



Food and Agriculture
Organization of the
United Nations

7th Meeting of the International Network of Soil Information Institutions (INSII)

09-10-11
November
2021

Online
meeting

Progress report 2020-2021

GloSIS Development, GloSIS Data Products

Agenda ITEM IIIa & IIIb



International Network of Soils Information Institutions

- Is the main implementation body of Soil Information & Data activities;
- 117 Member Countries + EU represented in INSII;
- Chaired by Mr Luca Montanarella (EC –EU);
- INSII's main deliverable is GloSIS;
- Meets on annual basis to discuss and review the progress on GloSIS, and GloSIS country-driven global data products;
- The 6th INSII Meeting was held online from 7 to 9 October, 2020;



In this Meeting – 7th INSII

- 175 Registered Participants
- 82 INSII Representatives + 104 National Experts
- All GSP Regions
- 90 Countries + EU

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117 Member Countries + EU represented in INSII



Pillar 4 - Contact Network



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Please contact us to [update your information!](#)

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- GSOCmap
- GSSmap
- GSOCseq
- GBSmap
- GSERmap
- ...



- GloSIS Discovery Hub
- GloSIS Data Exchange
- GloSIS Global



- Trainings
- Product Guidelines
- Technical Manuals



- Regional, National, Institutional Soil Information Systems



- Regional & National TCP Projects





GloSIS

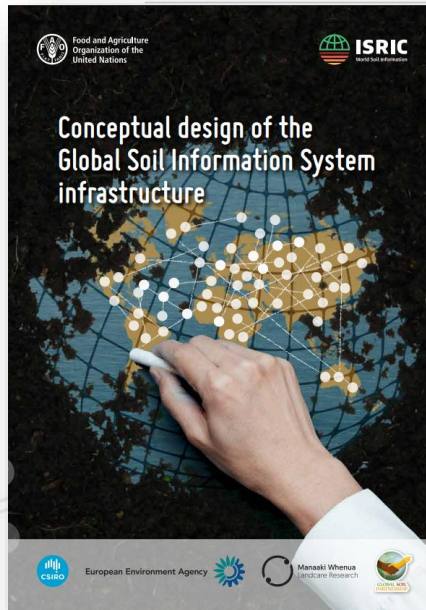
Global Soil Information System



GloSIS - Key DOCUMENTS

← → ↻ 🔒 fao.org/documents/card/en/c/cb4355en

Conceptual design of the Global Soil Information System infrastructure



Year of publication: 2021

Place of publication: Rome, Italy

Pages: #30 p.

Author: de Sousa, L., Kempen, B., Mendes de Jesus, J., Yigini, Y., Viatkin, K., Medyckij-Scott, D. Richie, A., Wilson, P. van Egmond, F. and Baritz, R.

Publisher: FAO and ISRIC

Agrovoc: information systems; soil profiles; information infrastructure; data management

Abstract:

This document provides a proposal for the design of the GLOSIS infrastructure at higher level. It considers the required architectural and engineering building blocks. The architectural building blocks are mostly abstract, setting out structures and formalising knowledge into an information model. The engineering building blocks concern primarily the technologies that realise the structures set out in the architecture. It presents a number of implementing units and enumerates some of the technologies on which it may depend. The broad aim is to have an implementation that is lightweight, cheap and easy to deploy by data holders, while at the same time relieving data providers from technical details.

Cite this content as:

de Sousa, L., Kempen, B., Mendes de Jesus, J., Yigini, Y., Viatkin, K., Medyckij-Scott, D. Richie, A., Wilson, P. van Egmond, F. and Baritz, R. 2021. *Conceptual design of the Global Soil Information System infrastructure*. Rome, FAO and Wageningen, Netherlands, ISRIC.

