

Meeting 4 of the GSP Pillar 4 Working Group

Draft Agenda

Location Teleconference

Date 5th June 2018

Attendees

Neil McKenzie	INSII Chair, ITPS member
Yusuf Yigini	GSP Secretariat
Kostiantyn Viatkin	GSP Secretariat
Rainer Baritz	Chair Pillar 5 Working Group
Christian Omuto	Africa
Toshiaki Okhura	Asia
Edoardo Costantini	Europe
Oleg Golozubov (Laziza Gafurova)	Eurasia
Carlos Cruz Gaistardo (Renato Jimenez)	Central America, Caribbean and Mexico
Guillermo Olmedo	South America
Rachid Moussadek	Near East and North Africa
Bert VandenBygaart	North America
Mike Grundy	South West Pacific
Rik van den Bosch	SDF
Bas Kempen	SDF

Agenda (all times are UTC)

	Item	Responsibility
12:00	Welcome and introductions	Neil
12:05	ITEM 4.1: INSII Chair Report to the GSP Plenary	Neil
12:40	ITEM 4.2: SoilSTAT Concept Note	Yusuf
13:00	ITEM 4.3: Draft Concept Note for CountrySIS Guidelines	Konstantin
13:20	Other business	All members
13:30	Meeting Close	

Global Soil Partnership Pillar 4 Working Group	Meeting Number: 4
	Location: Teleconference
	Date: 5 th June 2018
AGENDA Paper	ITEM 4.1
INSII Report to the GSP Plenary	
<p>Background</p> <p>The Chair of INSII (CSIRO Australia) is required to provide an annual report to the GSP Plenary. The first such report is attached. The Chair (currently Neil McKenzie) will provide a five minute presentation at the Sixth GSP Plenary Assembly next week at FAO Headquarters in Rome. This meeting of the P4WG provides a good opportunity for providing feedback that can be incorporated into the oral presentation.</p>	
<p>Key issues</p> <ul style="list-style-type: none"> ● Implementation of Pillar Four is the primary activity of the P4WG and INSII. Good progress has been made but significant issues remain unresolved. ● Guidance is required on how to address these issues during the allotted time at the Plenary Assembly. 	
<p>Required action</p> <ul style="list-style-type: none"> ● Members are requested to consider the attached report and provide suggestions on how to summarize progress in the oral presentation. 	
<p>Resource implications</p> <ul style="list-style-type: none"> ● No immediate implications. 	
<p>Preparation and consultation</p> <p>INSII Chair and GSP Secretariat</p>	

Attachment 1

International Network of Soil Information Institutions (INSII)

Annual Report by the INSII Chair

Introduction

The Fifth Session of the Global Soil Partnership Plenary Assembly clarified arrangements for establishing the Global Soil Information System (GLOSIS). The Plenary Assembly, amongst other things:

- endorsed the GSP Soil Data Policy
- endorsed the legal basis for a fully functioning GLOSIS
- established the International Network of Soil Information Institutions (INSII) as proposed in the Pillar Four Plan of Action
- appointed the Chair of INSII (CSIRO Australia)
- appointed the GSP Soil Data Facility (GSP SDF) (ISRIC - World Soil Information).

More specifically, the Fifth Plenary Assembly determined that the INSII will:

- convene an annual meeting to monitor progress on Pillar Four implementation and the relationships to the regional soil partnerships shall be regularly addressed and developed
- appoint a Chair for a period of 2 years, extendable via INSII decision to a second term - the chair will moderate the annual workshop and the Pillar Four Working Group (P4WG)
- contribute to the execution of the Pillar Four Implementation Plan by serving as its strategic decision making body, within the constraints of the Pillar Four Plan of Action approved by the GSP Plenary Assembly
- oversee the P4WG and the GSP SDF
- delegate tasks to the P4WG, as needed, to support the efficient implementation of Pillar Four
- provide access to soil geographic information in order to populate the products of the Global Soil Information System under specified conditions (Pillar Four code of ethics and IP policy)
- support the implementation process by providing overall guidance and advising on matters related to funding and actions
- endorse a code of ethics for privacy, data sharing, and data use, and submit this to the GSP Plenary for approval
- report on progress and outstanding issues at each GSP Plenary Assembly.

This report fulfils the last item for the period June 2017 to May 2018.

Recap on purpose

The success of GLOSIS depends on the degree to which it satisfies the three primary functions outlined in the Pillar Four Plan of Action, namely:

- supply fundamental data sets for understanding Earth-system processes
- provide the global context for more local decisions

- answer critical questions at the global scale.

