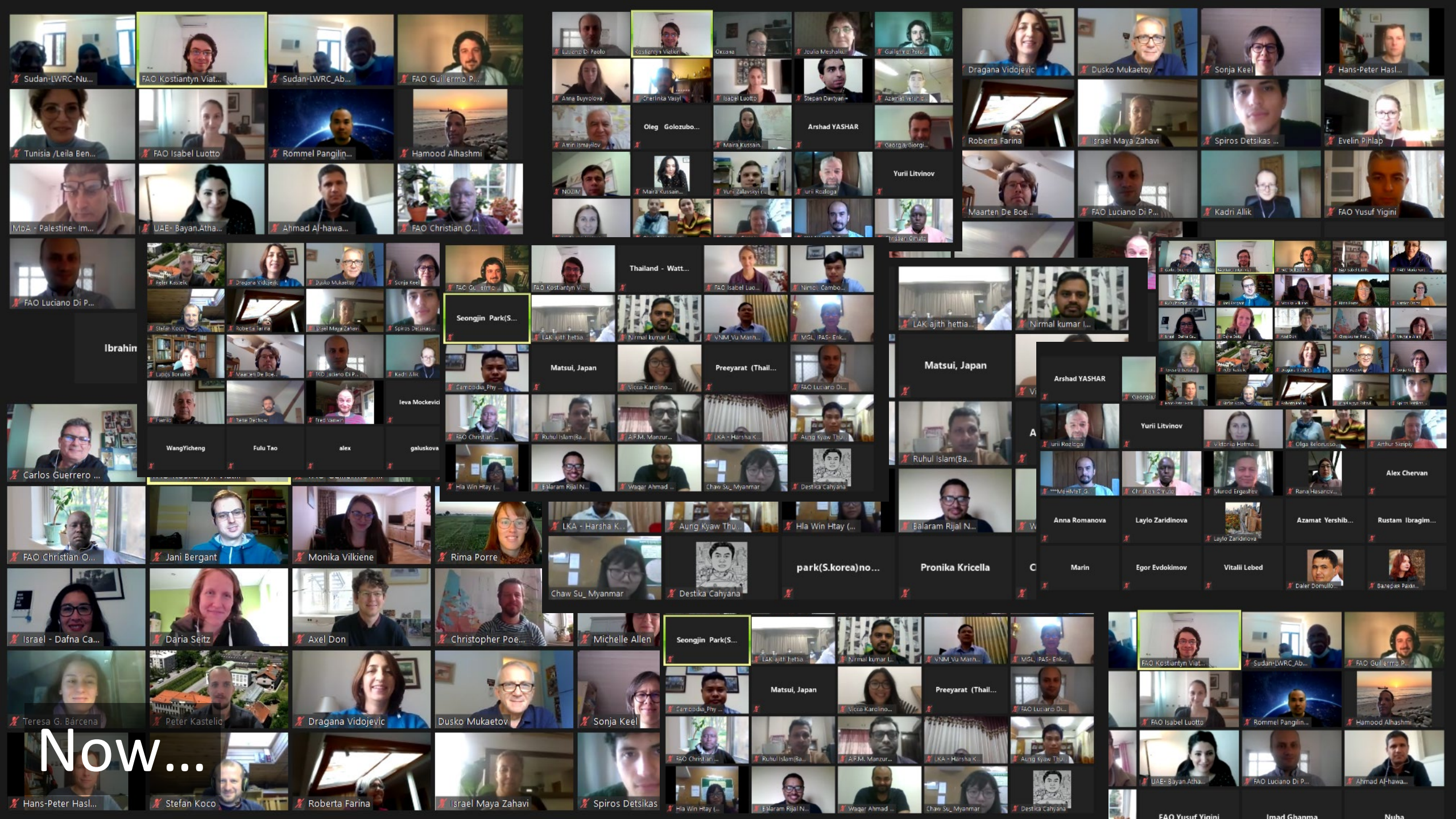
140+ Countries

1100+ Experts

50+ Sessions

8 Regions

MGAP
Then…


Now...

Food and Agriculture Organization of the United Nations

GSP Capacity Development Programme

Action by the 9th PA:

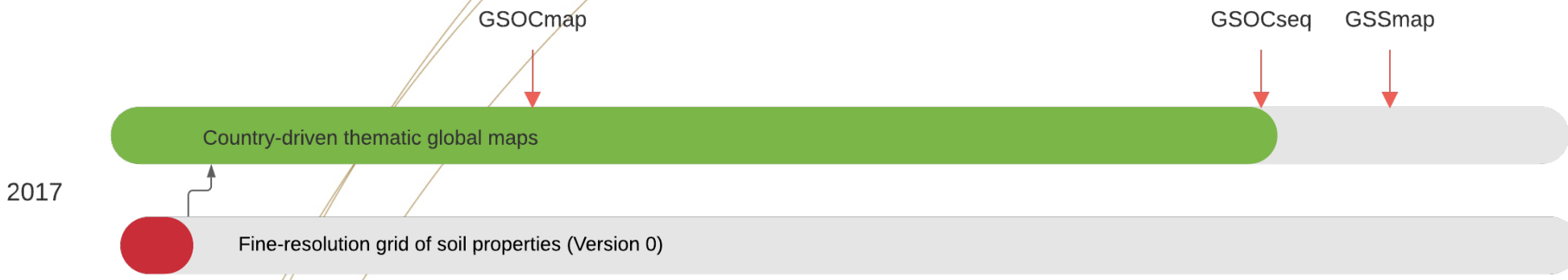
In view of substantial requirements to improve technical and technological capacities in countries, ***invite*** resource partners to invest on capacity development on soil information;