GloSIS Design Document, T1/T2 Specifications, GloSIS Data Model

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Long & short term goals

GloSIS 1.0

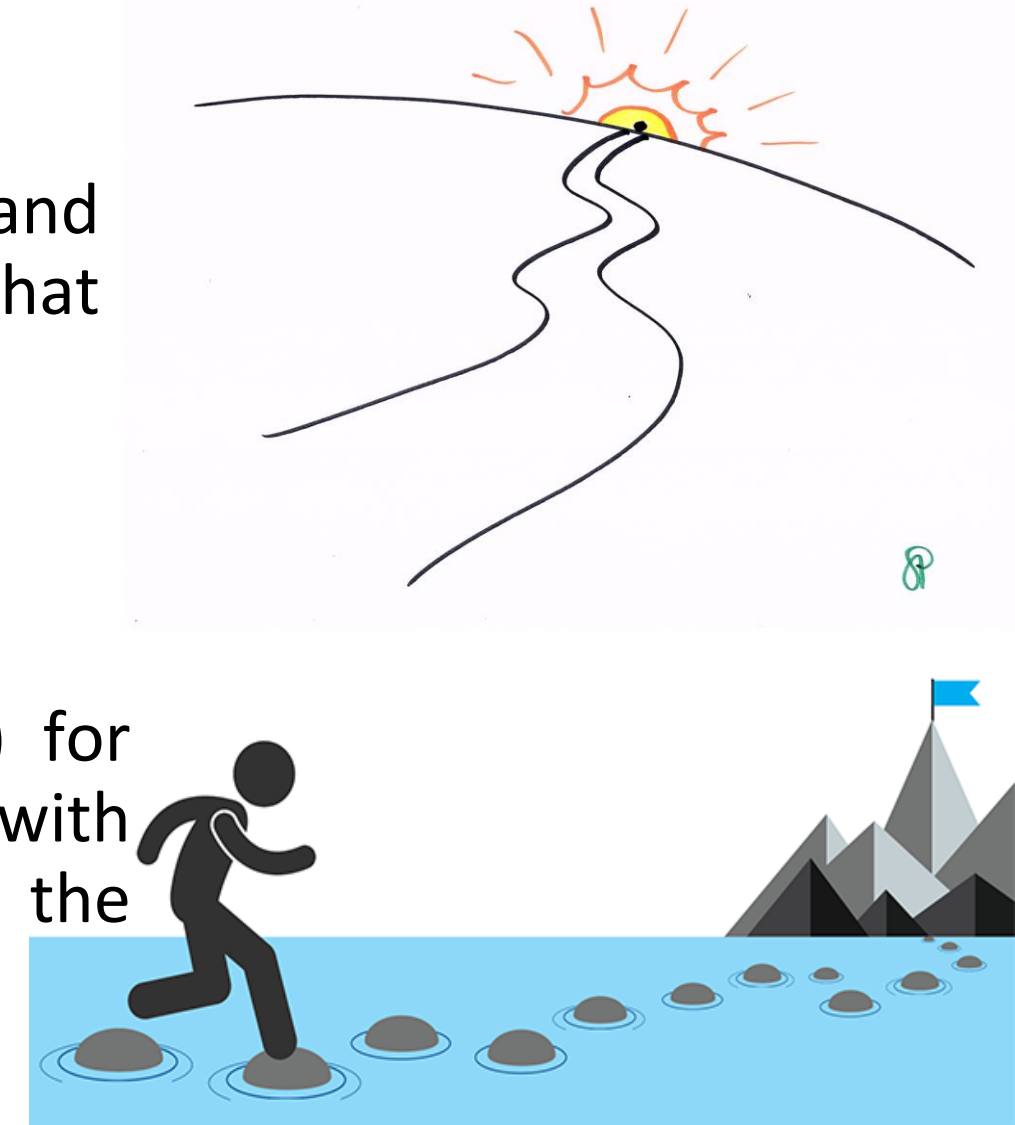
Short-term goal: Help countries in organizing and sharing their existing data. Create a SIS that increases findability and accessibility of data

NSIS 1.0 and GloSIS DH 1.0

GloSIS 2.0

Fully fledged platforms (NSISs & GloSIS DH) for harmonized data storage and exchange with several add-ons/plugin-ins using standards and the latest IT solutions for optimal functionality.