Examples of critical questions include:

- Is there enough arable land with suitable soils to feed the world?
- Are soil constraints partly responsible for the often large gaps between actual and potential crop yields?
- Can changes to soil management have a significant impact on the seemingly unsustainable global demand for nutrients?
- To what extent and cost can changes to soil management contribute to climate change adaptation, particularly at the scale of smallholder agriculture?
- Can changes to soil management have a significant impact on atmospheric concentrations of greenhouse gases without jeopardizing other functions such as food and fibre production?
- How will the extent and rate of soil degradation threaten food security and the provision of ecosystem services in coming decades?
- Can water-use efficiency be improved through better soil management in key regions facing water scarcity?
- How will climate change interact with the distribution of soils to produce new patterns of land use?

The technical and institutional complexity of GLOSIS is substantial. It will be essential over coming months and years to make sure that the key measure of success is the degree to which GLOSIS fulfils these functions.

June to December 2017

Global Soil Organic Carbon Map

The initial part of the reporting period was dominated by the development of the Global Soil Organic Carbon Map. This project provided a valuable proof of concept for the design and operation of the GLOSIS. The basic premise of GLOSIS is that member countries provide soil information into a federated global system. The positive response and contributions from a large number of countries indicated that a distributed system is not only viable but welcomed by member countries. The project also demonstrated the practical value of capacity development and training, much of it facilitated by the FAO.

Launch of the GSP Soil Data Facility

The GSP Soil Data Facility (GSP SDF) was launched at a side-event during the Wageningen Soil Conference in September 2017. This event provided an opportunity to build bridges with other significant communities involved in soil information and sustainable soil management. Meetings with representatives from the former *GlobalSoilMap* Consortium led to consensus on how harmonised technical specifications can be developed for fine-resolution global soil grids (a core product of GLOSIS).

INSII 3

The first official meeting of INSII under the new arrangements¹ was held at FAO Headquarters from the 31st of October to the 1st of November, 2017. More than 50 representatives from national soil information institutions attended. The meeting provided the P4WG with guidance and an overall work plan for 2018. The work plan was derived from a prioritisation of the full list of actions in the

¹ The [first](#) and [second](#) INSII meetings were held in 2015 and 2016 as part of the development of the Pillar Four implementation process.

Pillar Four Implementation Plan. INSII 3 agreed to the following activities being implemented during 2018 with the P4WG having responsibility for operational oversight during the year.

- Prepare a concept note for Soil STAT including feasibility and design principles for soil monitoring. The concept note will be approximately 20 pages in length and pay particular attention to current monitoring activities undertaken by the UN and OECD. The Pillar Four Working Group is to ensure that input is obtained from relevant GSP partners and specific input will be sought from the IUSS Working Group on Soil Monitoring.
- Develop a promotional brochure on Pillar Four that can be shared with current and potential resource partners to ensure sufficient funds are raised to enable full implementation.
- Develop technical specifications for the Tier 1 and Tier 2 databases
- Prepare Version 2 of the GSOCmap and follow the recommendations from the GSOC17 Symposium in relation to establishing a working group for guidelines/protocol for the measurement, mapping, reporting, verifying and monitoring of SOC stocks.
- GSP SDF to supply web services to ensure easy online access to the GSOCmap and subsequent updates (initial data transfer originally scheduled for 3rd week of November 2017).
- Develop a proposal for the Global Soil Polygon coverage with a view to testing demand for the product. Close consultation will be necessary with technical teams that supply related products at present (e.g. the European Commission's JRC and their implementation of SOTER for various regions).
- Clarify whether an updated version of the Harmonised World Soil Database is still required. Originally conceived in the Implementation Plan as an interim product, the availability of new products (e.g. GSOC, Global Grids) may have satisfied the demand. Check with members of the HWSD Consortium to determine the preferred approach.
- Ensure regular and active communication with INSII members.
- Support the Regional Soil Partnerships and, in particular, determine the need for the development and hosting of national data products for countries that do not have sufficient capacity and resources.
- Facilitate updating of the technical specifications for the fine resolution grid products in collaboration with the IUSS Working Group on *GlobalSoilMap* (Key contact: Mr Dominique Arrouays, INRA, France).
- Provide an update on progress to the 6th Plenary of the GSP in June 2018.

INSII 3 also considered the activities of the GSP Soil Data Facility. The role of the GSP SDF is to:

- host, develop and maintain elements of the GLOSI
- provide components for INSII members who choose not to develop their own services
- actively participate in P4WG
- support technical elements of the GLOSI
- support the design and implementation of GLOSI
- support the delivery of SoilSTAT
- connect to GEOSS.

INSII 3 agreed with the work plan proposed by the GSP SDF. It involves focussing initially on the Tier-1 and Tier-2 soil profile databases and Version 0-1 grids. It was also agreed that the GSP SDF is primarily concerned with the provision of the technical infrastructure and the delivery of GLOSI products as web services using the ISRIC managed servers to ensure long-term stability.