Food and Agriculture Organization of the United Nations

GloSIS Global

- Global Soil organic Carbon Map
- Global Soil Salinity Map
- Global Soil Organic Carbon Sequestration Potential Map
- Global Black Soil Distribution Map
- Global Soil Erosion Map
- …

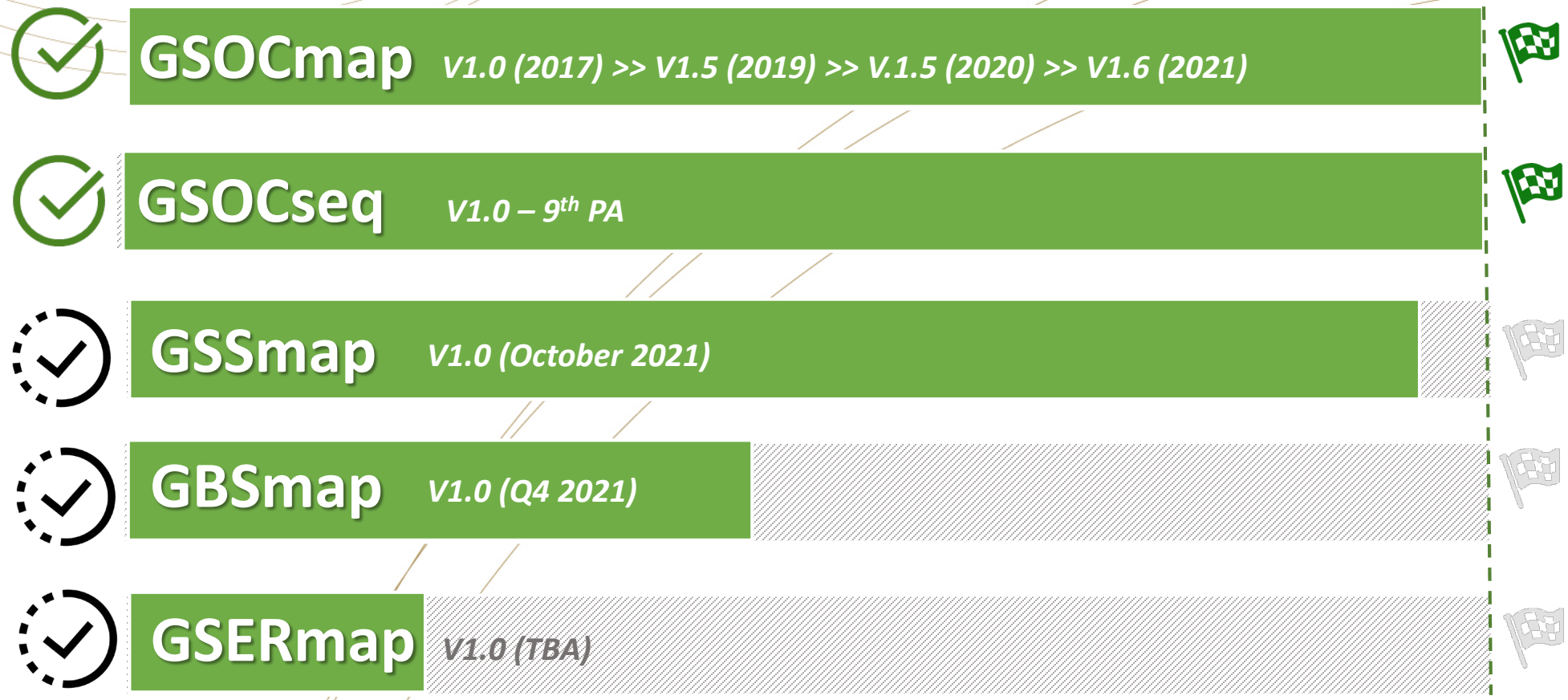
Overall Progress GloSIS Global



GLOSIS Global Soil Information System

Food and Agriculture Organization of the United Nations

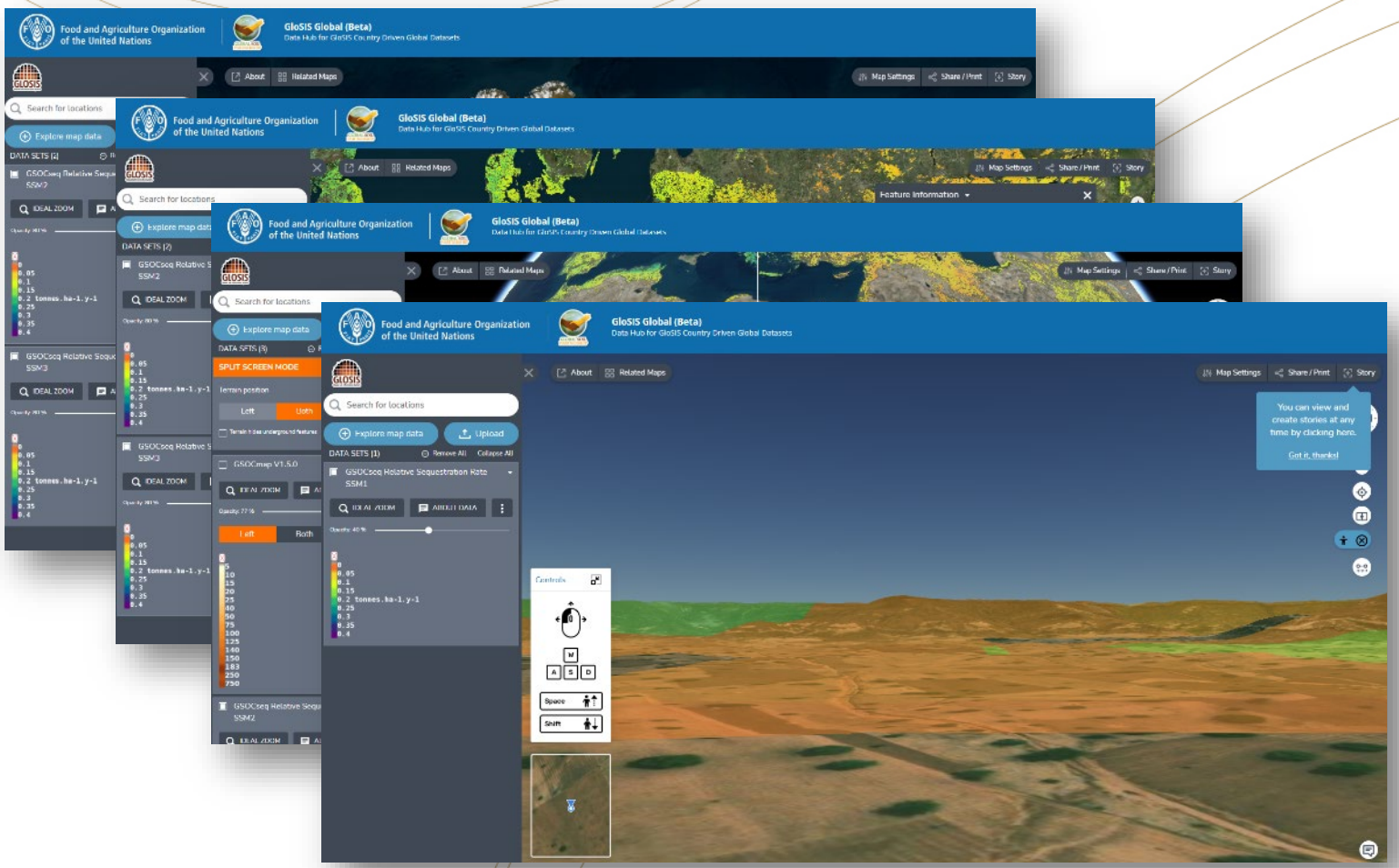
GloSIS Global - Country Driven Global Datasets



GLOSIS
Global Soil Information System

GSOCseq v1.0 Launched

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



[GloSIS Global] Web Platform developed by FAO/GSP using open source libraries [(TerriaJS/TerriaMap)] and will be housing GloSIS country-driven global datasets and relevant soil data;

- GSOCmap
- GSOCseq
- GSSmap
- …
- HWSD - Harmonised World Soil Database
- DSMW - Digital Soil Map of the World

Food and Agriculture Organization of the United Nations

GloSIS Global - Data Products

Action by the 9th PA:

- ***Welcome*** the development of the Global Soil Salinity Map (GSSmap), Global Soil Organic Carbon Sequestration Potential Map (GSOCseq) and Global Black Soil Distribution Map (GBSmap).
- ***Urge*** countries to prepare national maps as per the technical specifications developed for the GloSIS Global Data Products.
- ***Encourage*** GSP Secretariat and INSII to take necessary steps for a major update of the Global Soil Organic Carbon Map for additional depths and expect INSII and GSP Secretariat that end.
- ***Recognize*** the need for the INSII and the GSP Secretariat to continue developing country-driven global data products on soil threats and basic soil properties.

Food and Agriculture Organization of the United Nations

GLOBAL SOIL PARTNERSHIP
9th Plenary Assembly

8 - 10 September 2021

VIRTUAL MEETING

GLOBAL SOIL PARTNERSHIP