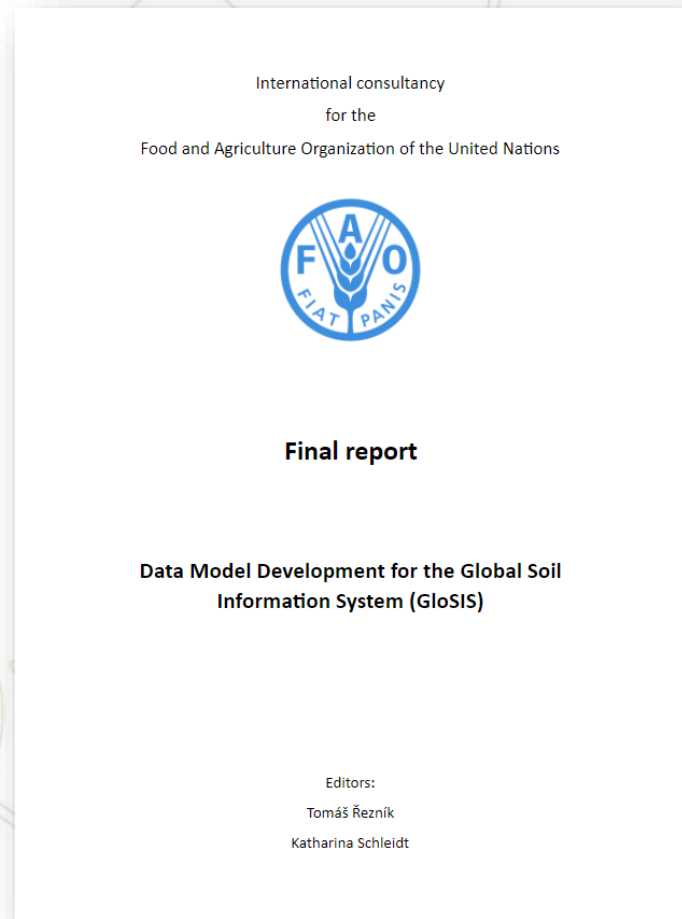
NSIS 2.0 and GloSIS DH 2.0



GloSIS 1.0 vs GloSIS 2.0

	GloSIS 1.0	GloSIS 2.0	Notes
Data Online, Findable, Searchable	Yes	Yes	Aim is F.A.I.R
Data Types	Point, Polygon, Raster	Point, Polygon, Raster	
National nodes	Yes	Yes	GeoNode first (v1), later dedicated code (v2)
Common Discovery Hub	Yes	Yes	GeoNetwork first (v1), later dedicated portal (v2)
(Crossborder) Data standardisation; reusability and data preparation	NA	GloSIS Data Exchange	allows standardisation of data (machine to machine), prerequisite for harmonisation

GLOSIS 2.0 - domain model and data exchange



GLOSIS domain model created by two leading experts, some remaining issues to be addressed

Consultancy:

Tomáš Řezník & Katharina Schleidt

GloSIS 1.0 - Beta Phase (National Systems and Discovery Hub)



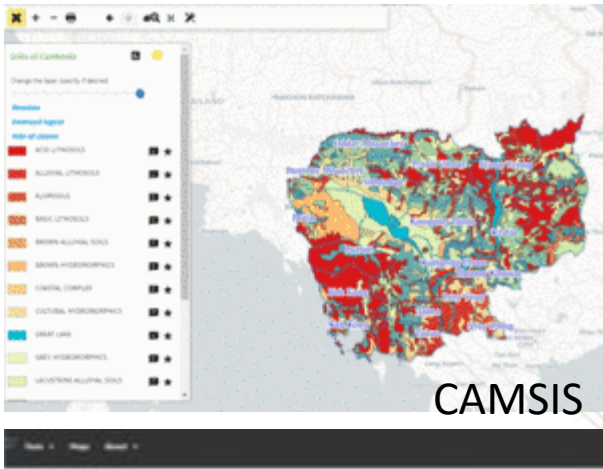
GloSIS Beta Testing Countries: *Bolivia, Canada, Cape Verde, Fiji, Gambia, Indonesia, Israel, Italy, Mongolia, Morocco, Niger, Papua New Guinea, Philippines, Senegal, Sudan, Tunisia, Turkey, Ukraine, Zimbabwe, ASP CESRA*