The GSP SDF work plan for 2018-2020 has three main elements:

1. Technical specifications of GLOSIS (2018): develop technical specifications of data portal and its data products.
2. GLOSIS data portal (2019): build the data portal and data products.
3. Population of the GLOSIS data portal (2019 – 2020): facilitate population of the Tier-1 and Tier-2 soil profile databases with national and regional contributions.

The [meeting report](#) for INSII 3 is available on the GSP website.

January to June 2018

The Pillar Four Working Group is now meeting regularly and three of the eight meetings scheduled for 2018 have been held via teleconference. There will be an in-person meeting prior to INSII 4 in October 2018. Detailed agenda papers, minutes and audio recordings of meetings are published on the GSP webpage and members are encouraged to keep up-to-date via this channel.

All outcomes from the work of the P4WG will be considered at INSII 4. The most significant will be:

- Draft technical specifications for various components of GLOSIS (e.g. profile databases, grid mapping products, spatial data infrastructure) – these will require detailed review by national soil information institutions and international agencies to ensure feasibility and compatibility with their own systems.
- Draft specifications for SoilSTAT. This system is intended to become a key component of the FAO statistical system and the basis for global monitoring of soil condition. Again, widespread review and consultation will be undertaken to ensure the best possible outcome.
- Draft investment case to support the implementation of Pillar Four.
- Revision of the schedule of activities specified by the Pillar Four Implementation Plan (primarily timing changes caused by limited resources).

Resolutions from INSII 4 will be submitted to the Seventh GSP Plenary Assembly for consideration and decision where appropriate.

Immediate challenges and factors controlling success

The process of developing detailed agenda papers and drafting of design documents for the GLOSIS has revealed some significant institutional issues.

Development of the Spatial Data Infrastructure

A core function of the GSP SDF is to develop the spatial data infrastructure (SDI) to support the GLOSIS. However, at the 5th GSP Plenary Assembly (see [Agenda Item 3](#), page 9, footnote 5) the FAO signalled that it is currently developing a corporate SDI, which will also be aimed at supporting the requirements for the Global Soil Information System. It was indicated that finalisation of the overall SDI for GLOSIS 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.

It is proving difficult to resolve the roles and responsibilities for developing the SDI. While it is acknowledged that the development of SoilSTAT will need to be fully integrated with FAO's corporate SDI, other aspects of the SDI for GLOSIS have to meet the requirements of all INSII members. An efficient and effective arrangement for developing the SDI for GLOSIS is yet to be established.

Support for regional soil information systems

It has always been recognized during the development of Pillar Four that a significant number of countries will require assistance from other countries or international institutions in relation to the development of GLOSIS. The FAO is starting to take on this role for some countries. Other countries have expressed interest in approaching the GSP SDF to obtain the necessary support. Having two providers may result in unnecessary duplication and prevent economies of scale in the development of GLOSIS.

Institutional support and engagement

The Pillar Four Plan of Action recognized the need to achieve net benefit for all partners involved in GLOSIS. One measure of this is the level of participation in the INSII and activities associated with the regional partnerships of the GSP. Only 50 representatives attended INSII 3. Likewise, only a few regions are being adequately represented in the P4WG meetings. The degree of participation has to increase significantly for the GLOSIS to succeed.

Resourcing

As noted earlier, the Pillar Four Implementation Plan conservatively estimated that funding of \$8.6M over six years was required to establish the GLOSIS. Despite some significant investments by the FAO and other agencies (e.g. ISRIC, CSIRO), such a level of funding has not been achieved. INSII 4 will consider a proposal for increasing funding and this will be submitted to the 7th GSP Plenary Assembly in June 2019. However, funds are needed now.

Ingredients for success

The INSII, P4WG and GSP SDF are in their early stages of development. It is inevitable that issues such as those outlined above will emerge. However, the seriousness of several issues (e.g. roles and responsibilities, resourcing) has the potential to undermine years of preparatory work. It should be noted that the arrangement for developing the GLOSIS agreed at the 5th Plenary Assembly of the GSP provides a workable framework for establishing the system. Success in the coming year depends on more intangible factors, most notably:

- building confidence that the GLOSIS can achieve its purpose
- improving understanding and achieving consensus on the processes for decision making
- developing greater trust between individuals and institutions involved in the design and implementation of GLOSIS.

Actions

The Plenary Assembly may wish to:

- Acknowledge the progress being made in the implementation of Pillar Four and the GLOSIS
- Discuss solutions to the factors currently constraining the work of the P4WG and the INSII
- Provide guidance on how to strengthen institutional support and resourcing.