1st Beta Testing Countries Meeting (Jan'21)

2nd Beta Testing Countries Meeting (April'21)

GloSIS | Beta (National Systems and Discovery Hub)

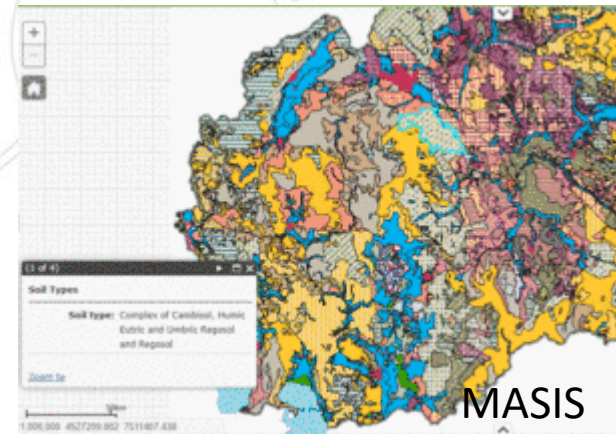
- With GSP Soil Data Facility (ISRIC) has been supporting GSP for the development of GloSIS Discovery Hub and tools for National Soil Information Systems;
 - We named the technologies for national soil information systems;
 - We introduced GloSIS Instructions Guide and the software package to be used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



CAMSIS



ArmSIS



MaSIS

Completed

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

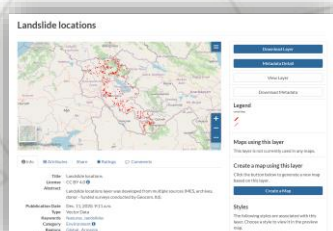
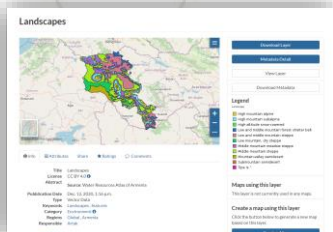
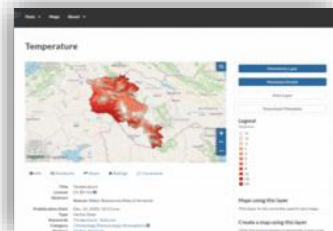
In the pipeline

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

These National Soil Information Systems (NSIS) established/being established by FAO and Donors Russian Federation, AFACI & Korea RDA.



Armenian Soil Information System (ArmSIS)



ArmSIS

The Armenian Soil Information System (ArmSIS) has been formally launched during World Soil Day 2020. The development of ArmSIS represents a step towards the assessment of soil resources to guide national and knowledge-based policymaking in natural land management.

At the request of the Ministry of Economy of Armenia, 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.

ArmSIS is financially supported by the Ministry of Finance of the Russian Federation. The ArmSIS-based national Armenian Soil Information System was populated by national legacy soil data and compiled soil and data base generated from surveys and agricultural surveys, which were used to create soil property maps, which created vector spatially through geospatial digital soil mapping (DSM) techniques. The process was supported through a data library provided by the Global Soil Partnership and developed in the framework of GLOSIS, using the open source GeoNetwork catalogue application.

ArmSIS represents the only of great importance for Armenia, but also allows, as an example for other countries, to use the full potential of soil information to benefit countries a step closer towards the realization of GLOSIS, the first ever nationally coordinated and globally harmonized digital soil information system.

Search for Data.

29 Layers
Click to search for geospatial data published by other users, organizations and public sources. Download data in standard formats.

1 Map
Data is available for browsing, aggregating and styling to generate maps which can be saved, downloaded, shared publicly or restricted to specific users only.

14 Documents
As for the layers and maps, GeoNetwork allows to publish metadata and text data, manage their metadata and associated documents.

47 Users
GeoNetwork registration allows to easily request geospatial data and view the documents in several formats.

Discover the available datasets.

INDUSTRY, GOVERNMENT, RENEWABLES, CLIMATE/ENVIRONMENT

Powered by GeoNode

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



GloSIS Discovery Hub Contribute Admin console admin admin ADMINISTRATOR

Catalog harvesters Catalog harvester report

Harvester

Filter

- ▶ ArgentinianSIS_CSW (GeoNetwork) 10
- ▶ **ArmenianSIS (OGC CSW 2.0.2) 29**
- ▶ CambodiaSIS (OGC Web Services)
- ▶ CanadaSIS (OGC Web Services) 1
- ▶ ColombianSIS_CSW (OGC CSW 2.0.2)
- ▶ ColombianSIS_GN (GeoNetwork)
- ▶ JapanSIS (GeoPortal REST) 0
- ▶ LeshotoSIS (OGC Web Services)
- ▶ Macedonia_REST (GeoPortal REST) 0
- ▶ MacedonianSIS_WMS (OGC Web Services) 2

Previous 1 / 2 Next

+ Harvest from Clone

Update harvester **ArmenianSIS** Delete Save Harvest

Identification

Node name and logo

ArmenianSIS

The name describing the remote node.

Group

National_SIS

Group which owns the harvested records. Only the catalog administrator or user admin of this group can manage this node.

User

Yusuf Yigini (yusuf.yigini@fao.org)

User who owns the harvested records

Action on UUID collision

Skip record (default)

When a harvester finds the same uuid on a record collected by another method (another harvester, importer, dashboard editor,...), should this record be skipped (default), overridden or generate a new UUID?

Schedule Enable disable

Frequency

Monthly

Only one run

This harvester will run once only.

Configuration for protocol OGC CSW 2.0.2

Service URL

http://armsis.cas.am/catalogue/csw?service=CSW&request=GetCapabilities&version=2.0.2