Neil McKenzie (CSIRO Australia)

INSII Chair

Global Soil Partnership Pillar 4 Working Group	Meeting Number: 4
	Location: Teleconference
	Date: 5 th June 2018
AGENDA Paper	ITEM 4.2
Draft concept note for SoilSTAT	
<p>Background</p> <p>This agenda item was deferred from Meeting 3. It is reproduced here verbatim.</p> <p>The Draft Concept Note for SoilSTAT (see link) note pays particular attention to current monitoring activities undertaken by the UN (e.g. SDGs) and the OECD. The P4WG is to ensure that input is obtained from relevant GSP partners and specific input is to be sought from the IUSS Working Group on Soil Monitoring.</p> <p>At a minimum, the SoilSTAT proposal needs to provide soil-related indices for the FAO statistical system (FAOSTAT). Whether SoilSTAT has a broader scope needs to be considered in the concept note.</p> <p>The Pillar Four Implementation Plan provides some initial guidance on what the concept note needs to consider:</p> <ul style="list-style-type: none"> ● Potential users and type of information to be generated by SoilSTAT (e.g. adoption rates of sustainable soil management to support global assessments) ● The likely models for forecasting soil condition and their data requirements ● The spatial and temporal scale of measurement systems ● Review national and regional reporting systems that currently address factors relating to soil condition. 	
<p>Key issues</p> <ul style="list-style-type: none"> ● Designing and executing a global soil monitoring system is a complex task institutionally, technically and logistically. ● Decisions on design (e.g. spatial and temporal resolution, target variables, reliance on direct or proxy measures of soil condition, stratification, and statistical design) have large budgetary implications. ● An expert team is required to prepare the final concept note and their expertise needs to include scientific aspects of soil monitoring, logistics, institutional capacity and decision making in natural resource management. ● A careful analysis of the potential costs and benefits of SoilSTAT is essential 	
<p>Required action</p> <ul style="list-style-type: none"> ● Discuss options for establishing the expert team including membership, resourcing and institutional engagement. ● Agree on a timetable for preparing the terms of reference and project plan for developing the concept note. ● Assign responsibility for preparation of the agenda paper for Meeting Three of the P4WG 	
<p>Resource implications</p> <ul style="list-style-type: none"> ● Potentially major. ● Refer to the Pillar Four Implementation Plan. 	
<p>Preparation and consultation</p> <ul style="list-style-type: none"> ● INSII Chair and GSP Secretariat 	
Attachments	

Draft Concept Note

https://docs.google.com/document/d/1YosNRb_Z35CppPAHspkppovdAt335vE1d_uvFtLPR-g/edit?usp=sharing

Global Soil Partnership Pillar 4 Working Group	Meeting Number: 4
	Location: Teleconference
	Date: 5 th June 2018
AGENDA Paper	ITEM 4.3
CountrySIS Concept Note	
<p>Background</p> <p>This agenda item was deferred from Meeting 3. It is reproduced here verbatim.</p> <p>According to the Pillar 4 Implementation Plan, GLOSIS will be based on soil data sets provided by national and other institutional soil information institutions according to product specifications. Data will be provided according to own national and institutional terms, minimizing centralized components. The design of the system is based on published standards for the exchange of digital spatial data. First and foremost, with the country-driven approach, the quality of any GLOSIS data product depends on the quality of the data used by the countries to produce it.</p> <p>Therefore, common Guidelines should be prepared outlining the specifications for National Soil Information Systems which will be the backbone of GLOSIS and serve as the data source for GLOSIS data products.</p> <p>The guidelines should provide member countries a generic framework which can be adopted at national level and a one stop shop guidance to build their systems which can easily talk with each other and with GLOSIS.</p>	
<p>Key issues</p> <p>To be discussed</p>	
<p>Required action</p> <ul style="list-style-type: none"> ● Comprehensive survey of the soil information in the countries: the existing soil databases, their structure and content, the existing national and regional soil information systems ● A working group for the development of the Guidelines needs to be established. It should include soil information experts from different regions, GSP Secretariat and SDF. ● Capacity Development programme should support the countries which don't have experience in the development of soil information systems. It will include a practical manual and trainings on the creation and management of soil information systems (Recommendation 4 of the Pillar 4 Plan of Action) ● The protocol for data exchange and sharing will be developed, based on the common specifications of Country Soil Information Systems (Recommendation 5 of the Pillar 5 Plan of Action) 	
<p>Resource implications</p> <ul style="list-style-type: none"> ● Potentially major 	
<p>Preparation and consultation</p> <p>GSP Secretariat, P4WG and SDF</p>	
<p>Attachments</p>	

Country SIS Concept Note

<https://docs.google.com/document/d/17zIOm2HCWNGFX05egPdN4fD04Nqtkr2pPzew019q0eg/edit?usp=sharing>