CSW URL with or without GetCapabilities parameters

Search filter

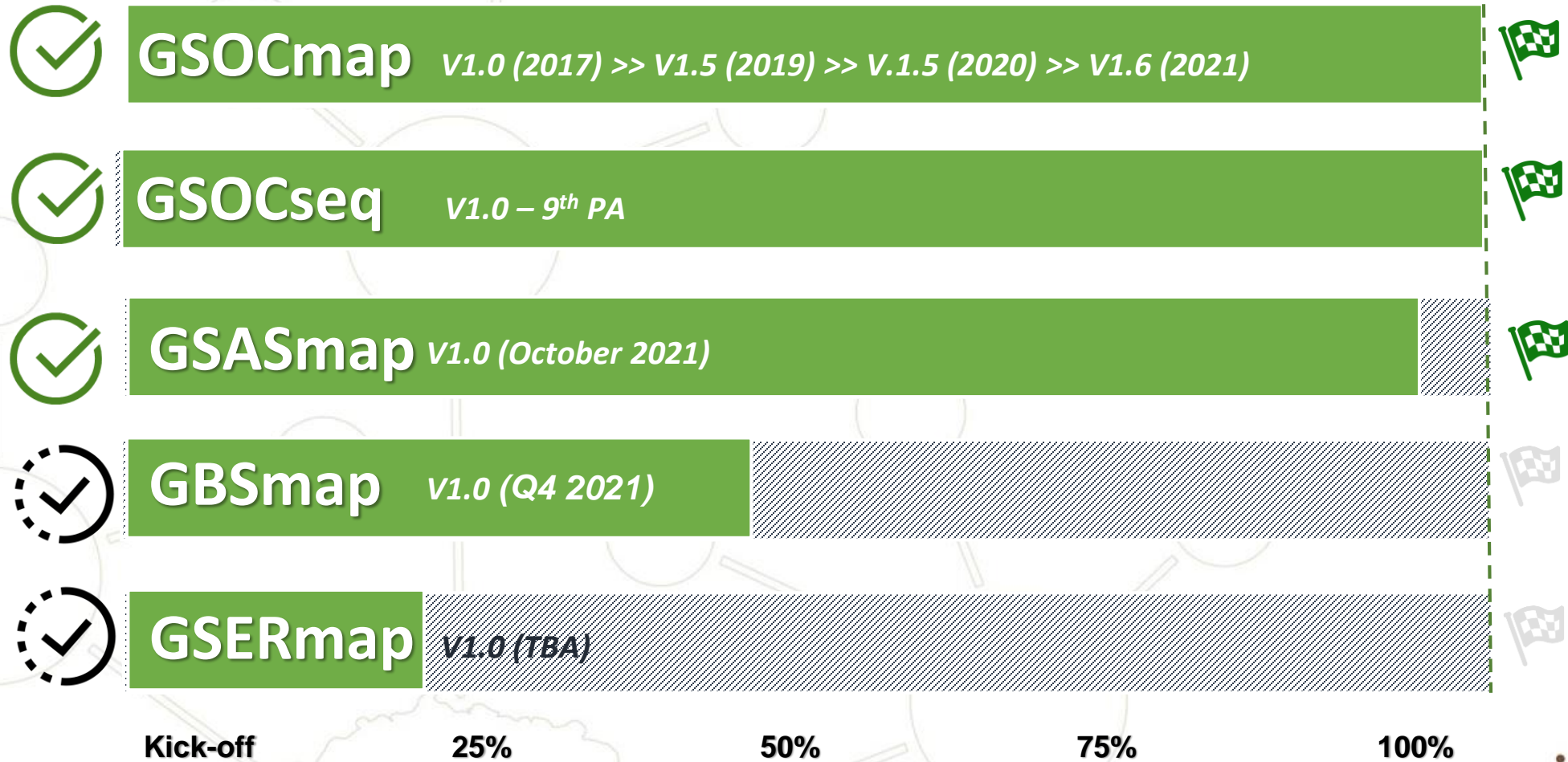
GloSIS Discovery Hub GeoNetwork (backend)

GloSIS

Global Soil Information System



GloSIS Global - Country Driven Global Datasets

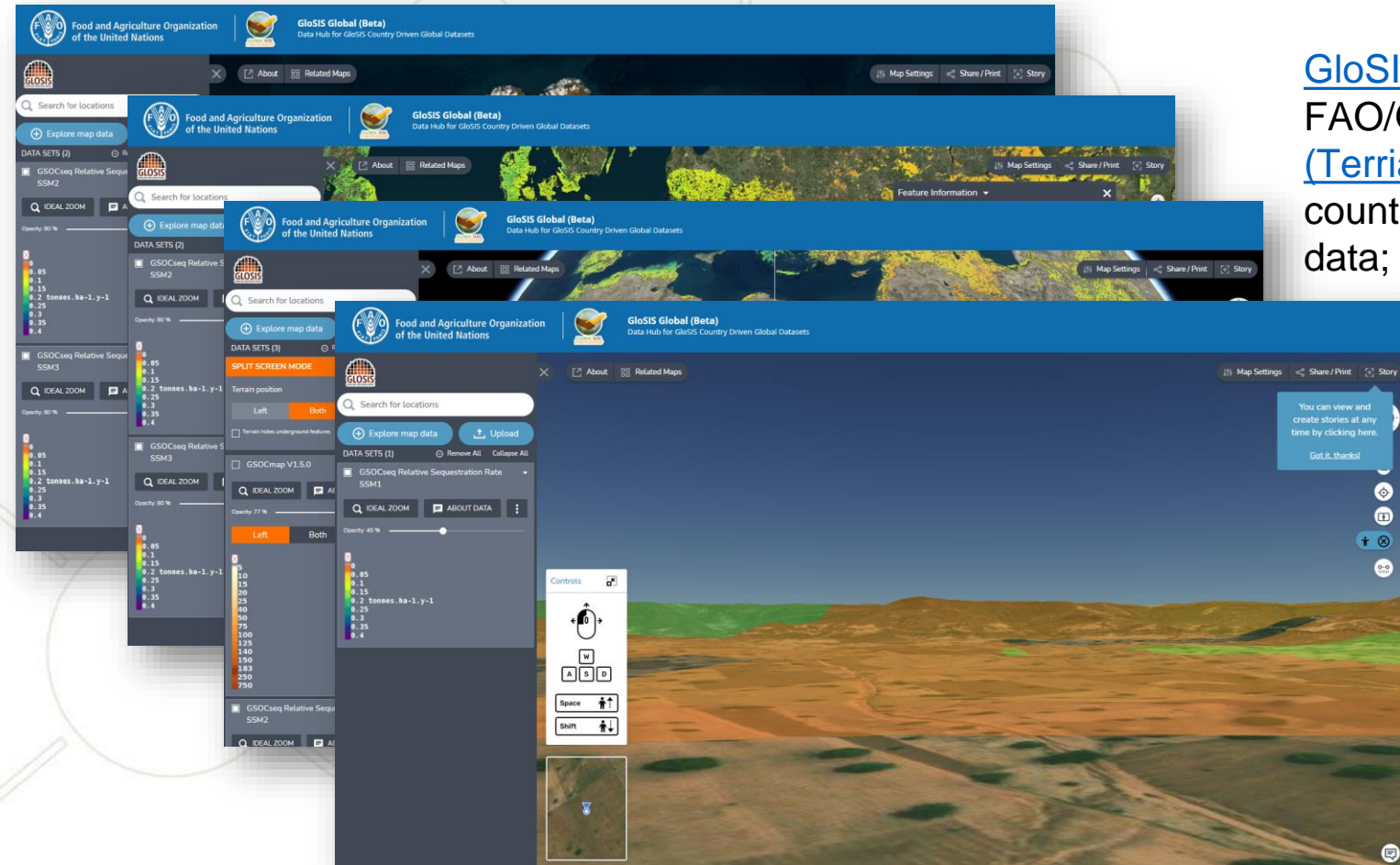


GloSIS Global - Launched



[GloSIS Global](http://www.fao.org/global-soil-partnership/gsocseq-map/en) 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
- GSASmap
- ...
- HWSD - Harmonised World Soil Database Derivatives
- DSMW - Digital Soil Map of the World



GSP Capacity Development Programme

OUTREACH



GSOCmap

- 110+ Countries
- 250+ National Experts



GSSmap

- 120+ Countries
- 320+ National Experts



GSOSeq

- 130 Countries
- 390+ National Experts



GSP Digital Soil Mapping Trainings

- 90+ Countries
- 250+ National Experts

140+ Countries
1100+ Experts
50+ Sessions
8 Regions

- ➔ **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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MGAP

GSP Asian Soil Partnership Workshop on Digital Soil Org towards the development of national soil organizations on 22-24 April at Asia Hotel, Bangkok

Using Covariates from Soil

```
##### 15 minute exercise #####  
An individual takes a loan of value L at a monthly interest rate i.  
The loan is to be repaid in n monthly installments of size M  
where:  

$$M = L \left( \frac{i}{1 - (1 + i)^{-n}} \right)$$
  
Write some code to calculate the monthly payments, M.  
1. Create objects for the loan (use appropriate names).  
2. Calculate the monthly payment.  
Use these objects to calculate the monthly payments.  
What are the units of the monthly payments?  
How does the monthly payment increase as the interest rate increases?
```

Then...

MR. KHUANG NGUYEN PHUO
MR. ANUAR



Now...

Sudan-LWRC-Nu...

FAO Kostiantyn Viat...

Sudan-LWRC_Ab...

FAO Guillermo P...

Luciano Di Pablo

Kostiantyn Viatko

Oksana

Jouila Meshalki

Guillermo Pera...

Dragana Vidojevic

Dusko Mukaetov

Sonja Keel

Hans-Peter Hasl...

Tunisia /Leila Ben...

FAO Isabel Luotto

Rommel Panglin...

Hamood Alhashmi

Anna Buyvolova

Cherlinka Vasyi

Isabel Luotto

Stepan Davtyan

Azamat Yershib

Oleg Golozubo...

Arshad YASHAR

Georgia Giorgi...

Roberta Farina

Israel Maya Zahavi

Spiros Detsikas ...

Evelin Pihlap

MoA - Palestine- Im...

UAE- Bayan.Atha...

Ahmad Al-hawa...

FAO Christian O...

NOZIM

Maira Kussain...

Yuri Zalavsky (...)

Lurii Rozloga

Yurii Litvinov

Maarten De Boe...

FAO Luciano Di P...

Kadri Alik

FAO Yusuf Yigini

FAO Luciano Di P...

Peter Kastelic

Dragana Vidojevic

Dusko Mukaetov

Sonja Keel

FAO Guillermo ...

FAO Kostiantyn Vi...

Thailand - Watt...

FAO Isabel Luo...

Nimol, Cambo...

Carlos Guerrero ...

FAO Kostiantyn Viat...

FAO Isabel Luotto

Stefan Koco

Roberta Farina

Israel Maya Zahavi

Spiros Detsikas ...

Seongjin Park(S...

LAK ajith hettia...

Nirmal kumar I...

LAK ajith hettia...

Nirmal kumar I...

FAO Kostiantyn Viat...

FAO Isabel Luotto

FAO Isabel Luotto

Lubos Boruvka

Maarten De Boe...

FAO Luciano Di P...

Kadri Alik

Matsui, Japan

Cambodia_Phy ...

Vicca Karolino...

FAO Luciano Di...

Arshad YASHAR

FAO Kostiantyn Viat...

FAO Isabel Luotto

FAO Isabel Luotto

Hamid

Rene Dechow

Fred Vanwin

Ieva Mockevici

FAO Christiani...

Ruhul Islam(Ba...

A.I.M. Manzur...

LKA - Harsha K...

Aung Kyaw Thu...

FAO Kostiantyn Viat...

FAO Isabel Luotto

FAO Isabel Luotto

WangYicheng

Fulu Tao

alex

galuskova

FAO Christiani...

Ruhul Islam(Ba...

A.I.M. Manzur...

LKA - Harsha K...

Aung Kyaw Thu...

FAO Kostiantyn Viat...

FAO Isabel Luotto

FAO Isabel Luotto

FAO Christian O...

Jani Bergant

Monika Vilkiene

Rima Porre

LKA - Harsha K...

Aung Kyaw Thu...

Hla Win Htay (...)

Balaram Rijal N...

Anna Romanova

Laylo Zaridinova

Azamat Yershib...

Rustam Ibragim...

Israel - Dafna Ca...

Daria Seitz

Axel Don

Christopher Poe...

Michelle Allen

Seongjin Park(S...

LAK ajith hettia...

Nirmal kumar I...

VNM_Vu Manh...

MGL IPAS- Enk...

FAO Kostiantyn Viat...

Sudan-LWRC_AB...

Teresa G. Barcena

Peter Kastelic

Dragana Vidojevic

Dusko Mukaetov

Sonja Keel

Cambodia_Phy ...

Vicca Karolino...

FAO Christian ...

Ruhul Islam(Ba...

A.I.M. Manzur...

LKA - Harsha K...

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Hans-Peter Hasl...

Stefan Koco

Roberta Farina

Israel Maya Zahavi

Spiros Detsikas

Hla Win Htay (...)

Balaram Rijal N...

Waqar Ahmad ...

Chaw Su_Myanmar

Destika Cahyana

FAO Kostiantyn Viat...

Sudan-LWRC_AB...

FAO Yusuf Yigini

Imad Ghanma

Nuba



Capacity Development programme will resume...